



Improving Prospective Primary School Teachers' Skill in Playing Gamelan Degung: An Action Research in Indonesia

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Abstract

Prospective primary school teachers had low skill in playing *gamelan degung* (Indonesian Gamelan). To improve skills in playing *gamelan degung* correctly, prospective primary school teachers need to be taught techniques of ringing, muffling (*menengkep*), and memorizing the compositions. Therefore, this research seeks to improve students in playing *gamelan degung*. The action research report presented in this article exemplified the work of the involved collaborative team in making reflective-critical steps to change the students' ability from their initial state of being unable to play *gamelan degung* properly to be able to play gamelan composition properly. The results of the action had shown changes in the ability of students in playing *gamelan degung* with 97.6% skill change level of the students and 57.15% success rate of students improving from the inept category to the adept category in playing *gamelan degung*. As a result, the skills of prospective primary school teachers in playing *gamelan degung* can be improved through some development steps in action research.

Keywords: Action Research; Gamelan Composition; Gamelan Degung; Music Skills; Prospective Primary School Teachers

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INTRODUCTION

In Indonesia, prospective primary school teachers are equipped with knowledge and skills in various fields of study, such as mathematics, language, natural sciences, social sciences and art (music, dance and fine art). After finishing college, they will become teachers (referred to as classroom teachers) who have an obligation to teach all areas of study to learners in primary school. As a result, they have different ways and learning styles with students who study one particular department/course. Each individual has diffe-

rent physiological, psychological and cognitive structures. These differences create different learning styles (Metin, Yılmaz, Birişçi, & Coşkun, 2011). Meanwhile, research on learning style has indicated that students succeed academically in learning environments that match their learning styles (Kolb, 2014; McCarthy, 1987; Peker & Mirasyedioğlu, 2008). Through observation during the last three years in the teaching place of the researchers, the prospective primary school teachers were not very focused on the deepening of one field of study, thus raising the problem on the level of mastery of the material in a field

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of study taught in the lecture. As the problem in this research, students in the primary school teacher education program in one university in West Java Province, Indonesia, were not focused on learning the materials of traditional music lectures, especially in the material of *gamelan degung* (musical ensemble from West Java Province, Indonesia, consisting of: *saron*, *bonang*, *jenglong*, *kendang* and *gong*). As a result, they found difficulties in playing *gamelan degung* with proper technique. Meanwhile, in primary school in West Java Province, *gamelan degung* became one of the musical instruments that should be taught regularly and properly as part of achieving the basic competence in the primary school curriculum that was playing rhythmic and melodic instruments. Therefore, they needed to be taught how to properly play *gamelan degung*.

Skills in playing *gamelan degung* as a part of musical skills in prospective primary school teachers need to be improved because they will provide the foundation of music skills for students in primary school. In Indonesia, primary school is pursued in six years. If during that time the teachers did not teach music skills due to their incompetence, the learners would lose the initial opportunity to develop their musical ability, including the ability to be creative and to express their feelings through music.

Moreover, the main tasks of music teachers at primary schools are: to create emotional and aesthetical attitudes to music, to guide the development of musical and aesthetical spiritual needs and taste, to enlarge and enrich the ability for profound understanding of musical compositions (Burdeva, 2005, p. 4).

Thus, it is essential to equip prospective primary school teachers with music skills, especially in playing *gamelan degung* as one of the preferred musical instruments taught in primary schools in Indonesia.

There has been quite a lot of writing about the study on gamelan, such as Thomas (1972), Roth (1981), Shehan (1984), Kartomi (1990), Steptoe (2001), Sorrell

(2007), McIntosh (2009), Hood (2010), Henley (2015) and others. However, studies that specifically examine gamelan learning are still limited, especially *gamelan degung* learning. Goldsworthy (1997) investigated the teaching of gamelan in Australia and explained several approaches in teaching gamelan in Australia and discussed problems faced by students of this tradition in a cross-cultural situation. Resna, Yusniarsih, and Yuliani (2017) directed their research to the use of *gamelan degung* as music therapy. On the other hand, Hardman (2015) directed his research on the analysis of minimalist musical composition in the gamelan. Meanwhile, Shah and Saidon (2017) focused their research on developing a graded examination for the Malay Gamelan. Of all research traced beforehand, there has been no research that specifically provides treatment to learners to master the playing techniques or the composition of *gamelan degung*.

