

Sundanese Traditional Tone Sensitivity-Based Audiation Model of *Salendro* Musical Scale

✉Diah Latifah

Faculty of Arts Education and Design, Universitas Pendidikan Indonesia,
Jalan Setiabudhi No. 229, Isola, Sukasari, Bandung, Jawa Barat 40154

✉E-mail: diahlatifah@upi.edu

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Abstract

This study is aiming at finding out the audiation model of *salendro* musical scale and teaching it to the non-Sundanese learners. Treatment done to the learners whose hearing sensitivity has not been familiar with *salendro* tone during the audiation practice. A method implemented in the study was grounded theory. It was used to explore initial audiation theory from Edwin E. Gordon in Syntax Learning Sequence in Music that was adjusted with learning stages of *salendro* tone. This study resulted in an audiation model of *salendro* tone to sharpen hearing sensitivity of non-Sundanese learners who had not been familiar with *salendro* tone.

Keywords: audiation learning stage; *salendro* learning stage; *salendro* model learning stage; *salendro* tone mastery

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INTRODUCTION

The learners were equipped with audiation of *salendro* tone since we found that some non-Sundanese or Javanese, and Balinese students have not known *salendro* tone and never listened to it. Six students or learners whom we equipped with *salendro* tone were from Papua, Nusa Tenggara, Maluku, South Sumatra and also North Sumatra. This problem was handled by providing a sense or feeling of *salendro* through the learning sequences based on the sensitivity of tone or one of Sundanese tone languages. Those who have never listened to the *salendro* tone had difficulty in following the learning process of understanding tone since the sensitivity of their hearing is unfamiliar with the sound of *salendro* tone. Why learning sequence skill of audiation activities was carried out? It

is believed that the learning sequences of audiation have a power to familiarize the sensitivity of their hearing with *salendro* tone, since audiation is defined as dictionary of words that creates sentences of music, chord, modulation, and various events in grammatical music, which is conducted through the sequences of learning syntax learning sequence. Gordon (2011, p. 10) in Latifah et al (2016, p. 10) reveals "Mind is basic dictionary of hearing in language, that creates words to explain dictionary of hearing which is audiation, the listening skill, interpret the music, when the sound is not physically heard or unreal".

Edwin E Gordon's Audiation Grand Theory is one of the sequences of learning patterns which is used to imply the language of sound in this case the tone or in western tradition music, called the tonality. Woodford (1996) states "There can be

no denying that Edwin E. Gordon has made important contributions to the field of music education in the areas of music aptitude testing and music learning theory". From this point of view, Gordon's theory contributes significantly to the field of music education in the areas of musical aptitude testing and music learning theory. Audiation is one grand theory dealing with implying, strengthening, familiarizing language of sounds, which are tonal sense, sense of rhythmic or rhyme, rhythm and its pattern, sense of melody, through processing of musical sense, perception of music activities called audiation. The audition was conducted through the sequences of learning with the Sequence Tonal Learning headline. Woodford (1996) restates

"Gordon's music learning theory is premised on a number of assumptions about the nature of musical learning, the first being that musical thinking and learning depend on the ability to "audiate" or image, tonal and rhythmic patterns internally.

From the opinion above, it is stated that Gordon's music learning theory is based on arguments in the nature of musical learning, and the initial that musical thinking and learning depend on the internal skill to audiate or image, tonal and rhythmic patterns. This explanation clarifies that audiation is like science that constructs patterns of musical language from musical letters or tones that will form rhythmic or tonal grammatical music. Furthermore, Gordon (1980) in Latifah et al (2016, p. 10) tells *Audiation of the basic elements of music precedes, though it is further developed in conjunction with, the descriptive and interpretive explanations of the basic music elements, which means Audiation of the primary matters of music preludes, despite of collaboration of the descriptive and interpretive clarifications of the basic music matters.* Audiation activities according to Gordon written in the dissertation of Christian (2011) (in Latifah et al (2016, p. 11) says, there are several kinds of audition activities, such as:

- We audiate when we listen to music for syntax or its rhythmic patterns
- We audiate when we read notation and listen to what we read, with or without making a sound of music
- We audiate when we write music from dictation
- We audiate when we recall music from past
- We audiate when we write music from what we recall
- We audiate when we improvise abruptly
- And we audiate when we write music we have created or improvised

Salendro tone teaching was conducted from the initial process of implying Sundanese traditional aesthetics based *salendro tone*. The teaching model of Sundanese traditional aesthetic based *salendro tone* will be assessed in accordance with the audiation theories which are the learning sequences of familiarizing sense of tone, rhythm and other basic musical elements that form music in line with its style. Audition as the sequences of learning process has tonal learning sequence or named by the inventor as learning sequences in music, and this learning sequence is broken down into a skill learning sequence with orders as follows: Gordon (1980) in Latifah et al (2016, p. 14).

