



The Flute: Musicality and Types of Coverage in Balinese Gamelan



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Abstract

The flute is a wind instrument in Balinese gamelan that serves to enhance the music and connect empty sections. While it is often considered a complementary instrument, upon closer inspection, it plays a significant role within the ensemble. This paper examines the musicality of the flute and the types of coverings found on the instrument. This qualitative research draws data from participant observation, interviews, and document studies. The theories used include ethnomusical, structural-functional, and ethnomusicological theories. The results indicate that the flute plays a crucial role in Balinese gamelan, not only as a unified whole within the ensemble but also as a stand-alone instrument within the gamelan gong suling ensemble, often referred to as gamelan gong suling. As part of Balinese gamelan, the flute is rich in musical elements. This richness of musical elements can be seen in the form and type of repertoire, composition, rhythm, melodic formulas, and arrangement patterns. Meanwhile, the flute has at least five types of coverings in use: dong covering, deng covering, dung covering, dang covering, and ding covering. Keywords:

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1 Introduction

The flute plays a crucial role in Balinese gamelan, serving as an embellishment to the song, sweetening the melody, and accompanying it. According to ancient folklore, the sound of the flute was even used to woo a young woman and to facilitate engagement (Suharta, 1994). The Balinese flute is a wind instrument made from bamboo with six holes and one blow hole to produce sound. The Balinese flute's notes possess artistic value, with notes derived from the Balinese script, often referred to as pengangge aksara. When playing the Gong Kebyar flute, there are five covers, known to the Balinese as tetekep. The flute is a wind instrument (aerophone), a bamboo flute based on the principle of a "and-blow flute," with six tone holes and one sweetening hole to produce sound. Balinese flutes use siwer, and come in various sizes, from large (long), medium and up to the smallest size (Bandem, 2013).

The presence of the flute in Balinese gamelan can create a more lively, dynamic, and engaging experience, complementing certain barungan in its presentation. The flute is made simply from a small bamboo stick, but behind its simplicity, the flute demonstrates its identity as a very unique instrument; it has a high level of playing, quite complex rules for its construction, and has quite diverse functions (Suharta, 2005).

Producing a range of sounds, whether high, medium, or low, depends heavily on the air pressure delivered through the flute's sound hole. Furthermore, the position of the mouth and lips plays a role in producing different dynamics or tones. Therefore, proper blowing technique significantly impacts the quality of the sound produced. Playing techniques can be symmetrical to the song or provide an illustration of the melody, either preceding or following the melody. Learning basic flute playing techniques is a learning tool developed through the flute's tetekep technique and is based on understanding the basic notes of the flute (Terrien et al., 2013).

2 Materials and Methods

This research is a qualitative study within the field of art studies. The flute, as the object of this study, is examined in terms of its musicality and the types of coverings used on the instrument. The majority of the data is qualitative, obtained from primary and secondary sources. All data were obtained through participant observation, interviews, document review, and literature review. All data were then analyzed according to the objectives and presented in this article.

3 Results and Discussions

The flute plays a crucial role in Balinese gamelan, serving as an embellishment to the song, sweetening the melody, and accompanying the song. According to ancient folk tales, the sound of the flute could even be used to woo a young woman and to facilitate engagement (Suharta, 1994). The flute is a Balinese gamelan instrument and is played by blowing into it. The flute comes in various sizes, from large, medium, and small, ranging from long to short. According to the classification of instruments, the flute is classified as an aerophone, a type of musical instrument that produces sound through the action of air, using a technique called *ngunjat angkihan*.

The Balinese flute is a wind instrument made from bamboo, shaped like a long pipe. One end is covered by a bamboo segment, while the other is uncovered to allow air to escape. Six holes are drilled into the bamboo stem, spaced apart, and the size of the holes is determined by the size of the flute. The six circular holes are called pitch holes, while the rectangular holes are called sweetening holes. Based on an interview with Mr. I Made Rana, a Balinese flute artist and craftsman, the sweetening holes determine the quality of the sound produced by the flute.

