GONG ANGIN
(Organological and Musical Innovations In The Creation of Music Based On Flute Instruments)

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ABSTRACT

The flute is a great source of inspiration in creating new musical instruments. The creation of the Gamelan Flute artwork was carried out to explore the source of ideas for flute instruments, which will then be realized in the form of creating a new set of musical instruments, developments from modified flute instruments with the aim of looking for updates to other forms, both in terms of visual form, technique and function. For this reason, there is a need for organological and musical innovation in the creation of music based on flute instruments. When trying to develop a new musical instrument, creators can take elements of the flute that they find interesting and combine them with creative ideas. By developing flute instruments or using modern technology in making instruments, artists can create unique and interesting sounds, providing a deeper artistic dimension and expressing themselves in new ways in their work. Understanding this cultural background and integrating it into the design of a new musical instrument can hopefully produce something unique and valuable.

Keywords: *Organology, flute, PVC pipe, flute innovation, music.*

PENDAHULUAN

A flute or flute is a wind instrument or one that is generally made from various types of materials, such as wood, bamboo, metal, or plastic, depending on the type and tradition of manufacture. According to the classification of types of instruments, flute instruments are included in the aerophone class, which is a type of musical instrument that produces sound due to the presence of air (wind) which is sounded by blowing air with the mouth into a hole at one end of the flute or on the side. sound source hole and moving the fingers or covers of other holes to produce various tones. The flute is widely used in various types of music throughout the world, and has an important role in the traditional music of various cultures.

Flute instruments are categorized into various types, based on their regional origin, physical form, materials from which they are made and how to play them. For example, in Java it is the Pelog Slendro flute, in Sunda it is the Degung flute, in Bali it is the Gambuh flute, and in Padang it is the Saluang flute. Almost all artistic areas in Indonesia have flute instruments that are unique and vary in terms of size, length, hole, sound and how to play it.

Traditional Javanese karawitan has complex rules and structures. In playing musical instruments, various instruments have different roles and functions. Instruments in Gamelan such as: Gender, Rebab, Kendang, and Sinden are often positioned as core instruments that carry the main melodic motif or Laras. These instruments usually receive greater attention in relation to determining melodic, rhythmic and improvisational patterns. Meanwhile, other ricikan such as: Flute, Gambang, Siter, Celempung and Gender Penerus are positioned as decorations for the flow of songs and have never received a title. (Hendarto, 2011)

The flute in Javanese musical music, especially in East Java, is often considered a complementary or supporting instrument. The role it plays is to support or decorate the main melody, create a certain atmosphere, or add complexity to the performance. However, it is important to note that the position of the Suling in the Indonesian musical context can vary depending on the particular musical composition, genre, or preferences of

the performer and composer. Some composers or musical groups may give the flute a more significant role in their works. The importance of the Flute instrument in a musical composition can be very subjective and can vary from one work to another. This view may reflect older traditions that still prevail, while in other situations, the Flute may be a more central instrument in musical performance.

Almost all musical traditions in each region of Indonesia have a flute instrument with unique regional characteristics. This uniqueness can be seen in the variety of playing techniques, the way it is presented and the shape of the musical instrument itself. The technique, function, model and musical expression of the flute instrument often only functions as a decorative or sweetening instrument, and its presentation is always in the form of a single instrument. Very few flute instruments are found as ensembles or orchestras, especially in East Java, but it can be believed that flute instruments can be constructed as ensembles or orchestras. For this reason, there is a need for organological and musical innovation in the creation of music based on the flute instrument.

The flute is a great source of inspiration in creating new musical instruments. When trying to develop a new musical instrument, creators can take elements of the flute that they find interesting and combine them with creative ideas. The flute often has roots in specific cultures and traditions. Understanding this cultural background and integrating it into the design of a new musical instrument can hopefully produce something unique and valuable.

rom the description above, the process of experimentation and literacy is the most important thing to go through when creating a new musical instrument. Not all ideas will work, but through careful exploration and creativity, it is believed they can create musical instruments that are interesting, different, and have the potential to inspire musicians and music creators around the world.

METODE PENCIPTAAN

Creating works of art is a series of activity processes in which there are various methods or methods with stages to achieve the desired goal of the work. In the process of creating a work,

there are ways and methods used by each person which are certainly different, and the stages are also different. As stated by Pande Made Sukerta in his book entitled Methods for Composing Musical Works (An Alternative) that in general creating works of art goes through three stages, namely: 1) Composing Content Ideas; (2) Developing Ideas; (3) Determine the target. (Sukerta, 2011a)

In line with what Pande Made Sukerta said, the creator took several further stages to strengthen the content of the work itself with various data and information obtained, as well as wild thinking to obtain rich musical creativity.