Aural and oral are the most basic activities which are familiarizing sense of tone through hearing sensitivity and also applied to singing activity. In oral and aural activities, there are sequences of generalization and creativity/improvisation. Generalization sequence is where the learners of tone and rhythmic sensitivity learn the fundamentals of music about tone, in this case Western tonal law, in which once the tone is recognized, it is voiced. Next, creativity and improvisation which are creative processes of improvising by singing without verbal association.

Verbal association is an activity in which someone learns to name a tone, major, minor, from tones or series of tones, for example, in the range of tonality of C major there are vocabulary such as C, D,

E, F, G, A, B, C, or we may use other vocabulary in fixing terms such as, Do, Re, Mi, Fa, So, La, to do, or even with numbers like 1, 2, 3, 4, 5, 6, 7,... and so on. In addition to tone vocabulary, there are chords like major, minor, diminish and augmented. In terms of keys to determine where the tone should be written in staves we know the G, F, C keys, etc.

Table 1. Syntax Learning Sequence for Audiation

AURAL/ ORAL	GENERALIZATION Aural/Oral CREATIVITY/IMPRO- VISATION Aural/Oral (without verbal association)
VERBAL AS- SOCINATION	GENERALIZATION Verbal CREATIVITY/IMPRO- VISATION Aural/Oral THEORITICAL UN- DERSTANDING Aural/Oral-Verbal
PARTIAL SYNTHESIS	
SYMBOLIC ASSOCIA- TION Reading-Writ- ing	GENERALIZATION Symbolic CREATIVITY/IMPRO- VISATION Symbolic
COMPOSYTE SYNTHESIS Reading-Writ- ing	
GENERAL- IZATION Aural/Oral- Verbal-Sym- bolic	
CREATIVITY/ IMPROVISA- TION Aural/Oral- Symbolic	

THEORITI-
CAL UNDER-
STANDING
Aural/Oral-
Verbal-Sym-
bolic

In the rhythmic field, we know, dup-let, triplet, quarter note, whole note, half note, sixteenth note, thirty-second note and so on. It is necessary for learners to learn the verbal association to recognize tone, its form and the name of what is written or drawn. In verbal association activity, there are three stages of learning, that is Generalization-Verbal, Creativity/Improvisation-Aural/Oral, Theoretical Understanding-Aural/Oral-Verbal. In this learning stage, we implemented only no. 1 activity because the audiation of *salendro tone* we provided was the most basic one. We, as the researchers have not equipped the learners with the creativity and theoretical understanding stages since the learners whom we taught are beginners who have just known *salendro tone*.

It has been recognized that the process of learning audiation based on Sundanese *tone* sensitivity has distinctive learning sequences, in accordance with the introduction of tone tradition applied. Also, there were some differences detected in introducing Sundanese *salendro tone* compared to Western tonal learning sequences. The learning sequence based on a sense of Sundanese *tone* was studied as audiation process, to equip non-Sundanese learners with *salendro tone* sensitivity.

According to Yunus and Subadio (1985, p. 89) in Latifah et al (2016, p. 15-16), *Laras* or tone is stated as "Another meaning of *laras* is "tuning system", In Javanese *gamelan*, we have two kinds of main *laras*, the *Pelog* and *Slendro laras*". *Laras* in the context of Javanese traditional music according to Widodo (2015) is

- (1) *laras* as the scale designation of sléndro dan pélog;
- (2) *laras* refers to tones in sléndro and pélog;
- (3) *laras* in nglaras *gamelan*, the *laras* manufacture or repair in *gamelan*;
- (4) *laras* in leres,

rempeng, and laras as the parameter to measure the sense quality of karawitan which is developed in garap and gending performance

In this study, the term *laras* or the tone used was taken from points 9 and 10 in which it states that *laras* is the direction and goal of *pelog* and *salendro* scales and tuning system in *salendro* and *pelog*. According to Jaap Kunst (1973, p. 15) in Latifah et al (2016, p 16), "According to Javanese tradition, *Salendro* is much more ancient than *pelog*, it was presented to humanity". The magnitude frequency between intervals according to Becker, Judith (as stated by Latifah (2016, p. 16) are exposed as follows:

Slendro

Pitch Level 1 2 3 5 6 *i* (upper octave)

Interval between

Pitch Level 220 280 236 242 248

The tuning system presented above is not tight pitch standardization, but Judith Becker, as an ethnomusicologist, found this series of intervals when measuring the tunings of *salendro tone gamelan* in Central Java.