To properly teach music in primary school, the prospective primary school teacher needs to master music skills. In this case, music skills that need to be mastered by learners must be mastered first by the teacher. Micheal Houlahan and Philip Tacka (2015) state that "development of music skills is related to the students' knowledge of rhythmic and melodic elements". It also means that prospective primary school teachers need to master the knowledge of rhythmic and melodic elements. Both of these have become a fundamental requirement in music learning, as once explained by Hargreaves (1986) or Schafer (1976). Moreover, Gardner (1973) suggests that "a reasonably competent 7-year-old should understand the basic metrical properties of his musical system and the appropriate scales, harmonies, cadences and groupings". This means that prospective primary school teachers also need to master the various elements of the music so that the musical ability of learners can also develop well.

They also need to know the potential musical abilities that appear in primary school students, such as the ability in "de-

veloping tuneful singing, reading, inner hearing, writing, improvisation, playing instruments, creative movement and listening skills (Mícheál Houlahan & Philip Tacka, 2015b). Therefore, various theories of music development in children as described by D. Butler (1992) and Walters (1989), or examples of teaching music practice in primary school (Mícheál Houlahan & Philip Tacka, 2015a, 2015b, 2015c, 2015d, 2015e), becomes a fundamental requirement for prospective primary school teachers. This is a tough challenge for them, because basically they are not taught to be musicians, yet they are required to have cognitive knowledge and music skills such as musicians. Without these basic skills, it is impossible for them to teach music well in accordance with the development and characteristics of learners in primary school.

Therefore, in line with the main problems in *gamelan degung* learning, action research was conducted to students as prospective primary school teachers. Those non-musician students were given treatment through stages developed in accordance with the needs and results of reflection-critical conducted during the research. Thus, the purpose of this research is to improve the skills of prospective primary school teachers in playing *gamelan degung*.

METHODS

Based on a needs analysis, action research was used as a research design. Many examples of action research approaches exist in education and specifically academic library literature (Adelman, 1993; Ferrance, 2000; Hendricks, 2012; Jefferson, 2014; Marrow, 1977; Moroni, 2011; Newton & Burgess, 2008; Watson-Boone, 2000). The use of action research design was in line with the needs of the researchers, who really needed to be involved in all stages of research, because "action research opens up opportunities for practitioners to actually be involved in research, which has immediate relevance and application" (Kos-

hy, 2005). Through this action research, the researchers could be involved intensely in every step of learning, so it could explore a practical problem with the intention of developing a solution to the problem (Creswell, 2015).

Collaborative Aspects

The principles of collaboration were employed in conducting this research, as the action researchers collaborated with others, it often involves co-participants in their research (Creswell, 2015; Schmuck, 2008). Studies that employ collaborative action research processes in education involve collaboration between teachers, or between teachers and researchers (D. L. Butler & Schnellert, 2012; Feldman, 1999; Fernández-Díaz, Calvo, & Rodríguez-Hoyos, 2014; Jaipal & Figg, 2011; Levin & Rock, 2003; Messiou, 2018; Vaino, Holbrook, & Rannikmäe, 2013). The parties involved in the collaboration included researchers as teachers of gamelan who were lecturers of traditional arts at the research site, colleagues as observers who also taught the arts in different courses, and some students who had been trained as tutors to guide students in groups in playing *gamelan degung*. Peer observation was very useful to portray learning activities as a whole, and this was a "simple way of gathering information on basic topics, such as questioning techniques, on- or off-task behavior, and classroom management" (Hopkins, 2008). Meanwhile, all collaboration teams greatly contributed to the reflection of learning activities as "reflexive process that advocates continued learning and development" (Stringer, 2013).

Research Site and Subject Description

The research was conducted in the primary school teacher education program in one of the universities in West Java Province, Indonesia. Research subjects were 126 students from three classes who joined a class of students who enrolled in music education courses. Thirteen (10.3%) students were men and 113 (89.7%) students were women. Their age was in the range

of 17-21 years. Their origins were quite diverse, which were from various regions in West Java Province. Forty-seven (37.3%) students were from Sumedang, 19 (15.1%) students were from Bandung, 18 (14.3%) students were from Majalengka, 22 (17.5%) students were from Cirebon, two (1.6%) students were from Garut, four (3.2%) students were from Kuningan, two (1.6%) students were from Indramayu, one (0.8%) student was from Subang, three (2.4%) students were from other areas in West Java and eight (6.3%) students were from other areas outside West Java. The various areas represented coastal areas, mountains, rice fields and fields.

