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The ensemble of Keteng-Keteng Telu Ngawan

Adina S Sembiring[1], Uyuni Widiastuti[2], Purbatua Manurung[3], Hendy Obed Sembiring[4], Ewin Johan Sembiring[5]
[1,2]*Faculty of Langage and Art, Universitas Negeri Medan, Indonesia*
[3]*Universitas Islam Negeri Sumatera Utara, Indonesai*
[4,5]*North Sumatra Theological College, Indonesia*
adina_matheny@yahoo.com

Abstract

The creation of three-segment keteng-keteng (telu ngawan) with high, midle, and low characters, is carried out through the Soprano, Alto, tenor, and Bass frequency approaches, so that the keteng-keteng telu ngawan instrument becomes a "new" musical ensemble called the keteng-keteng Ensemble. Keteng-keteng Telu Ngawan. The frequency of keteng-keteng telungawan with soprano character is on a scale of 261,626-1046.50 Hz, the frequency of keteng-keteng telungawan with alto character is on a scale of 174,614-698,456 Hz, the frequency of keteng-keteng telungawan with tenor character is on a scale of 130,813-523,251, and the frequency of keteng-keteng telungawan bass character is on a scale of 82.4069-329.628. The determination of the tuning of the four keteng-keteng telungawan is done by recording the sound of the four keteng-keteng telungawan then transferring the sound to a string instrument category and entering it into several music tuner applications such as Da Tuner, Guitar Tuna or other similar applications. The results of the music tuner will be entered into the website so that it will automatically know where the frequency of the sound for each keteng-keteng telu ngawan is.

Keywords
ensemble; keteng-keteng; telu ngawan

I. Introduction

The keteng-keteng *telu ngawan* (three segments) are different from the Keteng-keteng used so far, which only use one bamboo segment, but in the research that has been carried out they have developed it into three bamboo segments. In the previous research on the keteng-keteng of three bamboo segments, the researchers had started tuning the keteng-keteng, but were limited to finding the character of the sound. In addition, the use of an equalizer in the drums produces a sound that can be adjusted according to the color of the sound on the *bass middle* and *treble*, Sembiring Adina (2020).

The development of keteng-keteng from musical instruments that function as rhythm (rhythmic) into melodic (pitched) instruments is a challenge for researchers to do, so that the keteng-keteng that will be produced is not only an accompaniment but becomes a major part in a musical composition. In this study, the researchers tried to develop the keteng-keteng *telu ngawan* into four characters, namely keteng-keteng soprano, alto, tenor and bass.

An ensemble is a study of music that is carried out together using one type of musical instrument or various types of musical instruments. Musical ensemble is a group of musical activities that are played together using certain musical instruments. The ensemble has several forms including *duet*, *triet*, *quartet*, *quintet*. Similar ensembles are also used for traditional music. The difference in musical ensembles is only in the

composition that plays it, such as playing high, low sounds, melodies, accompaniment and others.

The development of four keteng-keteng with categories of soprano, alto, tenor and bass is certainly a very new thing in the realm of traditional arts in Karo and in the archipelago, especially for bamboo percussion instruments so that the keteng-keteng *telu ngawan* instrument can sound like a "chord". Achieving this is an important step that researchers must do, namely tuning the instrument to find the tone of the keteng-keteng. The tuning must also be maintainable for multiple compositions so that the tuning can persist across multiple compositions.

In fact, the keteng-keteng *telu ngawan* (three segments) are percussion instruments where there has never been any research or musical work that has made discoveries related to sound tuning in keteng-keteng. Therefore, to support this research, a method that has been used by Sri Hastanto was used which was written in his book The Study of Nusantara Music with the focus of the topic being system tuning. This method will lead to finding a new tuning system in the keteng-keteng instrument that can play percussion and melody in one instrument.

The development of the *Telu Ngawan* keteng-keteng certainly requires collaboration with partners, so that it can be carried out properly, in this case the researcher will collaborate with the Mejuah-juah Gallery located in Pancur Batu. The Mejuah-juah Gallery has been producing keteng commonly used for Karo music ensembles for a long time, but the keteng that will be produced in this research has never been produced. Therefore, researchers and partners will continue to coordinate in developing keteng, which was originally in the form of percussion, but what has been developed is keteng that has the character of soprano, alto, tenor and bass.

Efforts in this research are focused on the keteng-keteng *telu ngawan* ensemble, using the concept of a tuning system that will be produced with partners and can be applied by stakeholders, especially people who are involved in the arts, schools and others.