The name of tones in the Sundanese tuning system has its own term, which was created by Raden Machyar Angga Kusumadinata. Van Zanten (2014) in Latifah (2016, p 16) expresses "Kusumadinata supplied two identical relative notational systems for Sundanese music in West Java: the *da-mi-na-ti-la* system and the cipher system (1, 2, 3, 4, 5) in the which da = 1, mi = 2, na = 3, n = 4 and la = 5", which means Kusumadinata proposed two identical notation systems in Sundanese music in West Java: *Da Mi Na Ti La* system and encoding system, where Da = 1, Mi =, Na = 3, Ti = 4, La = 5. Further, Van Zanten (2014) in Latifah et al (2016) restates: These relative notation systems of Kusumadinata are still widely used in schools today. That statement means that Kusumadinata's relative notation systems are still applied widely in schools nowadays.

There were six non-ethnic learners or

students whom Kusumadinata gave two relative notation systems which were identical to Sundanese music in West Java, *Da Mi Na* system and encoding system, where Da = 1, Mi = 2, Na = 3, Ti = 4, La = 5.

We found the non-Sundanese learners from SBMPTN 2016, in the Department of Art Education Music FPSD UPI Bandung. They have not known *salendro tone* and they are unfamiliar with it. This fact required special handling to imply the ability of *salendro tone*. It is expected that the power of audiation ability concept applied in *salendro tone* learning process based on Sundanese *laras* sensitivity, will strengthen the ability to sense *salendro tone* for non-Sundanese ethnic learners.

The purpose of the study is to scan the limitations and strengths of *salendro tone* audiation based on Sundanese *laras* sensitivity, to strengthen the sense of *salendro tone*.

METHOD

The method of study used to investigate and test the *salendro tone* audiation was Grounded Theory, comprehending theory of audiation and its strengths to imply the sense of *salendro tone* for the learners who had not known, understood, and listened to *salendro tone* sense.

Research Design offered to assess the strengths of *salendro tone* audiation is as Figure 1.

The expected result of study is *salendro tone* audiation model which has been assessed through comprehending theory and evaluation of *salendro tone* audition learning sequence based on Sundanese tradition.

Respondents were six non-Sundanese learners or students who have never known and listened to *salendro tone*.

RESULT AND DISCUSSION

Research results about students' difficulty in adjusting hearing sensitivity to *salendro tone* were collected from interviews done to six non-Sundanese ethnic

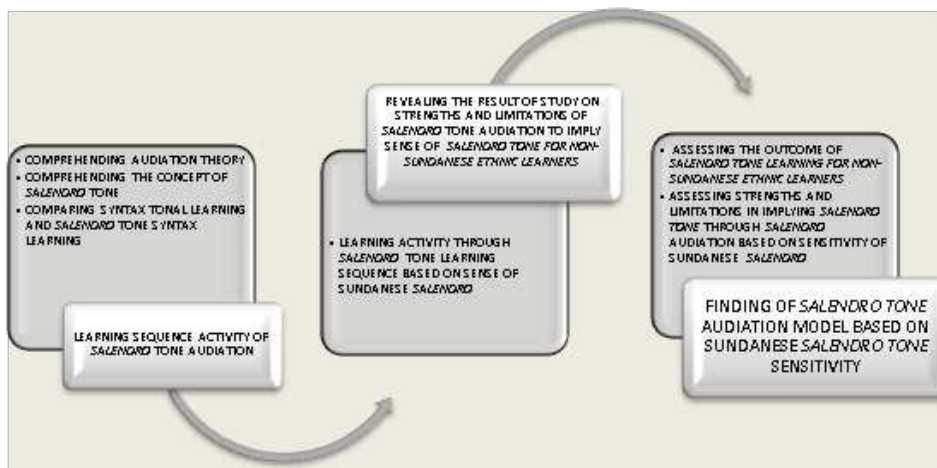


Figure 1. The Research Design

students who were currently studying basic Sundanese musical scale. The results are, as follows:

