Creation of Bundengan Organology

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Received : September, 2023
Approved : December, 2023
Published : December, 2023

Abstract

Bundengan is a traditional musical instrument whose existence is still maintained and is also an icon of Wonosobo Regency. The music group Rungon Wresthi created the Bundengan organology in the Wonosobo Regency. This research aims to examine the organological creations carried out. This research uses qualitative methods with a musicological approach. Data was collected through direct interviews and documentation studies. Data analysis was carried out by reducing data, presenting data, and providing conclusions. The results of this research show that Rungon Wresthi is a music group dedicated to preserving Bundengan’s musical instruments. This music group carries out organological creations in the form of changes and developments in Bundengan musical instruments regarding design, materials, and how to play them. There are four types of Bundengan creations, each with its function or using instruments.

Keywords:
Creation, Organology, Bundengan, Rungon Wresthi. Gamelan.
INTRODUCTION

Bundengan is a traditional art whose existence is still maintained and has also become an icon in Wonosobo Regency. Bundengan musical instruments have existed since the 12th century based on writings in the Wreta Book (Kemenparekraf.go.id, 2021). According to Hengky Krisnawan, Barnawi was recognized as the first person to create or discover the traditional Bundengan musical instrument in 1968. However, this discovery revealed that the existence of the Bundengan musical instrument is much older than previously thought. This evidence comes from the Book of Wresta Sancaya, written by Mpu Tanakung in the Majapahit kingdom in the 12th century. The book describes the use of music made from kowangan or tudhung (Arbi & Utomo, 2017).

In 1930, Kunst (in Berutu, 2020), an ethnomusicologist from the Netherlands, discovered a group of duck herders sitting back to back and forming a circle. Kunst & Heins, in the book Music in Java (1973), Kunst & Heins stated that the Bundengan musical instrument is classified as a chordophone and an idiophone musical instrument. The Bundengan musical instrument originates from the kowangan, which is a head protector (tudhung) worn by duck herders (sontoloyo) to protect themselves from the heat of the sun or rain in the past (Sundari & Sumarni, 2018). The kowangan is made from a thick woven bamboo frame and the outside is covered with slumpring (bamboo stem midribs), then tied with palm fiber rope. The name "Bundengan" comes from the word "bindeng". The sound of the Bundengan musical instrument resembles a nasal sound, similar to the sound of someone suffering from a cold. In Javanese society, the nasal sound is called "bindeng" and later developed into the word "bundeng". The word "bundeng" is followed by the suffix "-an" to emphasize the meaning of the object, thus creating the term "Bundeng" (Munir, 2020).

Barnawi, a figure, created the Bundengan musical instrument using four palm fiber ropes and three bamboo blades. When the palm fiber is plucked, it produces a sound that imitates the sound of gamelan musical instruments such as bendhe, kempul, and gong. Meanwhile, the bamboo blades have a sound that mimics the Kendang musical instrument (Berutu, 2020). In the 1950s to 1970s, the traditional Bundengan musical instrument was prevalent among the people of Wonosobo. It was used as an accompaniment in performing arts, including Mask Dance, Jaran Kepang, and Lengger. Barnawi, a famous artist from Wonosobo, has an essential role in popularizing this musical instrument by using Bundengan as an accompaniment (Arbi & Kapoyos, 2019). However, after Barnawi died in 2012, Bundengan musical instruments declined and almost became extinct. The development of time and technology in the era of globalization has also caused this musical instrument to be marginalized due to the pace of modernization and the influence of external culture, which demands a shift in values in human life (Limbong, 2018).

In the context of Bundengan music, many Bundengan music artists are trying to adapt by creating various new ideas to maintain their culture so that it remains relevant to the demands of the times (Christy, A., & Rachman,
A. 2023). Moreover, fans of Bundengan arts are limited to senior players because playing Bundengan musical instruments requires special skills. This is difficult for laypeople because it involves complex hand movements with different melodic and rhythmic patterns. It takes a long time to get good at playing it. Playing Bundengan alone also causes boredom, especially for the younger generation, who prefer activities together (Rachmawan, 2023). Rungon Wresthi is one of the music groups in Wonosobo Regency that wants to take part in overcoming the challenges of globalization by helping to preserve Bundengan through organological creations. The organological design carried out by the Rungon Wresthi music group was to make four Bundengan musical instruments with their types, functions, and uses. Therefore, researchers want to know about the Bundengan organological creations by the Rungon Wresthi music group.