PEMBAHASAN HASIL

Creation Object

The creation of this work was carried out to explore the source of ideas for the flute instrument, which will then be realized in the form of creating a new set of musical instruments, a development of the modified flute instrument with the aim of looking for updates to other forms, both in terms of visual form, technique and function. For this reason, there is a need for organological and musical innovation in the creation of music based on the flute instrument.

In the process of creating this instrument, the creator chose PVC pipe material as the main raw material in making the new instrument. PVC pipe is a type of pipe made from Poly Vinyl Chloride (PVC) plastic. This pipe is one of the most common types of plastic pipe used in various applications because it is corrosion resistant, light, resistant to chemical attack, and easy to install. Here is some additional information about PVC pipe types and their uses: (Universal Eco PVC PolyVinyl Chloride., n.d.)

- Lightweight: PVC pipe is much lighter than metal pipe, which makes transportation and installation easier.
- Low Cost: PVC is generally more economical than metal pipe and has a long service life.
- General Applications: PVC pipes are used in various applications, including drinking water and waste water systems, irrigation systems, drainage channels, electrical installations, distillation systems, industrial piping systems, and one of them is used in making musical instruments.

According to Rahayu Supanggah, we can look for or use new tools even in everyday life. These tools are not musical instruments, but can be wood or metal carpentry tools, children's toys or make your own. (Supanggah, 2016)

In general, flutes in Indonesian and other countries are often found made from bamboo, but in creating this instrument, the craftsman chose PVC pipe as the main material for making the instrument. Making flutes using PVC pipes is an option for several basic reasons, namely: PVC is more durable and stable. Most parts of Indonesia have a tropical climate with relatively high humidity levels throughout the year.

In many cases, flute instruments made from bamboo experience a shift in tone caused by humidity. Humidity in Indonesia can reach more than 80% in some places, especially in lowland areas and coastal areas. In this case, using PVC material is considered the right choice rather than using bamboo material. PVC has been proven to be more resistant to weather elements and has good resistance to moisture. This makes PVC flutes more durable and stable in various environmental conditions. Some other reasons may involve the availability of materials, ease of manufacture, and desired sound characteristics. based on the following thoughts and considerations: Comparison between flutes made from PVC pipe and flutes made from bamboo can be discussed in several aspects:

Raw material:

- PVC flutes: PVC flutes are made from PVC pipe, which is a waterproof and durable plastic material.
- Bamboo Flutes: Bamboo flutes are made from natural bamboo stems, which are an organic material that easily degrades if not properly cared for.

Voice:

- PVC Flutes: PVC flutes have a sound that is often sharper and clearer than bamboo flutes. The sound of PVC flutes tends to be more consistent and can be adjusted easily by cutting a length of PVC pipe.
- Bamboo Flute: Bamboo flutes have a more natural and soft sound. The sound can vary depending on the type of bamboo used and the manufacturing technique.

Durability:

- PVC flutes: PVC flutes are water and weather resistant so they are not easily damaged. However, PVC pipes can crack or break if they are hit hard.
- Bamboo Flutes: Bamboo flutes are susceptible to damage due to moisture and pest attacks. Bamboo can also crack or break if not cared for properly.

Flexibility:

- PVC flutes: PVC flutes can be changed in length easily by cutting the PVC pipe. This allows for quick adjustments to the sound.
- Bamboo Flute: Bamboo flutes can also be adjusted by cutting them, but the sound changes may not be as flexible as PVC Flutes.

Supporting materials:

Supporting materials are materials needed to support the main materials as materials for making new instruments. The supporting materials used are PVC pipes, wood, plywood boards, springs, hoses, synthetic leather.