Interview on 13 June 2016 revealed that students were generally not familiar with the Salendro musical scale. The students' hearing sensitivity experienced difficulty in interpreting Salendro tone. They try to reach the tone by western tonal, one that they had mastered. Generally, students found difficulties in interpreting the first tone which was *Da* as the tone center, the was western tonal. Students experienced that the initial tone reference in Salendro note was unclear, compared to the western tonal. In western tonal, the initial note was in the first one that made it easier to learn. The ranks of Salendro tone were named by: DA-MI-NA-TI-LA-DA. Almost all non-Sundanese learners argued that they found difficulties in learning Salendro tone since it was unfamiliar to them. Another finding proved that apart from non-Sundanese students, students originated from Sundanese ethnic also found it difficult to learn the Salendro tone as they rarely listened to it.

Comparison between the Learning Stage Conception of Salendro Tone and Sequenced-Western Tonal Tone

The Learning Stages of Salendro Tone (Salendro Tone Audiatiion)

The stage of Salendro Tone learning

was done by Suwardi Kusmawardi, as a Sundanese' traditional art practitioner, started with singing the tone up and down with the notation of Da, Mi, Na (up and down note interval, Da, Mi, Na, Ti, La, Da) and introducing *Kempyung*. The first introduction was started by singing the tone Da (first tone) and down to the tone Ti (The third tone). From this move, the student was then guided to sing other tones both up and down. After that, the interval was applied as a benchmark to find other tones in Salendro musical scale, to move forward, move up, or move down. All activities at initial learning meetings were done by doing *ngabeo* or imitating what were sounded or sung (demonstrated) by the lecturers.

After the students understood the up and down interval of *salendro*, they were given simple model of *kakawihan barudak* song entitled *orai-oraiian*, and its notation. In this stage, students are asked to sing the tone in an interval way. The interval of the tone is simply without long interval hops. It is used to get students' hearing to be familiar with the Salendro's note on Da, Mi, Na notation. Although in this stage, the instructor was available to give examples to the students, however, students were only obliged to sing the note's notation. This means, the students imitated the notation sung by the instructors. Another reason of teaching *orai-oraiian* song was because the song intervals were not lifted too

far, but was only move some steps.

The next activity was to feel the salendro tone. By using question and answer activity, students were asked whether there were differences between Salendro's tone with others, for instance, by comparing the tone with *pelog*.

After students were able to express the sounds and interval differences of both *pelog* and *salendro* tone, lecturers delivered the learning materials. According to this, it was told that what made *salendro* and *pelog* different were, first, the difference in frequency. The different high and low frequency caused the high and low tone in *salendro* and *pelog*. Another difference lied on the interval. In *salendro*, the interval between tones was same. This similar interval caused difficulty in singing the note for one who never did it before.

Activity following the previous one was song material delivery entitled "Jalan-Jalan", this song was given under certain considerations. Among the considerations were rise and down interval with lifting movement and *gending* pattern. The presence of *kenongan* and *goonan* on *gending* pattern were as the rhythm functionary, and closure of a song. Here, students were asked to feel *kenongan* as the rhythm reference.

After "Jalan-Jalan" song was able to be sung in *salendro* tone by students with proper tone, the song material delivery was continued with the song "Niron Tentara". The difficulty level of the song was considerably higher for *salendro* beginner learner because of the interval. The interval was one *gambyang* or one octave in western musical scale, however the musical scale area of *tone* was five tones. By giving the students this song, it was hoped that students would have certain auditive experience in every tone lift. Three songs were given to give opportunities to students to feel the *salendro* tone. The reason of why the simple and short songs were given, was because the instructors wanted the song to be used as the basis to determine *salendro* tone by using hearing sensitivity.

The Stage of Western Tonal Learning According to Gordon Audiation Concept

In audiation learning stage entitled *Learning Syntax Taxonomi Of Tonal Patterns*, the tone is started with interval lift on Major tonal, with interval Tonika to the Dominant and Sub Dominant, then it is continued with *Modulatory, Chromatis, and Cadential*. The tone is continued with Minor tonal, with Tonika interval to the Dominant, and Sub Dominant, then *Modulatory, Chromatis, and Cadential*.

Example in Figure 2 shows one of learning stage in the Gordon audiation in Major tonal, from Tonika to the Dominant. It shows varied interval movement that is started with rise and falling kwint interval, then is continued with rising and falling tert. The strengthening of tonal feeling in Gordon's learning stage entitled *taxonomy of tonal patterns* gives one a hearing sensitivity by singing various interval written in Figure 2.