Several previous studies have been carried out to study Bundengan musical instruments, such as research by Berutu (2020), which examined the creativity shown by a character named Barnawi in developing Bundengan music. In this research, Barnawi changed a triangular hood (kowangan) into a musical instrument called the Bundengan. The creation of musical instruments is influenced by four elements of creativity: personal, process, driving force, and product. Likewise, the concept of creativity used in this research also uses the "Four P's of Creativity" concept from Rhodes (1961) to analyze creativity, which is formulated to include person, press, process, and product. This discussion is also supported by research conducted by Rachmawan (2023). Still, this research focuses on the organological creation of the Bundengan musical instrument by the Rungon Wresthi music group in Wonosobo. Previous research has become the basis for researchers studying the history, function, and efforts to preserve Bundengan music.

**METHOD**

The method used in this research is a qualitative method with a musicological approach. Bogdan and Taylor (1992) define qualitative methods as a research procedure that produces descriptive data in the form of spoken or written words from individuals and includes attitudes and behaviors that can be observed. Meanwhile, according to Ha Lang and L. Harp (in Apel, 1965), the musicological approach consists of all knowledge related to the creation, form, and application of various physical phenomena in sound.

Researchers used observation, interview, and documentation techniques to collect data. The observation method is carried out by observing, analyzing, and understanding phenomena related to Bundengan organological creations. The researcher will describe information obtained through direct observation. The research was conducted at the base camp of the Rungon Wresthi music group, which is located at Sanggar Setyo Langen Budoyo, Jalan Sindoro-Sumbing KM07, Angrunggondok Hamlet, Reco Village, Kertek District, Wonosobo Regency, Central Java. In this research, the interview method was carried out by a question-and-answer session with the main resource person, Agung Wahyu Utomo.
chairman of Sanggar Setyo Langen Budoyo and creator of Bundengan. Interviews were also conducted with players from the Rungon Wresthi Group. Document studies are also carried out by collecting various information in the form of written archives, images, videos, etc. Source triangulation techniques were used in this research to ensure the validity of the data. The collected data was then analyzed through several stages, including data reduction, presentation, and conclusion.

RESULT AND DISCUSSION

Bundengan is a traditional musical instrument originating from Wonosobo Regency. This musical instrument was created through efforts to change the function of the kowangan, which is usually used by duck herders as a shelter from the hot sun or rain, into a musical instrument that imitates the sound of the gamelan (Arbi & Kapoyos, 2019). Bundengan imitates gamelan sounds, including bendhe, kempul, and gong instruments. These instruments are represented as strings on the Bundengan, while the Kendang is defined as bamboo blades. According to a study conducted by Arbi and Kapoyos (2019), it was stated that during the Majapahit era, the process of replicating Bundengan music from gamelan occurred. In that period, gamelan music could only be enjoyed by the elite and royal circles as players and spectators.

His book entitled “Bundengan Nuansa Klasik dan Kontemporer” (Wuryanto & Wasonoputra, 2020) provides an overview of the history of Kowangan music in Java and the traces of Bundengan in Wonosobo Regency. The use of the Kowangan as a musical instrument has been recorded since at least the early twentieth century, with research by the Het Java Institute. This book explains that Kowangan music has spread to various regions in Java, including Yogyakarta, Magelang, Boyolali, Temanggung, and Wonosobo. In each area, Kowangan musical instruments have different names. In ancient times, Boyolali, Magelang, and Yogyakarta called it Clempungan.