In general, the ensemble has the meaning playing music together using certain musical instruments and also playing songs with simple arrangements. according toBanoe (2003) ensemble means together, in a group. Ensemble music is a form of music that is presented through several musical instruments played by a group of players

According to Tambayong (1992) the ensemble can be divided into three, namely:

a. Based on the presentation

Based on the presentation, the music of this ensemble is grouped as follows:

1. Similar ensemble music
   Similar ensemble music is a form of presenting ensemble music that uses similar musical instruments, for example: recorder ensemble, guitar ensemble, violin ensemble, and so on.
2. Mixed ensemble music
   Mixed ensemble music is a form of presenting ensemble music using several types of musical instruments or also various types of musical instruments, for example: piano, guitar, recorder, triangle, tambourine and also cymbals played in one musical composition.

b. Based on the role and function

Based on the role and function of the musical instruments used, this musical ensemble is grouped into three types, including:

1. **Melodic ensemble,** is a musical instrument that is used and functions to play a series of tones which are the melody of a song, for example: piano, pianika, violin, trumpet, tambourine, recorder and harmonica.
2. Rhythmic ensemble, is a musical instrument that is used and serves to regulate the rhythm of a song, for example: from this rhythmic ensemble are tambourines, drum sets, triangles, gongs and drums.
3. **Harmonious ensemble,** is a musical instrument that serves to play the melody of the song and also set the rhythm of the song.

c. Based on the group

Based on the group of musical instruments, this ensemble is divided into two types, namely from the aspect of the sound source, how to play and also its role in ensemble music.

1. Sound source
   a) Aerophone, is a musical instrument whose sound source comes from the vibrations of the air, for example: flute, trumpet, clarinet, saxophone, and others.
   b) Membranophone, is a musical instrument that gets a sound source from plastic, for example: drums, tambourines and drums and others.
   c) A chordophone is a musical instrument whose sound source is obtained from strings or ropes, for example: guitar, harp and violin, and others.
   d) Idiophone, is a musical instrument whose sound source lies in the sound of the instrument itself when played, for example: angklung, gong, and others.
   e) Electrophone, is a musical instrument whose sound is sourced from an electric voltage, for example electric organs and also electric guitars and others.
2. How to play a musical instrument
   a) **Beaten**, examples of these beaten musical instruments such as drums, bongo, drums and saron.
   b) **Picked, c**examples of plucked musical instruments such as guitar and harp.
   c) **Blown**, examples of these blown musical instruments such as the trumpet, flute and clarinet.
   d) **Shake/vibrate**, an example of a musical instrument that is shaken/vibrated is like the angklung.
   e) **Swiped**, examples of these stringed musical instruments such as the violin, fiddle and cello.

Music cannot be separated from the life of the Karo tribe, both in daily life and in traditional and cultural practices. Tanah Karo, which is a fertile highland area and has two active volcanoes, so some of them work as farmers. In practice, the Karo tribe incorporates many elements of the art of music as part of agrarian life itself. Keteng-keteng is a traditional percussion instrument of the Karo tribe from North Sumatra which is made from bamboo. Keteng-keteng is about half a meter long and has strings made of bamboo itself. The keteng-keteng bat is also made of bamboo pieces consisting of two pieces.

How to play keteng-keteng is very simple, like hitting a drum instrument. Judging from its function, keteng-keteng used to be often played in the gendang telu sedalenan ensemble as a medium in the erpangir kulau ceremony by the karo people. Lately this instrument is also often played in various performances with the aim of just being for entertainment.

II. Research Methods

This study uses a Research and Development approach or research development. The research data collection was obtained from primary data and secondary data, Sugiono, (2018).

Data collection techniques in this study are:

a. Observation is carried out to confirm the data that has been collected by observing directly.
b. Interviews are used for communication with related parties such as the makers of the keteng-keteng in the mejuah-juah gallery.
c. Documentation is carried out to support the research process, where not everything can be known. Therefore, it can be done by taking notes, transcripts, books, recordings and so on

Data analysis technique is done by categorizing and analyzing primary data and secondary data through discussion with experts. Next, formulate the concept of creating keteng-keteng *telu ngawan* which have soprano, alto, tenor and bass characters.

III. Results and Discussion

3.1 Creation concept *keteng-keteng Telu Ngawan* which has a voice character soprano, alto, tenor and bass

Music is one of the products that can never be separated from the passage of a culture so that music will continue to develop according to the needs and challenges of the life of the people who own it. One example is the digital world, where technological tools are created to support traditional musical instruments and their arts so that they can be enjoyed by all global people. According to Rahayu Supanggah in an interview related to traditional arts, traditional arts will survive if their function is still needed by the owner community, so that traditional arts will change without being forced to follow the needs and challenges of the art owners themselves.

It is the same with the keteng-keteng musical instruments from the Karo Batak arts. In previous research, researchers developed a keteng-keteng musical instrument which originally was one segment into three segments (telu ngawan) and added an equalizer to get the characters to be achieved, namely high, midle, and low characters. Of course, this development has gone through a process of discussion with several local artists so that it "does not" violate the context of traditional arts, so it was agreed that the development was only for the sake of performing arts and education.

After creating *three-segment keteng-keteng* (telu ngawan) with high, midle, and low characters, in this study the researcher intends to develop a more complex *keteng-keteng* musical instrument with several keteng-keteng instruments and through a Soprano, Alto, tenor frequency approach. , and Bass so that the Keteng-Keteng Telu Ngawan instruments will be able to be used as a "new" musical ensemble called the Keteng-Keteng Telu Ngawan Ensemble.