Figure 2. The Salendro Tone Learning Process in Sundanese Song Learning

Learning Results of Non-Sundanese Ethnic Students

After the *Salendro* Tone learning, the non-Sundanese ethnic students generally are able to sing simple *Salendro* songs and read *Salendro* tone range in one same *gambyang* area.

The differences between western tonal and *salendro* tone in general are described in this section. In Gordon stages, *Learning Syntax Taxonomy of Tonal Patterns*, the stage was started with an interval lift in Major tonal, with Tonika interval to the Dominant and Sub Dominant, then conti-

The figure displays two musical staves. The upper staff, titled "Tonic", consists of nine lines of music, each containing eight notes numbered 1 through 81. The notes are arranged in a sequence that moves up and down the scale. The lower staff, titled "Dominant", consists of two lines of music, each containing nine notes numbered 1 through 18. The notes are arranged in a sequence that moves up and down the scale. Both staves use a treble clef and a key signature of one flat (B-flat).

Figure 3. Content Learning Sequence Gordon Audiation

nued to Modulatory, Chromatis, and Cadential. Everything is then continued until Minor tonal, with Tonika interval, to the Dominant, and Sub Dominant, and then to the Modulatory, Chromatis, and Cadential. The tonal gives the feeling to the tone centralization, started with the first tone with the system of fix do, with the musical scale ranging from Do (I), Re (II), Mi (III), Fa (IV), So (V), La (VI), Ti (VII), Do (I). The feeling of Tonika is started with the first tone or the first accord that gives the hearing impression of a song to be back to the initial position (when there is the sensation of the song to end). The dominant feeling is a feeling that pushes one to feel the sensation of completion or closure, it is represented by the fifth tone, or the fifth accord. This Sub Dominant feeling is a relation that gives the sensation of tension or moving to the Dominant accord. Sub Dominant is rep-

resented by the fourth tone or the fourth accord. This feeling, actually, has started to root to the six non-Sundanese ethnic learners. Therefore, they need to have the sensitive hearing system to get their perception familiar with *salendro* tone.

In *Salendro* learning stages, the learning step is started with listening and singing while reading the basic level of the *salendro* musical scale. It is then continued with listening to the *kempyung* Da to Ti, down to other tones in *Salendro* musical scale by stepping up and down, and lift up and down. The activity is then continued with practicing to sing and read the advanced *kempyung* circle in a circular movement. In the stage of *salendro* tone strengthening of pure *Salendro* tone, the instructors used the *Salendro* etude as the teaching material to strengthen the students' ability in hearing and reading *Salendro* musical scale

and tone. In this stage, there is a condition where the students might be able to adjust their hearing systems to the *Salendro* tone that is continued with mastering *kempyung* circular movement. In this stage, the hearing sensitivity of the students is improved with *kempyung* used as the tone reference, but not as the central of tonal like one in Western tonal system. For the hearing sensitivity familiarization, Gordon (1989) states that:

Type 1: The most common type of audiations takes place as we are listening to music. When we listen to familiar and unfamiliar music, we edit familiar and unfamiliar tonal patterns and rhythm patterns, and then connect them in order to give syntactical meaning to the music.

The activity to familiarize the students' hearing in *Salendro* tone learning is not only to set the hearing perception of the students towards the tone, but also to get the students to be able to read *Salendro* musical scale with learning sources taken from *Salendro's* etude material. For this, Gordon (1989) delivers that:

Type 2: The second type of audiation takes place as we are reading the notation of familiar and unfamiliar patterns in familiar and unfamiliar music. It is called notational audiation. We may read silently, or we may perform what we read with our voice or on an instrument, or we may read as someone else performs the music.

The next activity is singing the model song entitled "Oray-Orayan" that has a medium interval which tone interval is not too far from one to another (step interval in *Salendro* tone). It is then continued with Question and Answer activity to enhance the students' understanding towards the difference of *salendro's* sound and interval with other tones.

After finishing learning "Oray-Orayan", the next singing is the song *Niron Tentara* that has longer interval, the interval in certain motives even up to one *gembyang*. In this step, learners learn to be familiar with *salendro* tone and musical scale

through the songs, started from simpler songs to the more complex one, in other words, from simpler songs to the stepping movement, and finally the lifting one.