Development of Indicators of Playing Gamelan

The assessment indicators in playing *gamelan degung* were developed to see the development of skills on the students. The assessment focused on one of the musical

instruments in *Gamelan degung* that served as a melody in the composition of Gamelan, which was *soaring* instrument. *Saron* was selected because this instrument required fairly complex playing techniques, since the prospective primary school teachers are non-musician students. Meanwhile, the assessment was directed into two things, namely to play *saron* individually (solo) without accompanied by other gamelan instruments as pre-unit evaluation and to play *saron* as an ensemble as post-unit evaluation. The assessment indicators were developed into five levels (beginner, elementary, intermediate, upper intermediate and advanced) and five categories (very inept, inept, fairly adept, adept and very adept). Assessment indicators can be viewed in detail in Table 1.

RESULTS AND DISCUSSION

Collection and Analysis of Pre-Unit Data

Table 1. Skill Indicators in Playing Gamelan

Capability Level	Key Features	Category
Beginner	Wrong sitting position; Wrong technique in holding <i>saron</i> beater	Very Inept
	Rigid body movements; Stiff wrist	
	Not able to memorize the melody completely	
	Not able to do muffling (<i>tengkepan</i>) technique	
Elementary	Correct sitting position; Correct technique in holding <i>saron</i> beater	Inept
	Flexible body movements; Relaxed wrist	
	Not able to memorize the melody completely	
	Not able to do muffling (<i>tengkepan</i>) technique	
Intermediate	Correct sitting position; Correct technique in holding <i>saron</i> beater	Fairly Adept
	Flexible body movements; Relaxed wrist	
	Able to memorize the melody completely	
	Not able to do muffling (<i>tengkepan</i>) technique	
Upper Intermediate	Correct sitting position; Correct technique in holding <i>saron</i> beater	Adept
	Flexible body movements; Relaxed wrist	
	Able to memorize the melody completely	
	Able to do muffling (<i>tengkepan</i>) technique	
Advanced	Correct sitting position; Correct technique in holding <i>saron</i> beater	Very Adept
	Flexible body movements; Relaxed wrist	
	Able to memorize the melody completely	
	Able to do muffling (<i>tengkepan</i>) technique	
	Able to play with up and down tempo	

The initial picture of the knowledge and experience of students in learning *gamelan degung* was identified. Therefore, 126 students were assigned to answer questions in the form of a Guttman scale as shown in Table 2 below.

Table 2. Experience in Gamelan Learning

Experience in Gamelan Learning	Yes	No
Do you know what is <i>gamelan degung</i> ?	116	10
Have you ever learned how to play <i>gamelan degung</i> ?	69	57
Do you know the proper technique of playing <i>gamelan degung</i> ?	59	67

Table 2 explains that the majority of students (92.1%) had already known about *gamelan degung*. In fact, the majority of students (54.8%) claimed to have ever studied *gamelan degung*. However, their recognition also showed that the majority of them (53.2%) did not know the proper technique of playing *gamelan degung*. To ensure the knowledge and skills of the students in playing *gamelan degung*, the initial test was conducted. It was conducted through the performance of a *gamelan degung* instrument, which was *saron* instrument. *Saron* instrument requires a special technique that is the technique of *tengkepan* that must be mastered properly. They were tested one by one to play a series of simple melodies on a *saron* instrument. Each students' test took about two minutes. The indicators were the sitting position, the technique of holding *saron* beater, the movement of the body while playing the melody, the movement of the wrist, melodic memories, muffling technique and tempo changes. The test results showed the Table 3.

Table 3 shows that the majority of students were still at the beginner or inept level, and few students were at elementary or inept level. This explained that they could not play *gamelan degung* correctly. The technique of playing *saron* had not been mastered and the way of holding *saron* beater and the sitting position was still incorrect. Thus, their confession of having known the technique of playing *gamelan*

degung correctly could not be realized.