- PVC pipes are used as sound source resonators which are made from waterproof and durable plastic and do not require complicated maintenance like bamboo or wooden flutes which require special care to maintain sound quality and durability.
- Wood is used as the frame for the wind tube, and also functions as the body of the instrument or in musical language it is called rancakan. Plywood boards are used to form wind tubes.
- Springs are used and placed in the wind tube. The basic principle of using springs is that when force or pressure is applied, they will store energy in the form of elastic deformation and then return it when the force is removed or with the aim that after the wind tube is pressed, the tube can expand again. The springs used are spiral springs and rubber.
- The 1/4 inch diameter hose on this instrument is used to channel air from the wind tube into the resonator pipe cavity.
- Butterfly hinges are 1 inch and 3 inch. In making this instrument, a hinge is used as a mechanism that

is used to connect two objects and allows them to move to open and close each other around a certain axis. used as a connector for the wind tube board so that it can provide

- PVC pipe pipes are used for the process of installing or connecting the wind tube to the sound source PVC resonator pipe. Connections: PVC pipes can be connected with various types of PVC fittings, such as solvent-weld, push-fit, or slip-fit, depending on the type of application and project requirements.

Finishing materials are materials used to complete and beautify the appearance of a new instrument. The materials used to finish the new instrument are: red polish and carved ornaments. The choice of polish is not only to beautify the appearance but also to coat and preserve the wood and plywood so that they are suitable for use on new instruments.

Concept of Work

Often we see the flute instrument presented in the form of a single instrument and only functions as a sweetener or decoration. Very few flute instruments are found as ensembles or orchestras. However, it can be believed that the Flute instrument can be constructed as an ensemble or orchestra. For this reason, organological innovation and musical innovation are needed in the creation of new music based on the flute instrument. In reality, the development of science and the development of art are progressing rapidly. Science and technology, especially its products, are increasingly being penetrated and used in all aspects of human life, including in the world of art. It cannot be denied that science and technology are increasingly needed in improving the quality of work and presentation/staging as well as being very helpful in pre- and post-production of works of art.

Media

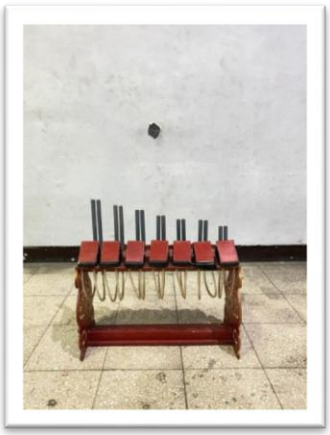
In creating a work, it can be said that whatever form and however small it is, always use mediums and mediums because they serve as a means of expression. Medium has the meaning of equipment, ingredients or materials, while media can be interpreted as an intermediary or messenger from the sender to the recipient of the message

or a means of expression.

Media selection is an important factor in determining a tool as a transfer medium for expressing ideas in musical form. The flute became a source of inspiration in creating new musical instruments. When trying to develop a new musical instrument, creators can take elements from the flute that are considered interesting to explore and combine them with creative ideas.

This strength is at the level of a form of creativity resulting from the development of a flute musical instrument which is generally played by blowing, but in this Wind Gong work the flute will be explored using various techniques. The new instruments consist of: *Sarling (Saron Suling), Demling (Demung Suling), Slenting (Slenthem Suling), Kempling (Kempul Suling), and Angkling (Angklung Suling).*

All of these new instruments are modified to use wind tubes, so that almost all Wind Gong playing techniques are played by pressing with both hands. Some are played in a sitting cross-legged position, and there are also instruments that are played in a standing position. By creating a new instrument as the right medium, it will greatly influence the results of the creative work of the artist in producing the desired work. The following are some of the new Wind Gong media instruments in question.



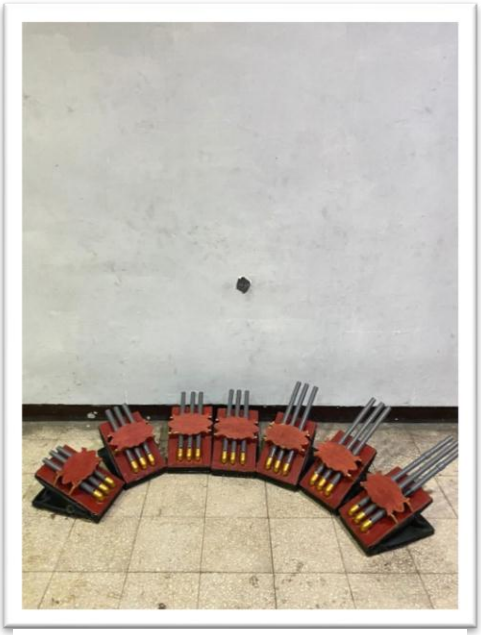
Picture 1 Sarling Instruments
Catur Fredy Wiyogo Chess Source

Sarling (Saron Suling) is an instrument made from PVC pipes and is played by pressing the wind tubes using both hands, while sitting in a cross-legged position. The term "Sarling" itself comes from a combination of the words "Saron" and "Suling". The name "Saron Suling" was given because this instrument can be played like the Saron with several distinctive techniques, such as mbalung, imbal, kintilan, and timpalan.