An ensemble is a group of musical players or several instruments played together. So what is meant by the *Keteng-keteng Telu Ngawan* ensemble is that the four *Keteng-keteng Telu Ngawan* instruments will be played simultaneously by several musicians. In the realm of percussion, the *Keteng-keteng Telu Ngawan* ensemble will be the only percussion instrument tuned with soprano, alto, tenor, and bass frequency approaches. The creation of the *Keteng-keteng Telu Ngawan* ensemble is expected to add to the richness of music in the

realm of performing arts, especially in the Karo Batak ethnic arts as well as in the realm of performing arts in the archipelago.

3.2 Brief Description and Types of the Telu Ngawan Keteng-keteng ensemble

The *Keteng-keteng Telu Ngawan* ensemble can be categorized into the idiophone family where the sound produced comes from the instrument itself. The musical instrument of *Keteng-keteng Telu Ngawan* is made from bamboo betung (reed belin) which is first soaked in running water (river) for approximately 2 weeks and then dried before being used as an instrument of *keteng-keteng telu ngawan.*

The *Keteng-keteng Telu Ngawan* ensemble is a percussion musical group that is divided into four voice characters, namely soprano, alto, tenor and bass. What we mean by these four characters is that each *Keteng-keteng Telu Ngawan* will be tuned according to the soprano, alto, tenor, and bass frequencies. Where the four frequencies are for *keteng-keteng Telu Ngawan* with soprano character on a scale of 261,626-1046.50 Hz, Frequency for *Keteng-Keteng Telu Ngawan* with alto character on a scale of 174,614-698,456 Hz, Frequency for *Keteng-Keteng Telu Ngawan* with tenor character on a scale of 130,813-523,251, and the frequency of *Keteng-Keteng Telu Ngawan* with bass character is on a scale of 82.4069-329.628.

Here are the four types of the *Keteng-keteng Telu Ngawan* ensemble:

1) *Telu Ngawan Keteng* soprano

Figure 1. *Telu Ngawan Keteng soprano character with a diameter of 10cm*

2) *Telu Ngawan Keteng* Alto

Figure 2. *Telu Ngawan Keteng alto character with diameter 13cm*

3) *Telu Ngawan Keteng* tenor

Figure 3. *Telu Ngawan Keteng tenor character with diameter 14cm*

4) *Telu Ngawan Keteng* Bass

Figure 4. *Telu Ngawan Keteng bass character with diameter 16cm*

5) The ensemble of *keteng-keteng telu ngawan*

Figure 5. *Ensemble Keteng-keteng telu ngawan*

3.2 The Method of Creating an Ensemble of the *Keteng-keteng Telu Ngawan*

To get 4 different characters and get into the Soprano, Alto, Tenor, and Bass frequencies, the creation of the four Keteng-Keteng is divided into three stages, namely determining the diameter of the *Keteng-keteng Telu Ngawan*, determining the thickness of the sound producer and the size of the Keteng-keteng sound hole. *Keteng-keteng Telu Ngawan*, and the most important process is tuning the system to get the soprano, alto, tenor and bass frequencies. The process of creating the *Keteng-keteng Telu Ngawan* ensemble took approximately 40 days, starting from selecting really old bamboo, cutting the bamboo, drying the bamboo, to the process of making the *Keteng-keteng Telu Ngawan* ensemble.

The following will describe in detail the method in creating the musical instrument of the *Keteng-keteng Telu Ngawan* ensemble after the process of soaking and drying bamboo that has been selected in diameter to be used as a musical ensemble of *Keteng-keteng telu Ngawan* with the approach of soprano, alto, tenor and bass frequency characters.

a. Diameter of the *Keteng-keteng Telu Ngawan* ensemble

The first step in determining the sound result of the Keteng-keteng Telu Ngawan ensemble is to determine the diameter of each Keteng-keteng Telu Ngawan. In simple terms, it is certain that each size of the bamboo diameter will produce a different sound frequency. The four diameters are as follows:

1) *Keteng-keteng Telu Ngawan* soprano character with a diameter of 10 cm

Figure 6. *Keteng-keteng Telu Ngawan soprano character*

2) *Keteng-keteng telu ngawan* alto character with a diameter of 13 cm

Figure 7. *Keteng-keteng Telu Ngawan alto character*

3) *Keteng-keteng Telu Ngawan* tenor character with a diameter of 14 cm

Figure 8. *Keteng-keteng Telu Ngawan alto character*

4) *Keteng-keteng Telu Ngawan* bass character with a diameter of 16 cm

Figure 9. *The Diameter of the Keteng-keteng Telu Ngawan alto character*

b. Measuring the sound-producing strings and holes of the *Keteng-keteng Telu Ngawan* ensemble

After determining the diameters of the four Telu Ngawan keteng, the next step is to measure the thickness of the sound-producing strings and the sound holes of the Telu Ngawan Keteng-keteng ensemble. Keteng-keteng Telu Ngawan with soprano character will have the thinnest dialys and the smallest vocal apertures, while the Keteng-keteng Telu Ngawan with alto, tenor, and bass characters will have thicker dialys and progressively larger vocal apertures to produce alto, tenor, and bass characters. .