Table 3. Initial Test Results of Gamelan Degung Playing Skill

Level	Total	Percentage (%)
Beginner	116	92.07
Elementary	10	7.93
Intermediate		
Upper Intermediate		
Advanced		

Once the level of student ability in playing *gamelan degung* was known, they were required to rate statements in Likert scale. Their motivations-based on their ability-to learn *gamelan degung* properly was identified.

From Table 4, it could be inferred that the majority of students had built opinion on the importance of being able to play *gamelan degung* properly even if they had to learn this in their age at that time. In fact, they showed disagreement if only musicians or music teachers who need to have the skills to play *gamelan degung* properly. The result of the analysis from the pre-unit survey showed that students did not have adequate skills in playing *gamelan degung*, but they had high motivation to learn *gamelan degung* in order to play it properly.

Critical Evaluation Units of Gamelan Degung Learning

The results of the pre-unit analysis resulted in seven critical steps to be applied in *gamelan degung* learning in prospective primary school teachers. The seven steps were done along with thorough observations by the collaborative team and regular reflections on each action and learning outcomes. For the purposes of writing notation, Sibelius software was used to write notes symbols and Parnumation font was used to write numeric notation.

Step 1: Introduction of Gamelan Degung Playing Technique

An explanation of the correct techniques in playing *gamelan degung* was given. More specifically, an example of how

Table 4. Motivation to Learn to Play Gamelan Degung

Motivation to Learn to Play <i>Gamelan Degung</i>	Strongly Disagree	Disagree	Fairly Disagree	Agree	Strongly Agree
Playing <i>gamelan degung</i> properly is very important to master.		1	11	47	67
Learning to play <i>gamelan degung</i> for the sake of teaching in primary school needs to be done even in adulthood.		1	10	49	66
Only musicians or music teachers who need to be able to play <i>gamelan degung</i> properly.		54	46	19	6

The image shows a musical score for the 'Gambir Sawit' composition. It consists of five staves: Saron, Bonang, Jenglong, Gong, and Kendang. The Saron staff is the top staff, written in treble clef with a key signature of one sharp (F#) and a 4/4 time signature. It contains a melody with seven numbered measures. The Bonang staff is the second staff, written in treble clef, and provides a rhythmic accompaniment. The Jenglong staff is the third staff, written in treble clef, and provides a frame for the song. The Gong staff is the fourth staff, written in bass clef, and provides a marker of the cycle of musical composition. The Kendang staff is the bottom staff, written in a drum notation style, and provides a controller of the rhythm.

Figure 1. Gambir Sawit Music Composition

to play *gamelan degung*, especially *saron* instrument, was given with demonstration method. *Saron* was the only blade-shaped instrument in *gamelan degung*, so it can produce long sound if it is not muffled. Hence, if a thread of melody on *saron* is sounded without using *tengkepan* technique, then the sound can collide and interfere with the harmony of sound and can sound neither tidy nor clean. Therefore, all aspects that must be mastered were practiced, such as how to sit properly for men and women to be able to move flexibly to follow the direction of the melody of the musical composition, how to hold *saron* beater to be able to beat powerfully and play with a fast tempo, how to muffle *saron* blade to produce soft and harmonious sound and how to set the power for the *saron* to sound it softly or loudly.

Step 2. Giving Music Composition to *Gamelan Degung*

After students learned and tried to practice how to play *saron*, they were given a musical composition entitled “*Gam-*

bir Sawit” in the form of notation to be learned and practiced. This composition was commonly used as opening music in *gamelan* performance with dynamic tempo (slow-fast-slow). The main melody was in the *saron* instrument. While other instruments, which were *bonang* as the rhythm, *jenglong* as the frame of the song, *kendang* as the controller of the rhythm and *gong* as the marker of the cycle of musical composition. Students were focused on learning *saron* first which was considered more difficult and this instrument was also used as a benchmark for the assessment of their ability to play *gamelan degung*. Figure 1 below is the notation of *Gambir Sawit* music composition.

The students were assigned to learn the melody by reading the notation and then memorizing it. However, a new problem emerged. They were not used to reading notation, so it was still difficult to memorize *saron* melody. This became a reflection to develop the next step that could make it easier for students to memorize the melody.