Meanwhile, in Temanggung, it is called Cengklungan, and in Wonosobo Regency, it is called Bundengan. Each region develops with its characteristics. This book discusses explicitly the organology of Bundengan musical instruments, which consists of several components: the Kowangan construction layers (inner and outer layers), drums, and strings (pencon). Apart from that, it was explained that Bundengan art in Wonosobo Regency initially developed thanks to the contribution of several practitioner figures who were concerned about its preservation. Bundengan has been preserved as a traditional art in the Wonosobo Regency and passed down from generation to generation.

The discussion of the early history of Bundengan’s emergence in the book provides essential information for researchers to understand the journey and development of Bundengan art in Wonosobo Regency. However, researchers see empty gaps in the book by Wuryanto and Wasonoputra, which does not discuss the development of Bundengan today. Talented young artists are starting to emerge and creatively add new color to Bundengan art activities in
Wonosobo Regency with fresh and innovative works. This development cannot be separated from the creative ideas created.

Over time, Bundengan in Wonosobo Regency has experienced significant progress. More and more art groups or studios are promoting more exciting and open-minded art concepts in line with current developments. One example is the Rungon Wresthi art group. Rungon Wresthi is one of the musical groups that uses Bundengan in its work process. Rungon Wresthi developed the concept of Bundengan art using a group approach, where four people play four Bundengan musical instruments. The idea of serving Bundengan promoted by Rungon Wresthi is unique and almost not found in the Wonosobo Regency area. In this case, the group approach to playing Bundengan is called an ensemble, which refers to music played in groups using similar musical instruments, namely Bundengan. The concept proposed by Rungon Wresthi is unique because the Bundengan they use in presenting Bundengan ensemble music has gone through organological creation.

Bundengan was born and grew from efforts to modify the function of kowangan. The kowangan was modified with creativity in exploring music. Rungon Wresthi creates Bundengan, starting from the form, aesthetics, sounds, and playing techniques. In its execution, Rungon Wresthi made Bundengan into four types of Bundengan, each with its function and use, giving rise to new sounds in each Bundengan. The initial idea to create Bundengan came from one of the Rungon Wresthi members, Agung Wahyu Utomo. Quoted from the author's interview with Agung, he conveyed that this innovation or creativity was based on personal anxiety. He dreams of introducing Bundengan to a broader audience and proving that traditional musical instruments can compete with today's music in this modern era. In his creative process, he carried out several types of research from his musical experience until, in the end, he realized this creation, which became the form of 4 Bundengan musical instruments.

Based on the interview quote, the concept of creativity includes person (personal), namely creativity in individuals that emerges through actions that are influenced by their overall personality and interactions with the surrounding environment. Individuals who have creativity show the ability to adapt to existing situations and do whatever is necessary to achieve goals, as expressed by Csikszentmihalyi (in Munandar, 2016: 51). Press (encouragement) are factors that influence creative individuals whether they come from within themselves (intrinsic motivation) or from the surrounding environment (extrinsic motivation). According to Rogers (1982), the inherent drive becomes the primary motivation for creativity when individuals create new relationships with their environment to express themselves fully.

Meanwhile, extrinsic drives are factors from a person's surrounding environment, such as parents, siblings, friends, and the people around them. These environmental factors have a significant influence on the
development of individual creativity. This was stated by Hurlock (in Utomo, 2017), that although each individual has different creative potential if they are in an unsupportive environment, their creative development will be hampered. Conversely, if they are in a supportive environment, their self-confidence will increase, allowing them to optimize their creativity well. According to Torrance (in Steinberg, 1988), the definition of process in creativity includes all creative and scientific stages, from identifying problems to presenting the results.

Products or creative products, in this context, are the result of a creative process that emphasizes originality, novelty, and meaning. This definition aligns with Barron’s (1969) view, which states that creativity is the ability to produce or create something new. Apart from that, according to Rodger, 1982 (in Munandar, 2016), there are three criteria for creative products: the product must be observable, the product must have an element of novelty, and the product is the result of individual uniqueness in interaction with the environment.