Here is a picture of the strings and the sound-producing holes of the four types of Keteng-keteng Telu Ngawan:

1) Snare in *Keteng-keteng Telu Ngawan*

Figure 10. *Sound-producing snare*

2) Loud sound hole

Figure 11. *Loud sound hole*

3) Tuning

After determining the diameter and size of the strings and the sound-producing holes of the *Keteng-keteng Telu Ngawan*, the next step is tuning. Tuning is a method or system used to get the soprano, alto, tenor, and bass frequencies.

To determine the tuning of the four *Keteng-keteng Telu Ngawan* using the Sri Hastanto method, which records the sound of the four *Keteng-keteng Telu Ngawan* then transfers the sound to the instrument category strings and puts it into several music tuner applications such as Da Tuner, Guitar Tuna or other similar applications. In the next stage, the results from the music tuner will be entered into the website so that it will automatically know where the sound frequency of each *Keteng-keteng Telu Ngawan* is. In this process, it is possible that there will still be changes related to the thickness of the sound-producing strings and the sound holes of the *Keteng-keteng Telu Ngawan*, if not until the frequency we want to achieve. It should be reminded that in this tuning process,

3.3 Organology of the *Keteng-keteng Telu Ngawan* ensemble

The organology of the *keteng-keteng* musical instrument and the *Keteng-keteng Telu Ngawan* is basically the same, what distinguishes the two types of keteng-keteng is, in the keteng-keteng musical instrument it only requires one bamboo segment, but in the Telu Ngawan Keteng-keteng it requires three bamboo segments. Likewise in the *Keteng-keteng Telu Ngawan* ensemble, what distinguishes the four *Keteng-keteng* is the diameter and sound-producing snare and sound hole of the *Keteng-keteng Telu Ngawan*.

The following will explain in detail the organology of the Telu Ngawan Keteng-*keteng* ensemble.

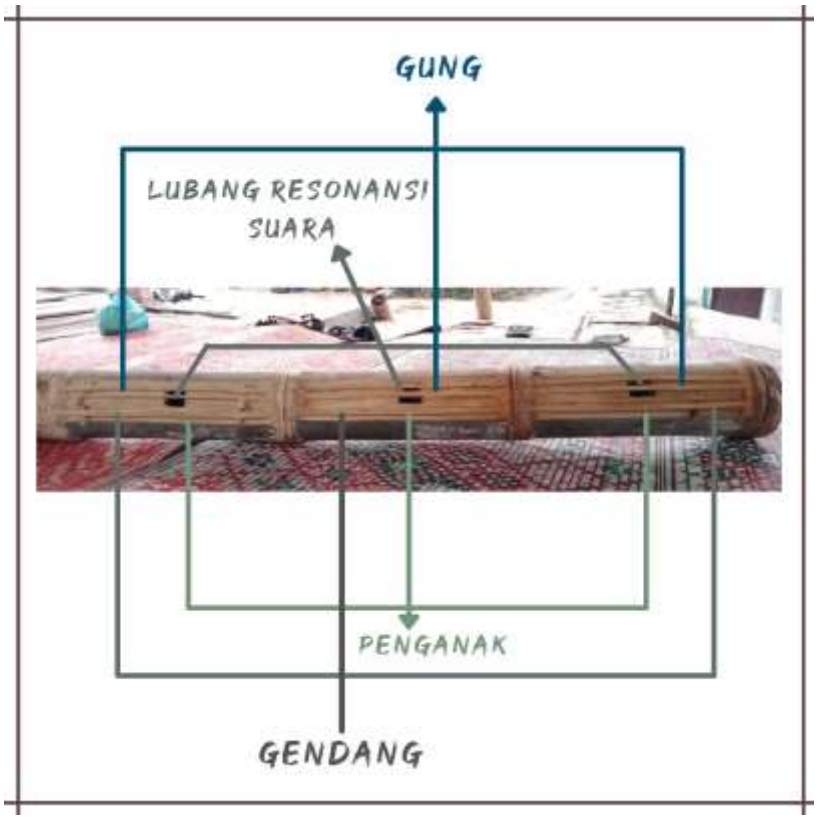


Figure 12. *Organologythe Keteng-keteng Telu Ngawan ensemble*

3.4 Materials and Process for Making the *Keteng-keteng Telu Ngawan* Ensemble

To make the *Keteng-keteng Telu Ngawan* ensemble, there will be several stages, namely selecting bamboo, soaking the bamboo, drying the bamboo, and making the *Keteng-keteng Telu Ngawan* with four characters, namely *Keteng-keteng Telu Ngawan with soprano, alto, tenor, and bass characters.*

a. Choose Bamboo

The basic ingredients for making *Keteng-keteng Telu Ngawan* musical instruments are bamboo betung (reed belin) which are old enough to produce a good sound, you also have to look for bamboo betung which is straight enough to make it easier to make Keteng-keteng Telu Ngawan musical instruments.