The Sarling instrument is designed with seven tones, using 14 flute pipes arranged upright on a plank. The seven tones refer to the Javanese gamelan pelog tunings, with the following

tone/barrel interval sequence: 1= ji, 2 = ro, 3 = lu, 4 = pat, 5 = mo, 6 = nem, 7 = pi.

This instrument is unique because it can be played in both low and high pitch areas. The pressure on the wind tube can be adjusted: if played with moderate force, the sound results will be in the low region of 1, 2, 3, 4, 5, 6, 7. On the other hand, if the wind tube is pressed with additional force or jerked, the sound results will reach high octave region. The variety of possible uses of force in pressing the wind tube gives a unique expressive dimension to the Sarling's performance, making it an interesting and flexible instrument for musical expression.



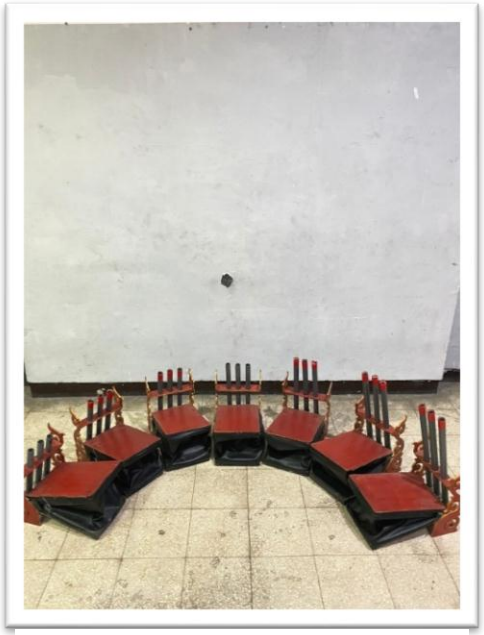
Picture 2 Demling Instruments Catur Fredy Wiyogo Chess Source 2023

Demling (Demung Suling) is an instrument made from PVC pipes and is played by pressing the wind tubes using both hands, while sitting in a cross-legged position. The name "Demling" comes from combining the words "Demung" and "Suling". This instrument is named the Demung Suling because it is capable of producing a sound similar to the Demung, with a size that is larger than the Saron, both in terms of dimensions and sound character. Demling has several distinctive techniques, namely mbalung and imbal.

Demling's instrument was designed with seven notes, using 21 flute pipes arranged at an angle on each wind tube. The seven tones refer to the Javanese gamelan pelog tunings, with the following tone/barrel interval sequence: 1= ji, 2 = ro, 3 = lu, 4 = pat, 5 = mo, 6 = nem, 7 = pi.

This instrument is unique because it can be played in both low and high pitch areas. The pressure on the wind tube can be adjusted: if played with moderate force, the sound results will be in the low region of 1, 2, 3, 4, 5, 6, 7. On the other hand, if the wind tube is pressed with additional force or jerked, the sound results will reach high octave region. As such, the Demling offers

striking expressive variety and is an interesting instrument for musical exploration.



Picture 3 Slenting Instruments Catur Fredy Wiyogo Chess Source 2023

Slenting (Slenthem Suling) is an instrument made from PVC pipes, played by pressing the wind tubes using both hands, and sitting in a cross-legged position. The name "Slenting" comes from a combination of the words "Slenthem" and "Suling". This instrument is called the Slenthem Suling because it is capable of producing a sound similar to the Slenthem, with a size that is larger than the Saron and Demung, both in terms of dimensions and sound character. Slenting has several distinctive techniques, such as *mbalung and imbal.*

The Slenting instrument is designed with seven notes, using 21 flute pipes arranged upright at a slight angle on each wind tube. The seven tones refer to the Javanese gamelan pelog tunings, with the following tone/barrel interval sequence: 1= ji, 2 = ro, 3 = lu, 4 = pat, 5 = mo, 6 = nem, 7 = pi.