The Gong Kebyar flute, often called the Pegongan flute, is a medium-sized and small flute with a five-note pelog scale: ndeng (5), ndung (7), ndang (1), nding (3), and ndong (4). Balinese flute tones possess artistic value, with notations derived from Balinese script, often referred to as pengangge aksara. Playing the flute is not simply a matter of opening and closing the holes; it requires dexterity to produce a quality sound. In playing the flute, there are several things to consider besides playing technique, namely.

1. Attitude

Attitude when playing the flute is also very important to pay attention to. This attitude also influences the sound produced. A similar explanation was given by Mr. I Gusti Ketut Sudhana during an interview, who said the following:

"...When playing the flute, besides technique, there's also a posture that must be considered. Proper posture for playing the flute is sitting cross-legged, with a straight body position and elbows not touching the thighs.

This affects breathing and performance. From a breathing perspective, sitting upright determines smooth breathing while playing the flute and also comfort for the flutist. (Interview, Monday, February 25, 2026)

Mr. I Made Rana also stated something similar, stating that the correct posture when playing the flute is to maintain a straight body, sit cross-legged, and keep your elbows off your thighs. He added that good posture creates power when playing the flute, resulting in a loud, consistent sound.

Furthermore, Jitae Chung, in his thesis, also stated that the sitting position when playing the flute significantly influences breathing and performance. From a breathing perspective, the sitting position also determines comfort and smoothness of breathing. In terms of performance, the sitting position can also determine neatness and good performance quality (2015:53). The desired posture is a perfect posture, just like playing other instruments, as long as the flutist's comfort is maintained while playing the flute.

When playing the flute, the fingers (index, middle, and ring fingers) cover the holes on the front of the flute. These fingers play by opening and closing the holes, producing notes.

2. Breathing

Breath control in flute playing is not as easy as it seems, but rather requires a very complex technique compared to learning other instruments. To properly regulate breath and maintain a consistent rhythm while playing the flute (ngunjal angkihan), serious practice is required over a varying amount of time, depending on the student's ability to learn the technique. Proper breath control (ngunjal angkihan) requires serious practice, with the following requirements: a) Exhalation must never occur through the nostrils; it must occur through the mouth; b) In the oral cavity, the base of the tongue actively regulates the breathing process and functions to divide the exhaled breath; c) Air that has entered the oral cavity should not be connected to the stomach. The air in the mouth should not run out (as a reserve) so that there is a reserve of air when inhaling, resulting in a continuous flute sound (Warsa, 2018).

The Musicality of the Flute

The musicality of the flute encompasses the music, its physical aspects as a text, complete with its sound properties, the way in which it is manipulated, and its acoustic aspects related to socio-cultural contexts. Therefore, understanding the musical structure of the flute cannot be separated from its organology and acoustics, as in its working system, organology and acoustics coexist and form an inseparable chain (Rai, 2004). Organology relates to both the physical and non-physical aspects of the instrument, such as materials, shape, construction, manufacturing methods, physical classification, reasoning, and so on. Meanwhile, the non-physical aspects encompass the function of the music, its relationship to the musician's position, history, comparisons, developments related to performance, and so forth.

The flute instrument, as part of Balinese gamelan, is very rich in musical elements. The richness of its musical elements can be seen from the form and type of repertoire that can be played, composition, rhythm, melodic formula, and its arrangement pattern. Sunarto (2018) states that the characteristic of Balinese music lies in its musicality through the speed of melody and rhythm played in close coordination with each other and sudden shifts in tempo and dynamics, from slow, soft, extended melodies to fast, very dramatic, and short ostinato. This statement indicates that the musical elements in Balinese gamelan itself have a close relationship between one element and another and are interrelated resulting in the formation of a very dynamic musical harmony (Zhu & Wang, 2012).