The following are the types of bamboo used for the four types of *Keteng-keteng Telu Ngawan*:

Figure13. *Reed Belin as the basic material for the Keteng-Keteng Telu Ngawan*

b. Soaking the Bamboo

The next process is to soak the bamboo in running water or in a prepared container. This process is quite important for the durability of the bamboo and the sound that will be produced by the Keteng-keteng Telu Ngawan instruments. This process takes about two weeks.

Figure 14. *Soaking the bamboo material from Keteng-keteng Telu Ngawan*

c. Drying Process

The next process is drying the bamboo. This process is also quite important because it will greatly affect the sound that will be produced. The process of making Telu Ngawan Keteng-keteng cannot be carried out if the bamboo is not completely dry.

Figure 15. *Bamboo drying process*

d. Making *Keteng-keteng Telu Ngawan*

After the bamboo material of the *keteng-keteng* has dried, the next step is to start cutting and sculpting the bamboo to be used as an ensemble of *Keteng-keteng Telu Ngawan*.

Figure 16. *Making a sound hole for the Keteng-keteng Telu Ngawan*

Figure 17. *Making Keteng-keteng Telu Ngawan sound-producing snare*

In addition to the above materials, some of the tools used in making the Keteng-keteng Telu Ngawan instruments are as follows:

1) Chainsaw

Figure 18. *The saw is used to cut bamboo*

2) Machete (sekin)

Figure 19. *A machete is used to cut bamboo in the forest*

3) Knife (cayenne)

Figure 20. *A knife (cayenne) is used to pierce the snare Keteng-keteng*

4) Chisel

Figure 21. Chisels are used to make sound holes in the *Keteng-keteng*

3.5 Game Techniques for the *Keteng-keteng Telu Ngawan* Ensemble

To play the ensemble *Telu Ngawan Keteng*(Three Bamboo Segments) are required to understand the character of the game keteng-keteng. In previous research, we have explained that the keteng is a combination of three instruments, namely the gung, penganak, and drum.

The three instruments have different characters, but to produce gung and child sounds, it is enough just to use ordinary strokes. To produce the sound of the drum has two different techniques. The technique for drumming should result in a tang and check character. For pliers, the method of hitting it must be slightly rocked, while to produce a check, it is hit and pressed at the same time.

The following describes the drawings for the pliers technique and the check technique:

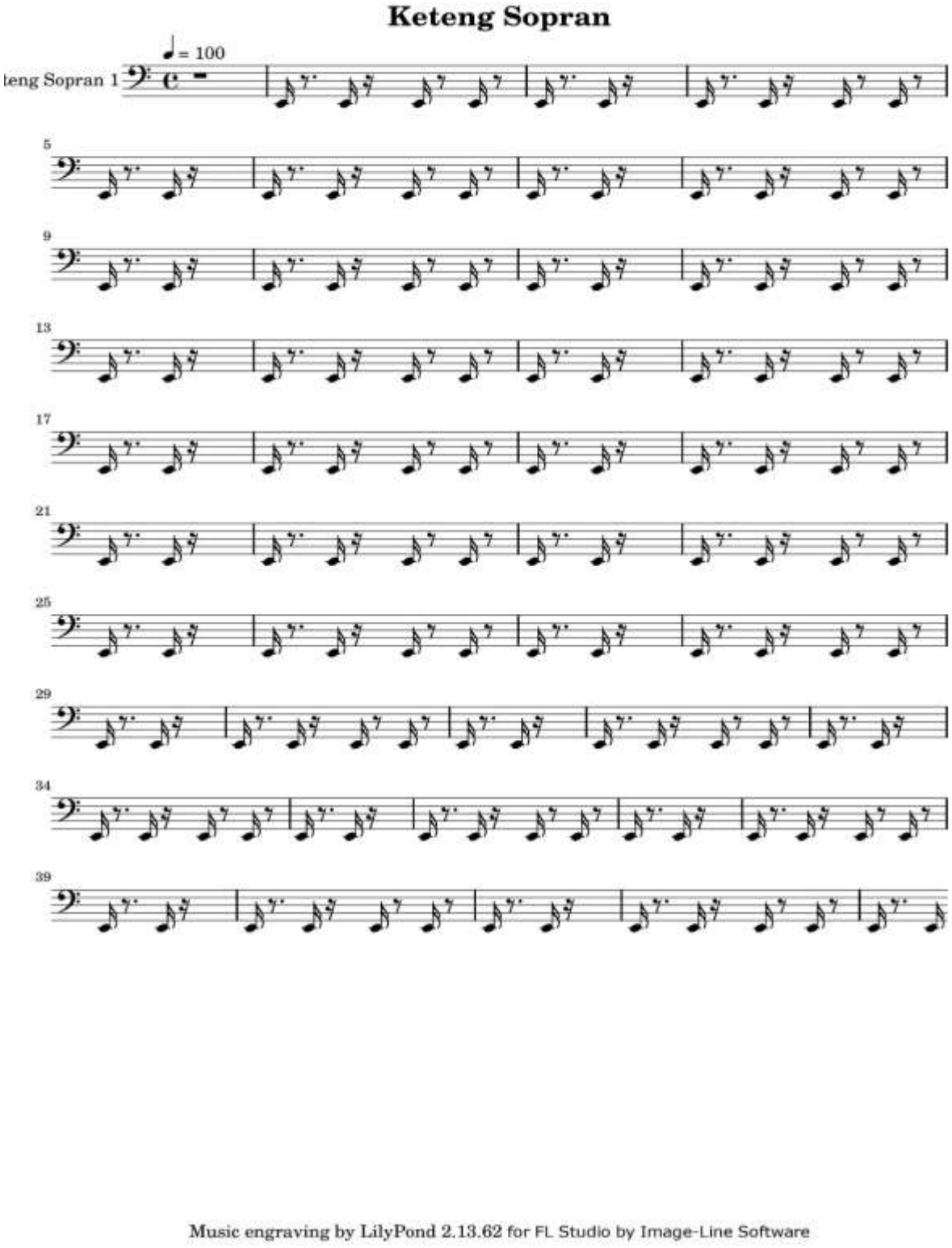
Figure 22. *The pliers technique is hit as usual*