Agung Wahyu Utomo modified Bundengan to support creativity in his work with Rungon Wresthi. They created the Bundengan organology by making changes, starting with the design of the Bundengan musical instrument, to increase the aesthetic value, quality of sound, and the range of tones that can be produced. Rungon Wresthi also conducted experiments using new materials to make Bundengan musical instruments. Apart from that, Rungon Wresthi developed more complex playing techniques for Bundengan musical instruments, such as creating broader rhythmic patterns, melodies, and harmonies.

The Bundengan created by Rungon Wresthi imitates gamelan sounds, which are then implemented into four types of Bundengan, namely Bundengan Kendang, Bundengan Siter, Bundengan Slenthem, and Bundengan Bonang. Looking at the history of Bundengan itself, the process of replicating or imitating the gamelan sounds of Bundengan has been going on since the Majapahit era, as stated by Arbi & Kapoyos (2019) in their study. However, what differentiates the original Bundengan from the Bundengan created by Rungon Wresthi is its organology. In contrast, in the original Bundengan there are usually four strings (eduk) and three bamboo blades (welad) in one kowangan. Meanwhile, Bundengan Rungon Wresthi has four types of Bundengan, each with its function or use.

### Design of Bundengan Instrument

Rungon Wresthi’s creation of Bundengan organology includes several aspects, one of which is instrument design. According to Widagdo in the book "Tinjauan Desain" by Sachari and Sunarya (2016), design is a tangible manifestation of culture. It is a product of values for a certain period. The first thing Rungon Wresthi did in creating Bundengan was to make design changes. In this context, it certainly affects the function of the Bundengan.

One of the design changes that stands out is adding woven bamboo to the edge around the kowangan, which forms like a frame. This is done to
provide aesthetic value and as a characteristic or identity of Bundengan from Rungon Wresthi, where in the book Aesthetics (Aesthetics, 2000) the term aesthetic comes from the Greek adjective, aesthetikos, which means relating to perception. Apart from that, Rungon Wresthi also conducted experiments by changing the raw materials in its Bundengan. Regarding the raw material, namely bamboo, Rungon Wresthi chose wulung bamboo as the primary material in his Bundengan.

Figure 1. Bamboo Anatomy

This bamboo is used in almost all of Bundengan. Things related to bamboo anatomy can be seen in Figure 1. The first part that uses bamboo is the kowangan frame. The framework uses bamboo skin sections that are cut or threaded with tangential threads that are woven loosely. On the outside or cover, in this context, a slump ring or bamboo frond is usually used; this is different from the one used by Rungon Wresthi in that the body is covered with a heart of bamboo, which is threaded with tightly arranged radial stripes.

This aims to make the resulting sound or resonance much clearer and better. Next, the cover is tied using palm fiber rope. On the edge or frame, weaving is made around the kowangan with ornamental motifs made from small bamboo strips, beautifying and increasing the aesthetic value and as a characteristic of Bundengan Rungon Wresthi.

Figure 2. Design of Rungon Wresthi Bundengan Instrument

Figure 3. Design of Rungon Wresthi Bundengan Instrument

Figures 2 and 3 are a form of the instrument design from Bundengan Rungon Wresthi. Based on the picture above shows 4 Bundengan, each of which has its structure or organology as well as its function and use, including Kendang Bundengan, Siter Bundengan, Slenthem Bundengan, and Bendhe Bundengan.

1. Bundengan Kendang

Kendang is often found in karawitan or gamelan music. The organological creation carried out by
Rungon Wresthi imitated the Kendang musical instrument on the gamelan, which was later named Bundengan Kendang. This creation involves changing the function of a traditional Bundengan musical instrument into Kendang.

**Figure 4. Bundengan Kendang**

The design of the Bundengan Kendang includes modifications to the existing structure of the Bundengan musical instrument, such as adjusting the size and layout and reconstructing its organology to produce the expected sound or sound of the Kendang. As the name suggests, Bundengan Kendang, where the function of the Bundengan Kendang is focused as a Bundengan that plays rhythmically or holds rhythm in the Bundengan Rungon Wresthi ensemble.