Talking about musicality in relation to the flute instrument, it cannot be separated from the elements that make up the music. Since ancient times, Balinese gamelan artists have instilled concepts that emphasize balance between parts that create a balanced musical structure. These concepts can be two-dimensional, three-dimensional, four-dimensional, and so on. Two-dimensional concepts include the concepts of resistance and equality. The concepts of lanang wadon, ngumbang ngisep, tegeh endep. Three-dimensional concepts include: kawitan, pengawak, pengecet, head, body, and feet. All of these concepts have been widely used both in conceptualizing and creating works in the form of dance accompaniment and instrumental gamelan (Tervaniemi et al., 1997).

Indeed, the previous Balinese gamelan artists have laid a strong and clear foundation for the compositional forms in Balinese gamelan. These forms have been well organized based on their purpose and type of repertoire. Aryasa &

Madra (1984) states that in Balinese gamelan the form and structure of the gending can be divided into two, namely the pengilak form and the tabuh form. The group of gending that is classified into the pengilak form includes: kale, batel, bapang, gilak, gabor, legodbawa, tunjang, and sesimbaran. Meanwhile, the group of gending that is classified into the tabuh form includes: tabuh pisan, tabuh dua, tabuh telu, tabuh pat, tabuh lima, tabuh nem, and tabuh kutus. In relation to the above, to analyze the musicality in flute instruments, ethnomusical theory, ethnomusicology, and structural functional theory are used.

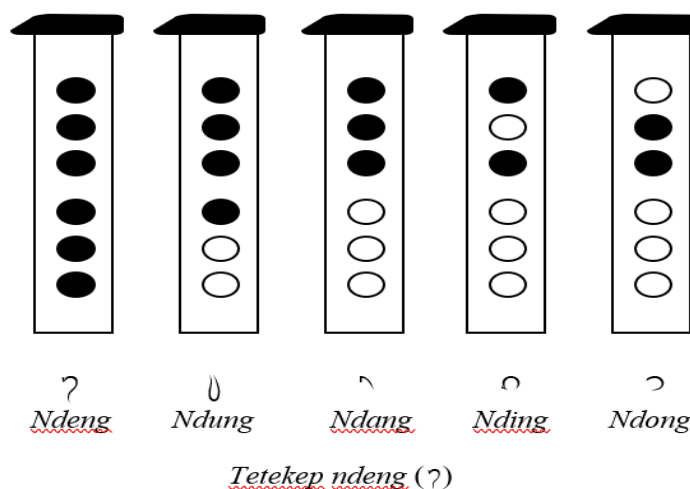
As previously explained, to understand the music of an ethnic group, in addition to studying the music itself structurally, one must also observe the social and cultural aspects of its people. This is because the sound system always has a structure that must be viewed as a product of the behavior that produces it. The behavior referred to in this case is the physical, social, verbal, and learning aspects that arise from the underlying conceptualization. The concept of music will not exist without behavior, and without behavior, musical sounds will not be produced. This simple idea has one fundamental implication: music cannot be understood only by studying musical sounds. Merriam (1964) also stated that musical sounds as human products cannot be separated from the reality of their environment, which has objectivity in the music itself.

The ethnomusical framework is based on the principle that in order to understand an ethnic group's music, its physical aspects must be studied as a complete text with its sound characteristics, how to manipulate sound color, and its acoustic aspects must also be studied in detail and linked to the socio-cultural, fine arts, and archaeology associated with it. Studying ethnic music cannot be separated from uncovering its organology and acoustics because in its working system, organology and acoustics are side by side and constitute an inseparable series (Rai, 2004).