Figure 23. *Check technique by pressing snare Keteng-keteng Telu Ngawan*

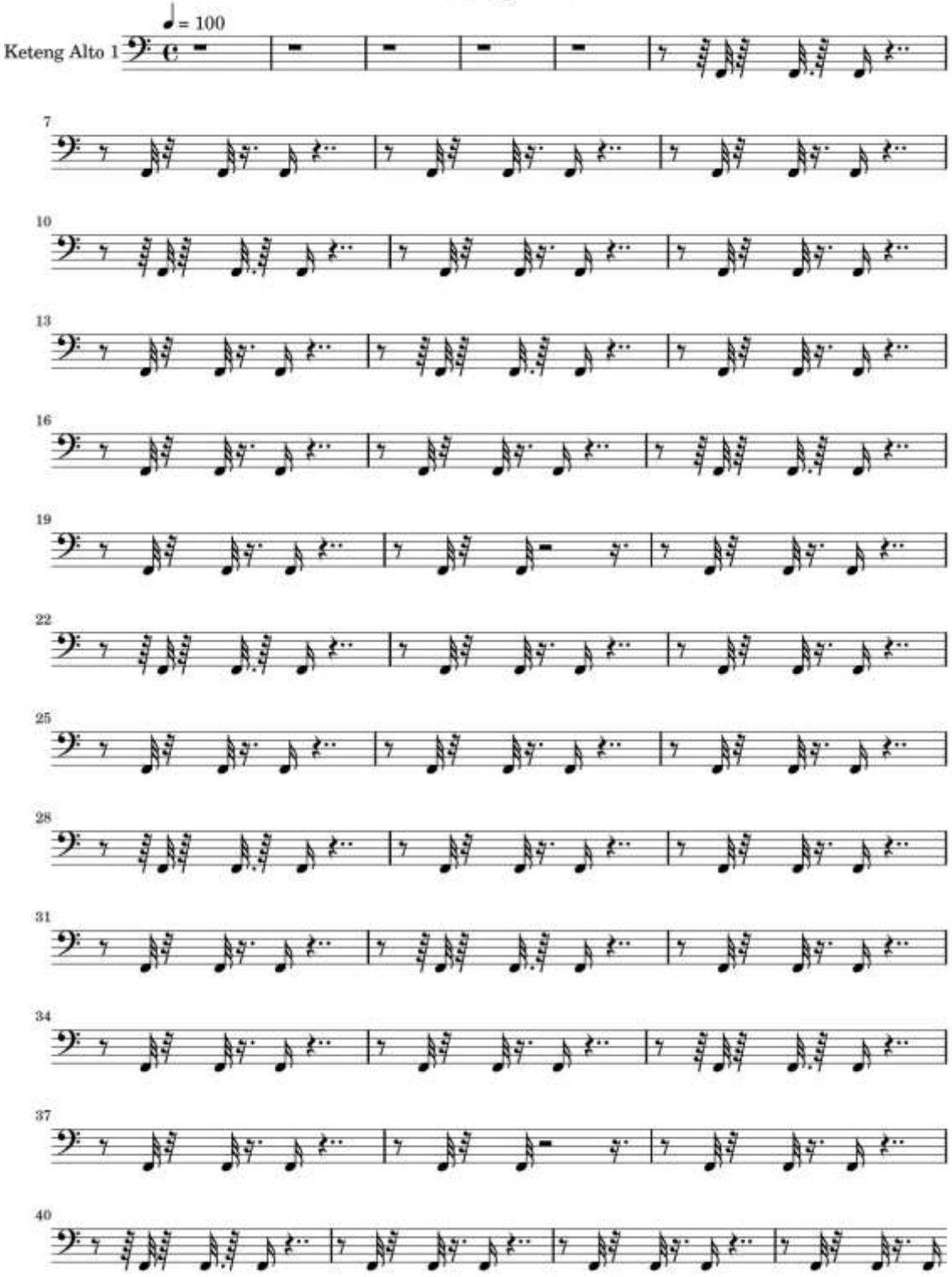
Figure 24. *The Keteng-Keteng Telu Ngawan Ensemble*