**Figure 5. Bundengan Kendang**

Bundengan Kendang does not use strings like the original Bundengan. Only bamboo strips (welad) are arranged by inserting them into the Bundengan frame. On the left there are six welads and on the right there are ten welads. It can be seen in Figure 5 above. The welad has different lengths and thicknesses. The size of the welad affects the sound or sounds produced. The left bar has a sound character that tends to be high, while the left has a rigid surface that tends to be low. Bundengan Kendang can imitate various Kendang sounds, including Kendang jaipong, ciblon, dangdut, and ageng. Bundengan Kendang's flexibility in playing multiple songs makes it very suitable for diverse musical needs.

2. Bundengan Siter

**Figure 6. Bundengan Siter**

The Bundengan Siter is an organological creation of the Bundengan musical instrument by Rungon Wresthi. Why is it called Bundengan Siter? Because the function of Bundengan Siter is similar to the Siter in gamelan, where its role is as a melody maker, apart from that, when working on a clever song, this tool can act like a saron, composing melodies that are repeated over and over again to fill in the empty spaces in the work to create a denser unity.
Bundengan Siter has a more tinny sound character, with a sound that tends to be thin but sharp. In terms of design, Bundengan Siter has the same kowangan size as Bundengan Kendang. However, in Bundengan Siter, the organological elements are different from Bundengan Kendang. Because Bundengan Siter has no welad (bamboo blades) like in Bundengan Kendang because Bundengan Siter has a different role and function from Bundengan Kendang.

![Figure 7. Bundengan Siter](image)

As seen in Figure 7, in Bundengan Siter, a resonance box made of bamboo is added. The shape of the box in the middle of the kowangan resembles a frame. The top of the box is made of small woven bamboo that stretches out and has a small square hole in the middle of the woven material. Then, on the edge of the frame, there is a bridge made of blades that support the strings. The strings are made from motorbike brake wire threaded per strand. The number of lines or rows on the Bundengan Siter is 30 strings, each with a double tone. Bundengan Siter consists of 15 notes arranged sequentially. However, as seen in Figure 7 above, five double lines on the left lack support. This means that the strings cannot be tuned properly, so they cannot be used. So, the total number of new lines that can be used is ten double strings.

3. Bundengan Slenthem

![Figure 8. Bundengan Slenthem](image)

Figure 8 shows the shape of the Bundengan Slenthem musical instrument. Bundengan Slenthem adopts terms from gamelan and is inspired by the Slenthem musical instrument in gamelan. The form of the slenthem is almost similar to other Bundengan but shorter in size. In the middle of the tool is a square wooden frame as a foundation and a place to install the strings to make it stronger. The lines on Bundengan Slenthem have a low pitch character. The function of the Bundengan Slenthem is almost the same as the Slenthem musical instrument in gamelan, namely as a holder for the main balungan pattern, where the series of notes fall on a solid beat.

Bundengan Slenthem uses a slendro scale. This tool has nine strings, but only seven lines are usually used. The reason is that the two strings not used have a sound character that sounds strange or false, and the right tone formula has yet to be used. The
strings are second from the top. The lines on the Bundengan Slenthem are made from nylon strings, usually used on classical guitars, or sometimes using nylon thread, which builders generally use.

4. Bundengan Bendhe

Figure 9. Bundengan Bendhe

Bundengan Bendhe is a Bundengan whose shape and structure tend to be similar to traditional Bundengan. Bendhe Bundengan has a taller and longer kowangan body, uses the same stand or support as traditional Bundengan, and has the same string placement as traditional Bundengan. However, the difference between Bundengan Bendhe and traditional Bundengan is in the number of strings, whereas in traditional Bundengan, there are only four strings, while in Bundengan Bendhe, it has nine strings. Apart from that, the difference between Bundengan Bendhe and Traditional Bundengan is that there is no welad on Bundengan Bendhe like in traditional Bundengan because Bundengan Bendhe is also focused on playing melodies without any Kendang in this Bundengan.