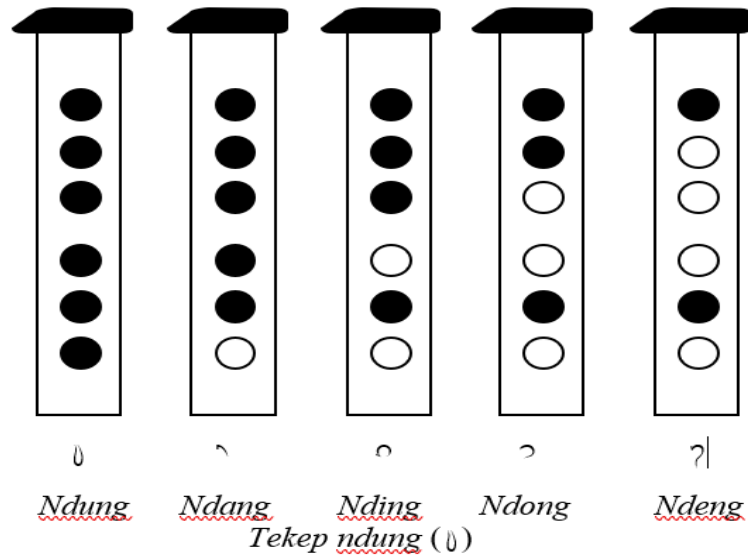
The elements that form the songs played by the flute have fulfilled the musical elements in Balinese karawitan art. Rai (2022) said that musical elements are elements that are directly related to the music such as; tone, rhythm, tempo, dynamics, tuning, patet, palette (phrase), form, structure, ornamentation, and so on. Every song played by the flute contains these elements so that in its presentation it forms a unity that forms harmony, presenting harmony and balance in its performance. Tone plays an important role in a Balinese karawitan composition. Each song presented, the interweaving of these tones determines the quality of a karawitan composition presented. Likewise, other elements are interconnected and mutually support the success of a karawitan composition.

Types of Coverings on the Flute

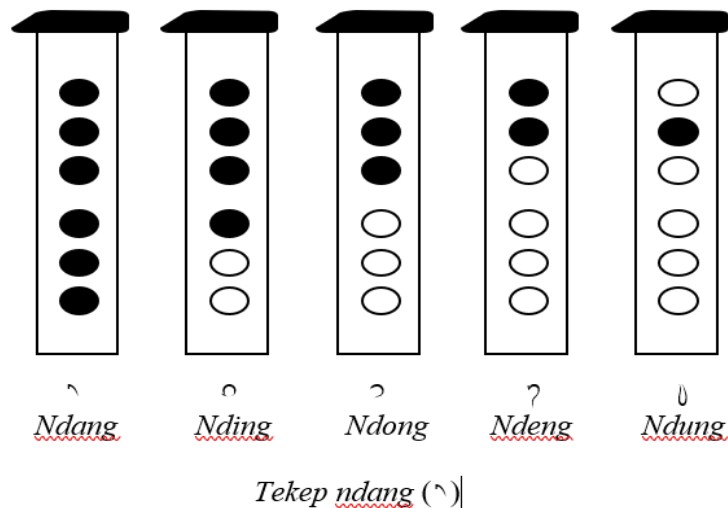
The Balinese flute has artistic value, thanks to its notation derived from the Balinese script, often referred to as pengangge aksara. The flute in Balinese gamelan typically has six tone holes and is played by blowing into it. This blowing technique is often called ngunjat angkihan (continuous blowing). In flute playing, there are five coverings, known to the Balinese as tetekep. These are tetekep ndeng (5), tetekep ndung (7), tetekep ndang (1), tetekep nding (3), and tetekep ndong (4). The following are the tetekep found on the flute.



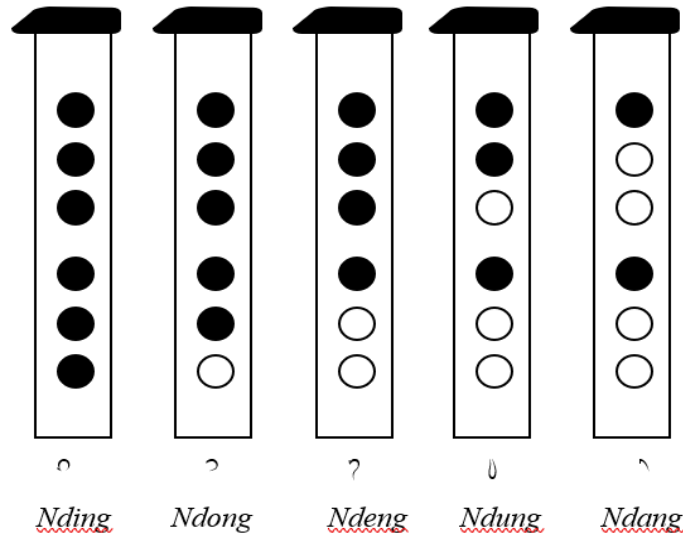
In the picture above, you can see that all the holes are black, which means they are all closed. All the closed holes have a ndeng tone (5). The explanation for the second picture is that the two holes at the bottom are opened simultaneously, producing a ndung tone (7). In the third picture, the three holes at the bottom are opened simultaneously, producing a ndang tone (1). The fourth picture shows the three holes at the bottom being opened, and the hole at the top in the middle is also opened, producing a nding tone (3). And the last picture shows the three holes at the bottom being opened, then the top hole is also opened, producing a ndong tone (4).