3.6 Ensemble Form *Keteng-Keteng Telu Ngawan* on Musical Composition

The Composition of the *Keteng-Keteng Telu Ngawan* Ensemble



Keteng Alto



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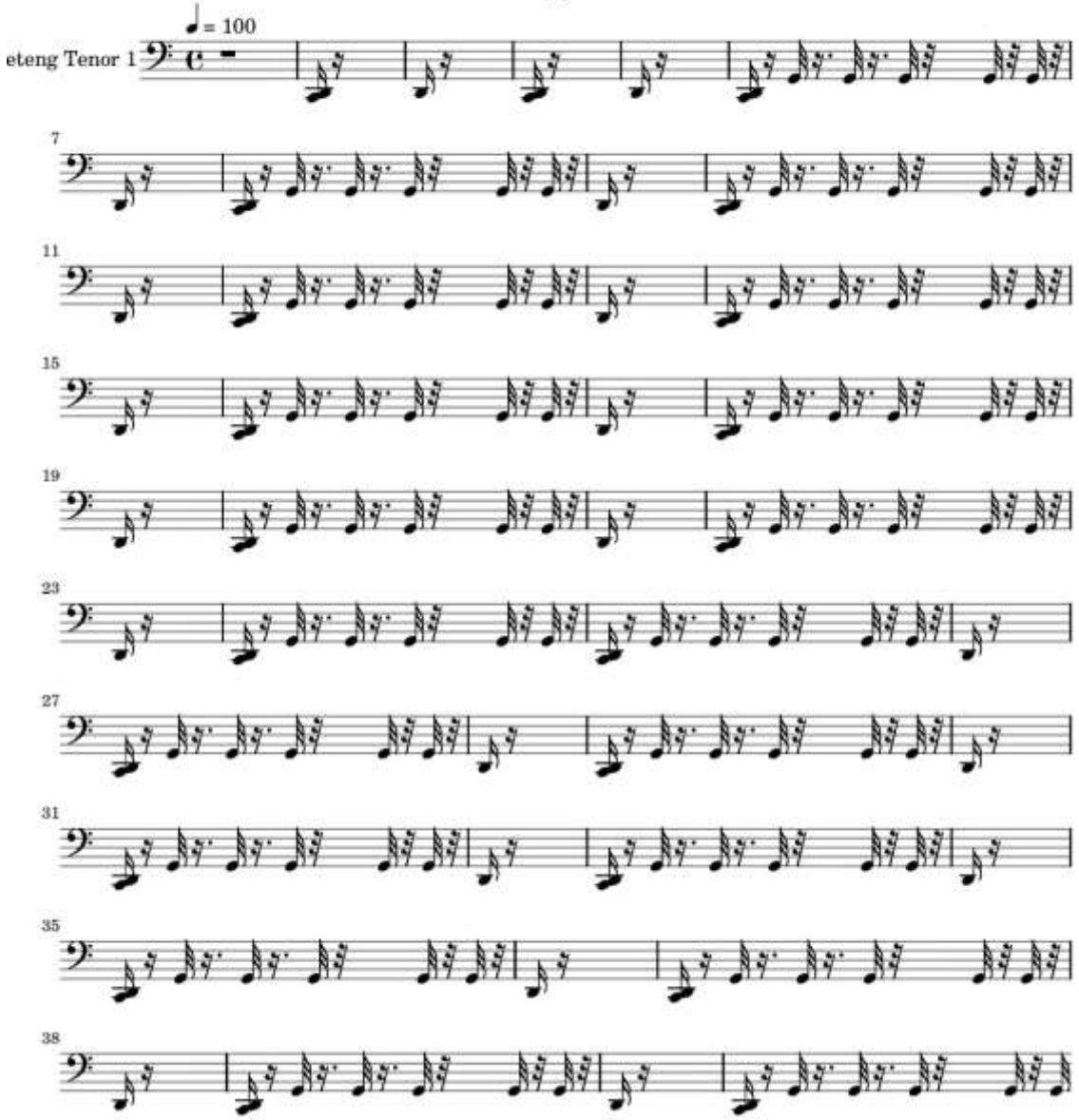
Keteng Tenor