Step 3. Memorizing Gamelan Degung Melody through Daminatila Notation

Daminatila notation, a Sundanese music notation system created by R. Mahyar Anggakusumadinata that was commonly used by Sundanese musicians in West Java, Indonesia to mention each tone, was employed in this research. This notation consists of five levels according to the tone level of *gamelan degung*. Level 1=Da, level 2=Mi, level 3=Na, level 4=Ti and level 5=La. Thus, if sorted then the title for each tone is G=Da, F#=Mi, D=Na, C=Ti, and B=La, or G=1, F#=2, D=3, C=4 and B=5. In this notation system, the high octave is marked with a dot below the number, and the low octave is indicated by a dot above the number. For a higher or lower octave, the point increases from one point to two points. The order of *saron* melody with *daminatila* notation as a whole based on the *saron* melody in Figure 2.

Students were assigned to memorize two things: first, the tone sequence that 1=Da, 2=Mi, 3=Na, 4=Ti, and 5=La, and second, the whole *saron* melody in Figure 2 using *daminatila* terms. While memorizing the melody, they were conditioned to sing it together first. Within a week, they managed to memorize a series of *saron* melodies using *daminatila*. However, a new problem of a big number of students emerged, as there were 126 students that had to be divided into three classes. On the other hand, there was only one set of gamelan, so they did not have the opportunity to learn *tengkepan* technique in turns due to insufficient lecture hours. Through reflection activities, there was an idea to create an exercise medium, which was a simple, easy to make and a handy gamelan simulator.

Step 4. Learning through Gamelan Degung Simulator

All students agreed to create a gamelan simulator. They agreed to create it from Styrofoam because it was easy to

get, cheap, easy to shape, and handy. However, its weakness was that it could be easily damaged. Within one meeting, the students succeeded in creating a *saron* simulator. The shape was almost the same as the original *saron* with the same number of blades, but it could not produce sound and the size was reduced to be easy to carry. Thus, the *saron* simulator only mimicked the shape of a *saron* just for the sake of memorizing melodies and practicing *tengkepan* technique.

At this stage, the students had memorized the *saron* melody series, and also had made the *saron* simulator, so the learning was done through the method of one person playing on the original *saron* to illustrate the tone and the rest play on *saron* simulator. This method was done repeatedly so that they quickly memorized and were able to do *tengkepan* technique. This method was effective enough to make them memorize a series of *saron* melodies. However, another problem emerged. There were a lot of students who had difficulty to do *tengkepan* technique. The right hand could play *saron* in accordance with the rhythm and the melody, but the left hand was still difficult to follow the melodic groove of *saron*. The results of the reflection decided that an individual approach was taken by directing the hand flow directly to every student who was having trouble.

Step 5. Learning through the Guidance from Lecturer and Tutor

Since the majority of students were not accustomed to playing musical instruments, the basic ability to play a musical instrument that combines the right hand and left hand to work with separate focus was difficult to master. Meanwhile, *tengkepan* technique requires the ability, where the right-hand plays the melody and the left-hand closes or stops the sound that has been played by the right hand simul-

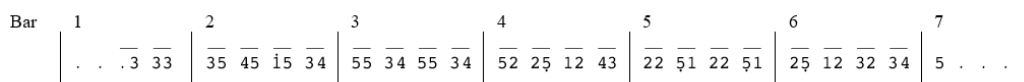


Figure 2. *Saron* Melody with *Daminatila* Notation

Bar	1	2	3	4	5	6	7
Right Hand	0 0 .3 33	$\overline{35}$ $\overline{45}$ $\overline{15}$ $\overline{34}$	$\overline{55}$ $\overline{34}$ $\overline{55}$ $\overline{34}$	$\overline{52}$ $\overline{25}$ $\overline{12}$ $\overline{43}$	$\overline{22}$ $\overline{51}$ $\overline{22}$ $\overline{51}$	$\overline{25}$ $\overline{12}$ $\overline{32}$ $\overline{34}$	5 . . .
Left Hand	0 0 0 0	.3 $\overline{54}$ $\overline{51}$ $\overline{53}$	$\overline{40}$ $\overline{53}$ $\overline{40}$ $\overline{53}$	$\overline{45}$ $\overline{02}$ $\overline{51}$ $\overline{24}$	$\overline{30}$ $\overline{25}$ $\overline{10}$ $\overline{25}$	$\overline{12}$ $\overline{51}$ $\overline{23}$ $\overline{23}$	4 0 0 0