In the game, tekep ndung (7) has a different way of covering from tekep ndeng (5). If previously in tekep ndeng (5) all holes are closed, producing the tone ndeng (5), then in tekep ndung (7) if all holes are closed, producing the tone ndung (7). In the second picture, one of the bottom holes is opened, producing the tone ndang (1). In the third picture, two holes are opened, and the middle hole remains closed and produces the tone nding (3). In the fourth picture, three holes are opened and the bottom middle hole at the bottom remains closed until the fifth picture. The tone produced in this fourth picture is the tone ndong (4). In the fifth picture, four holes are opened and the top hole remains closed, producing the tone ndeng (5).

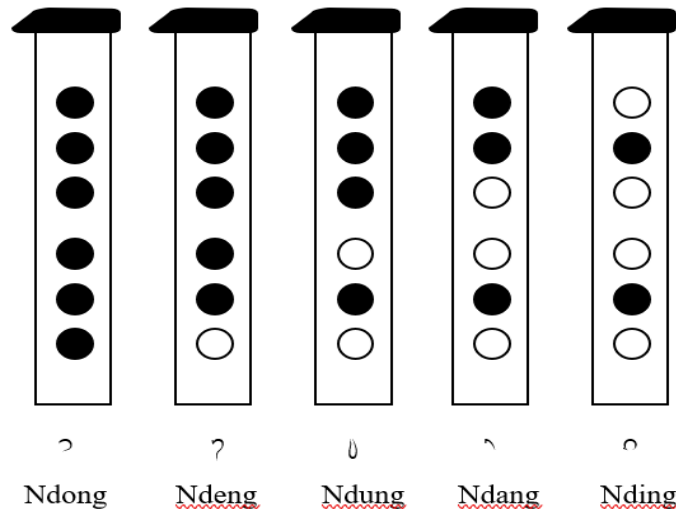


The first picture is no different from tekep ndeng (5) and tekep ndung (7), only the tone produced is different mood. If all the holes are closed on tekep ndang (1) the tone produced is ndang tone (1). The second picture, which is nding tone (3) with the two bottom holes opened. The third picture shows that the hole on the flute bar opens the three holes at the bottom and is ndong (4). Next in the fourth picture, four holes are opened and the two holes at the top remain closed so that it produces ndeng tone (5). In the fifth picture, only the middle hole at the top is closed which will produce ndung tone (7).



Tekep nding (◌)

In tekep nding (3) if all the holes are closed as in the first picture above, it has the tone nding (3). The second picture in this tekep has the tone ndong (4), by opening one of the bottom holes, and in the third picture it has the tone ndeng (5) by opening two holes at the bottom. Next, in the fourth picture it has the tone ndung (7), by opening three holes and the top hole at the bottom remains closed. The last picture opens four holes, two holes at the bottom and two holes at the top, both index fingers remain closed, the resulting tone is the tone ndang (1).



Tekep ndong (◌)

Tekep ndong (4) The first image is the ndong tone (4) where all the holes are closed. While the second image opens the bottom hole, which has the ndeng tone (5). The ndung tone (7) in the third image opens the bottom hole and the

third hole seen from below. Next, in the fourth image, opening three holes, namely the first hole, the third hole, and the fourth hole seen from the bottom hole produces the ndang tone (1). And in the fifth image, which is the last image, opening four holes produces the nding tone (3).