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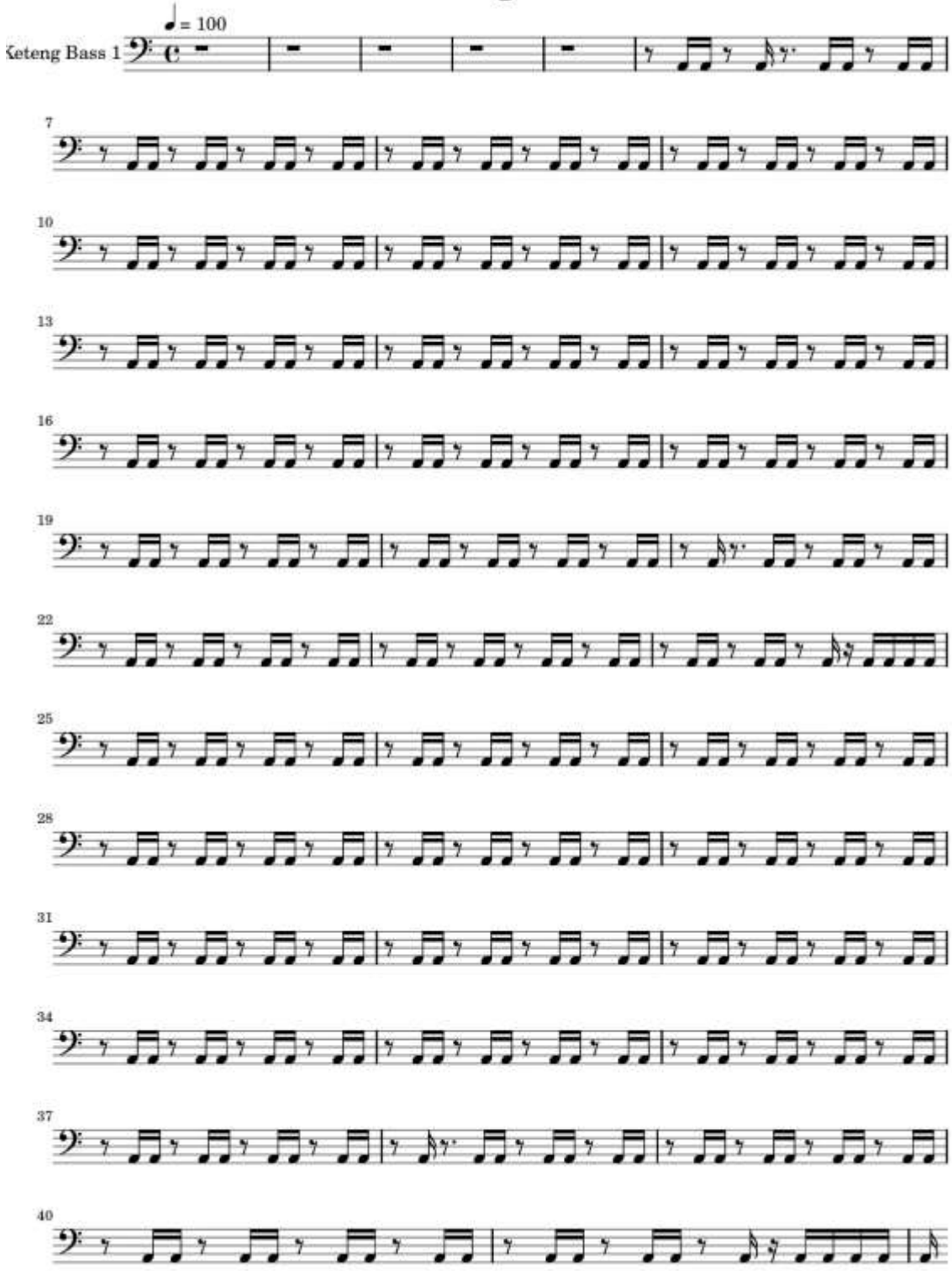
Keteng Bass



Music engraving by LilyPond 2.13.62 for FL Studio by Image-Line Software

IV. Conclusion

The creation of three-segment *keteng-keteng* (*telu ngawan*) with high, midle, and low characters, is carried out through the Soprano, Alto, tenor, and Bass frequency approaches, so that the *Keteng-keteng Telu Ngawan* instrument becomes a "new" musical ensemble called the Ensemble *Keteng-keteng Telu Ngawan*. The frequency of the *Keteng-keteng Telu Ngawan* with soprano character is on a scale of 261,626-1046.50 Hz, the frequency of the *Keteng-keteng Telu Ngawan* with alto character is on the 174,614-698,456 Hz scale, the frequency of the *Keteng-keteng Telu Ngawan* with tenor characters is on the 130,813-523,251 scale, and the frequency of Keteng-Telu Ngawan with tenor characters is on a scale of 130,813-523,251. *Keteng-keteng Telu Ngawan* bass character is on a scale of 82.4069-329.628. The determination of the tuning of the four *Telu Ngawan Keteng-keteng* is done by recording the sound of the four *Telu Ngawan Keteng-keteng* then transferring the sound to a string instrument category and entering it into several music tuner applications such as *Da Tuner, Guitar Tuna* or other similar applications. The results of the music tuner will be entered into the website so that it will automatically know where the sound frequency of each *Keteng-keteng Telu Ngawan* is.

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