The function of Bundengan Bendhe is almost the same as Bundengan Slenthem. However, Bundengan Bendhe has a rhythm twice as fast as Bundengan Slenthem in playing. In the context of traditional music, the term used to refer to faster rhythms is "mlaku". There is a difference in sound character between Bundengan Slenthem and Bundengan Bendhe. Bundengan Slenthem's voice character tends to be lower, while Bundengan Bendhe has a voice character that is in the middle between low and high (middle). Thus, the tone frequency in Bundengan Bendhe is around one gembyang higher than in Bundengan Slenthem.

Bundengan Instrument Scales

After discussing instrument design, musical instruments must be distinct from the tone system, tuning system, rhythm, timbre, or sound color of the musical instrument itself. Several musical instruments have a tone and tuning system in this context, including the Bundengan Siter, Bundengan Slenthem, and Bundengan Bendhe. Meanwhile, Bundengan Kendang is a musical instrument that emphasizes the rhythmic aspect. Each musical instrument has unique timbre or sound color characteristics. In this context, to explain the tone system and the pattern or rhythm used to write notation.

1. Bundengan Kendang

Based on the explanation regarding Bundengan Kendang, it can be seen that Bundengan Kendang has 16
bamboo blades (welad). The characters of the welad sound in Bundengan Kendang include tak, thung, dhe, ndang, pung, bah, dah, tong, lung, ket, tlang, ndlang, ndet, and other developments. When writing notation on Bundengan Kendang, the rule of writing musical approach is used. The following is the description or symbol of the Bundengan Kendang:

\[
\begin{align*}
\text{t} & : \text{Tak} \\
\text{k} & : \text{Ket} \\
\text{p} & : \text{Thung} \\
\text{b} & : \text{Dhe} \\
\text{d} & : \text{Ndang}
\end{align*}
\]

2. Bundengan Siter
It can be seen that the Bundengan Siter has ten double strings, using a diatonic scale which includes 6, 7, 1, 2, 3, 4, 5, 6, 7, 1, 2, 3. The Bundengan Siter tuning system follows the principles of Western musical instrument tuning, where the notes are adjusted to the scale of the song to be played. For example, the song "Kalam Jiwa" by Rungon Wresthi uses the C# major scale, so the note 1 (do) is transposed to the note C#. However, in writing the notation for Bundengan Siter, a number notation approach with a diatonic system is used.

3. Bundengan Slenthem
As has been explained about Bundengan Slenthem, it has seven slendro-barreled strings. The seven strings include:

\[
i, 6, 5, 3, 2, 1, 6\]

The notes above are ordered from the bottom string to the top line.

4. Bundengan Bendhe
Bundengan Bendhe has nine slendro-tuned strings, which have two main functions, namely as a melody maker and gong. The bottom six notes are melody makers with a series of notes 1, 2, 3, 5, 6, and 1 (tone order from bottom to top). Meanwhile, the three notes above function as kempul and gong with the notes w, y, and t (tone sequence from bottom to top). These three gong tones use nylon strings with a thicker gauge texture.

CONCLUSIONS

Through the findings explained in the research above, it can be concluded that the Bundengan is a traditional musical instrument originating from the Wonsosobo Regency. Initially, Bundengan was created to change the kowangan's function into a musical instrument that imitates the sound of the gamelan. Bundengan Rungon Wresthi imitates gamelan sounds, with instruments such as Bendhe, kempul, and gong represented in the form of strings on
Bundengan and Kendang represented in the form of bamboo blades.

Rungon Wresthi developed the concept of Bundengan art using a group approach and individual creativity. Rungon Wresthi created Bundengan into four types: Bundengan Kendang, Bundengan Siter, Bundengan Slenthem, and Bundengan Bendhe. Each type has a function and role in the musical ensemble. Bundengan Rungon Wresthi’s creations include changes in design, shape, aesthetics, raw materials, sounds, and playing techniques. Rungon Wresthi’s creative process includes stages from identifying problems to presenting the results, and the resulting innovative products are original and unique. Bundengan Rungon Wresthi’s creation produces musical instruments with different functions and sound characteristics from traditional Bundengan but still carry the characteristics of traditional Wonosobo.

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