4 Conclusion

The flute in a composition serves to enhance the song and connect the sections. Several flute sizes are commonly used in Balinese gamelan, including: the small flute, which measures approximately 30 cm; the medium flute, which measures 33-40 cm; and the large flute, which measures approximately 40-50 cm.

The elements that make up the songs played on the flute fulfill the musical elements found in Balinese gamelan art. Musical elements are those directly related to the music itself, such as tone, rhythm, tempo, dynamics, tuning, patet (patent), palette (phrase), form, structure, ornamentation, and so on. Each song played on the flute contains these elements, so that in its presentation it forms a unified whole that forms harmony, presenting harmony and balance in its performance.

In playing the flute, there are five (5) covers, or what the Balinese know as tetekep. These tetekep are tetekep ndeng (5), tetekep ndung (7), tetekep ndang (1), tetekep nding (3), and tetekep ndong (4). The following are the tetekep found on the flute.

Conflict of interest statement

The authors declared that they have no competing interests.

Statement of authorship

The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

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References

- Aryasa, I. W. M., & Madra, W. (1984). Pengetahuan Karawitan Bali. *Denpasar: Departemen Pendidikan dan Kebudayaan Direktorat Jendral Kebudayaan Proyek Pengembangan Kesenian Bali.*
- Bandem, I. M. (2013). Gamelan Bali di atas panggung sejarah. Badan Penerbit STIKOM Bali
- Chung, Jitae. 2015. Kajian Akustik Suling Bali Dalam Gamelan Gong Kebyar. *Tesis.* Denpasar: Institut Seni Indonesia Denpasar
- Merriam, A. P., & Merriam, V. (1964). *The anthropology of music.* Northwestern University Press.
- Rai S. (2022). *Tabuh Telu Pegongan Dalam Karawitan Bali.* Pusat Penerbitan LP2MPP Institut Seni Indonesia Denpasar.
- Rai, I. W. (2004). *Unsur musikal dan ekstra-musikal dalam penciptaan gending iringan tari Bali.* Institut Seni Indonesia.
- Suharta, I. W. (2005). *Mengenai Suling Dalam Karawitan Bali Studi Mengenai Identitas Dan Fungsi.* Sekolah Tinggi Seni Indonesia.
- Suharta, I.W. (1994). *Mengenai Suling Dalam Karawitan Bali Studi Mengenai Identitas Dan Fungsi.* Sekolah Tinggi Seni Indonesia.
- Sunarto. (2018). *Musik Nusantara: Dari Sumatra Sampai Timur Barat Hingga Pan- Indonesia,* Semarang: UNNES PRESS.
- Terrien, S., Vergez, C., & Fabre, B. (2013). Flute-like musical instruments: A toy model investigated through numerical continuation. *Journal of sound and vibration, 332(15), 3833-3848.*
<https://doi.org/10.1016/j.jsv.2013.01.041>
- Tervaniemi, M., Ilvonen, T., Karma, K., Alho, K., & Näätänen, R. (1997). The musical brain: brain waves reveal the neurophysiological basis of musicality in human subjects. *Neuroscience letters, 226(1), 1-4.*
[https://doi.org/10.1016/S0304-3940\(97\)00217-6](https://doi.org/10.1016/S0304-3940(97)00217-6)
- Warsa Saputra, I G. (2018). Pengembangan Video Pembelajaran Teknik Dasar Bermain Suling Semar Pegulingan Di Sanggar Swasti Swara Desa Pedungan Kecamatan Denpasar Selatan. *Skripsi.* Jurusan Pendidikan Sendratasik Fakultas Seni Pertunjukan ISI Denpasar: Tidak diterbitkan.
- Zhu, W., & Wang, F. Y. (2012). The fourth type of covering-based rough sets. *Information Sciences, 201, 80-92.*
<https://doi.org/10.1016/j.ins.2012.01.026>