Different stages of learning show different characters of musical scales of tones heard by both Western Tonal and *Salendro*. From different learning stages, it shows that tone understanding approach which is based on hearing sensitivity in *Salendro* tone learning moves to be more flexible, since the *salendro* is naturally modal, does not have tone centralization and cadence as shown in Western total. The western tonal itself, the cadence is based on the first (I) accord (Tonika), IV (Sub Dominant), V (Dominant) and back to I (Tonika). In *Salendro*, the feeling absorption of tone is introduced by teaching the *salendro* musical scale to the learners, mainly by using the *kempyung* circular, in the form of tone lifting, from Da to Ti, and is continued by finding proper tone, both in rising and falling interval and in stepping and lifting movements.

As explained earlier, the Western tonal tones employ tone centralization, there is always tendency for the accord to be back to the first (I) Tonika, or, from Tonika, to Sub Dominant, Dominant, and back to Tonika. Meanwhile, for *Salendro*, since the interval is shorter, there is a feeling that the accord keeps moving. To finish a sentence in a musical work, one does not need to be back to the tone I or Da, but one can finish the tone in Na, Ti, or other tones. This study emphasizes on the conclusion that *Salendro* tone can move in a flexible way, it is typically modal. The benchmark for finding the right tone can be done by sensing the feeling of *kempyung* Da, lifting down to Ti, but to finish a musical sentence, one does not need to be back to the tone I, especially for Sundanese songs. Zanten states that:

In Kusumadinata's relative system, which cipher is given to a particular tone depends on the function of the tone in the modal theory: in different modes the name da (=1) is, for instance, given to a different tone.

From the citation, it is learned that cipher is used in particular tones, depending on the tone functions in the Mode theory. In different condition of modes, the tone Da (=1) can be given to other tones.

Finally, this study learns that what causes the learners to face difficulties in giving tone centralization benchmark in *Salendro* tone is because *Salendro's* interval which range between tones is close from one to another, besides it also has the tendency to be typically modal. To answer the matter, continuous conditioning to strengthen the hearing perception of learners to the *Salendro* tones is considerably needed. In addition, to strengthen the ability of learners to understand this tone, there is Sundanese local wisdom-based- audiation theory to help them.

CONCLUSION

This study results in finding, in a form of typical audiation process in teaching *salendro*, owned by practitioners and instructors that is taught to students to be able to master audiation ability. Most of Sundanese karawitan artists have their ways to teach the Sundanese tone feeling mastery to their students. One of the ways is by teaching the interval lift *Da*, down to *Ti* (*Kempyung*), which is then used as a benchmark to find other tones with the stepping or up and down interval movement.

Singing the *salendro* musical scale that is continued by introducing *kempyung* sense that is started by up and down lifting movement from *Da* to *Ti*, then finding the appropriate tone both in rising and falling interval movement.

Singing "Kaulinan barudak oray-orayan" songs to familiarize the students with *salendro* tone. The song's melody is short, easy to be remembered, with stepping up and down interval movement that makes the song is easy to be sung.

Question and answer about the difference between *salendro* tone with other tones, like, *pelog* and *madenda*.

Teaching the song entitled "Jalan" with varied interval lifting; stepping interval and a reasonably short lifting interval.

Teaching the song entitled "Niron Tentara" in a difficult interval lifting up to one *gembyang* (one level up, as one octave in Western tonal in eight tones that in *salendro* is in five tones).

The practice of singing *salendro* tone and its interval variation. Practice of finding the appropriate tone of *salendro* musical scale through tone lifting *Da* to *Ti* (strengthening feeling of *kempyung* along with the practice of reading *salendro* tone).

Singing the model song with the easier interval lifting (stepping) in *salendro* tone (with the notation reading of model song).

Question and answer to strengthen the understanding of note and interval difference of *salendro* compared to other tones (conceptual strengthening of *salendro* tone).

Singing the model song with complex and far interval lifting along with the activity of reading notation of model song to strengthen *salendro* tone (higher difficulty level).

Audiation model of *salendro* tone that becomes the finding of this research is only one alternative to strengthen the feeling towards *salendro* for learners who never listened and known the *salendro*.

The study results towards non-Sundanese learners show that after experiencing audiation learning, generally the learners have had the ability to sing simple song in *salendro* tone and also to sing the *salendro* musical scale.

The advantage of *salendro* tone audiation model based on the research is that the model has been successful in teaching and implying *salendro* tone to non-Sundanese learners who has never listened and known the tone before.

The limitation of the study findings is on the time to familiarize the learner's hearing sensitivity which considerably needs longer time in about one semester or five months before the model can be implemented. Besides, an appropriate audio medium is also needed to fasten the *salendro* tone teaching to the learners since they are not familiar with the tone.

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