This instrument is unique because it can be played in both low and high pitch areas. The pressure on the wind tube can be adjusted: if played with moderate force, the sound results will be in the low region of 1, 2, 3, 4, 5, 6, 7. On the other hand, if the wind tube is pressed with additional force or jerked, the sound results will reach high octave region. Thus, Slenting offers striking expressive variety and is an interesting instrument for musical exploration.

Picture 3 Mpuling Instruments
Catur Fredy Wiyogo Chess Source 2023

Mpuling (Kempul Suling) is an instrument made from PVC pipes, played by pulling down the lever of the wind tube using both hands, in a standing position. The name "Mpuling" comes from combining the words "Kempul" and "Suling". This instrument is called the Kempul Suling because it is capable of producing a sound similar to the Kempul, with a size that is larger than the Saron, Demung, and Slenthem, both in terms of dimensions and sound character. Mpuling only has the mbalung technique, but it has its own uniqueness that differentiates it from previous instruments, such as Sarling, Demling, and Slenting.

The Mpuling instrument is designed with seven tones, using 7 flute pipes arranged upright on a plank, with a long wind tube. The seven tones refer to the Javanese gamelan pelog tunings, with the following tone/barrel interval sequence: 1= ji, 2 = ro, 3 = lu, 4 = pat, 5 = mo, 6 = nem, 7 = pi.

This instrument is unique because it can be played in both low and high pitch areas. The pressure on the wind tube can be adjusted: if played at medium power, the sound output will be in the low region. On the other hand, if the wind tube is pressed with additional force or jerked, the resulting sound will reach the high octave region. Mpuling with its characteristic of being able to sound both sides, soft and loud, provides a unique and interesting musical dimension for artistic exploration.

Picture 2 Angkling Instruments
Catur Fredy Wiyogo Chess Source 2023

Angkling (Angklung Suling) is an instrument made from PVC pipes, played by pressing the wind tubes using both hands, and can be played either in a sitting cross-legged or standing position. This instrument has seven notes, with a total of 14 flute pipes arranged parallel to each wind tube. The seven tones refer to the Javanese gamelan pelog tunings, with the following tone/barrel interval sequence: 1= ji, 2 = ro, 3 = lu, 4 = pat, 5 = mo, 6 = nem, 7 = pi.

Instrumen Angkling (Angklung Suling) memiliki keunikan yang mencirikan seluruh karya, dapat dimainkan pada wilayah nada rendah dan tinggi. Tekanan pada tabung angin dapat disesuaikan: jika dimainkan dengan kekuatan sedang, hasil suaranya akan berada pada wilayah rendah 1, 2, 3, 4, 5, 6, 7. Sebaliknya, jika tabung angin ditekan dengan tambahan tenaga atau dihentak, hasil suaranya akan mencapai wilayah oktav tinggi. Dengan karakteristiknya yang dapat beradaptasi dengan variasi tekanan, Angkling memberikan fleksibilitas artistik yang memungkinkan pengkarya untuk menciptakan karya musik yang beragam dan unik.

The Angkling instrument (Angklung Suling) has a unique characteristic that characterizes the entire work, it can be played in low and high pitch areas. The pressure on the wind tube can be adjusted: if played with moderate force, the sound results will be in the low region of 1, 2, 3, 4, 5, 6, 7. On the other hand, if the wind tube is pressed with additional force or jerked, the sound results will reach high octave region. With its characteristics of being able to adapt to variations in pressure, Angkling provides artistic flexibility that allows artists to create diverse and unique musical works.

The choice of PVC pipe material as the medium for making all instruments also shows continuity in the use of materials, providing visual and acoustic consistency in all musical ensembles created by the composer. Thus, this choice creates artistic cohesion that illustrates the precision and attention to detail in the creation of a holistic piece of music.

CONCLUSION

Wind Gong "Organological Innovation and Musical Innovation in the Creation of New Music Based on Flute Instruments" is an innovative transformation which is the

embodiment of the transformation concept of changing a new form and the aim of this creation is to find a new form both in terms of technique, function, character and expression. musical. This work has strong significance for the development of musical instruments from an organological perspective, especially the flute. From the results of this study, the creators have confidence that this new set of instruments has its own strengths. This strength is at the level of a form of creativity resulting from the development of a flute musical instrument which is generally played by blowing, however, in this work the flute is played with another technique. It is hoped that the creators can add appreciation for creative and innovative art in efforts to preserve and develop the nation's arts and culture with personality, so that the development of traditional arts will be able to keep pace with developments in the modern technological era which of course have a lot of influence on our cultures.

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