Figure 3. Combination of right hand and left hand

Bar	1	2	3	
Right Hand	0 0 .3 33	$\overline{35}$ $\overline{45}$ $\overline{15}$ $\overline{34}$	$\overline{55}$ $\overline{34}$ $\overline{55}$ $\overline{34}$	and so forth
Left Hand	0 0 0 0	$\overline{0.5}$ $\overline{.4.5}$ $\overline{.1.5}$ $\overline{.3.4}$	$\overline{.5.5}$ $\overline{.3.4}$ $\overline{.5.5}$ $\overline{.3.4}$	and so forth

Figure 4. Error in *Tengkepan* Technique on Left Hand

taneously. Thus, the combination between the right hand and the left-hand should be as Figure 3.

The combination of hitting the *saron* blade (right-hand) and gripping the *saron* blade (left hand) as in Figure 3 will produce a clean and neat *saron* sound. However, the errors made by the students look like in Figure 4.

Figure 4 shows that the student could not perform the *menengkep* technique at the same time as playing *saron* with the right hand, but more like a sound delay. Therefore, some of them were helped by having their hands held and directed directly to combine the play on the right hand and left hand so they could feel how to control the hand to play a role in different focus in playing the instrument. The result was quite effective; those who were assisted in this way were able to do the *tengkepan* technique although in a slow tempo. From this development, it was decided on the reflection to continue this way by involving the tutors, which were students who had been trained and already had the ability in the advanced level, so that all students could get enough attention.

The majority of students who had not been able to do *tengkepan* technique practiced under tutor guidance. The mentoring process did not only happen in the lecture hours, but many of them were outside of the lecture hours. They learned *tengkepan* technique more often by using *saron* simulator because they could learn anywhere that way. Moreover, there were only two

original *sarons* available. Some tutors reported that this was quite a good way to help students who had difficulty in doing *tengkepan* techniques. However, it was also reported that there were also students who could not be assisted fully by the tutor, which was related to the speed of memorizing the melodic series because this was very dependent on the ability of each student. Basically, students in this category required extra hard practice in order to match the learning outcomes of other students who could memorize faster.

Step 6. Performing in the Form of *Gamelan Degung* Ensemble

After the individual learning, all students played *saron* combined with other instruments, which were *bonang*, *jenglong*, *kendang* and *gong*. It aimed at training them in the real gamelan show in the form of an ensemble. There were several aspects that were trained here, which were the cohesiveness, the dynamics and the tempo. Technical learning was still done in turns, some were playing original *saron* and others played *saron* simulators. In the initial phase, students were focused on playing *saron* only, while other instruments as supporting music were played by tutors. However, in the next phase, students who had been adeptly performing the union of musical composition took turns to try to learn other instruments by staying under tutor guidance. Thus, in the end, all instruments of *gamelan degung* could be played by them.

Step 7. Final Test in Playing *Gamelan Degung*

After going through six steps of skill development in playing *gamelan degung*, students were tested to play *saron* accompanied by other instruments. The test was done individually and was directly assessed based on the indicator of *gamelan degung* playing skill that had been made. The test results can be seen in Table 5.

Table 5. Final Test Results of *Gamelan Degung* Playing Skill

Level	Total	Percentage (%)
Beginner	3	2.4
Elementary	11	8.7
Intermediate	40	31.7
Upper Intermediate	55	43.7
Advanced	17	13.5

Based on Table 5, it could be identified that there was an increase in students' skill in playing *gamelan degung*. Beginner level, which initially consisted of 116 (92.07%) students had been reduced to three (2.4%) students. The elementary level had increased, from 10 (7.93%) students to 11 (8.7%) students. Meanwhile, the intermediate level increased from zero to 31 (31.7%) students. The upper intermediate level also increased from zero to 55 (43.7%) students. Similarly, the advanced level increased from zero to 17 (13.5%) students. The improvement of students' skill in playing *gamelan degung* from pre-test to post-test is depicted in Figure 5 below.

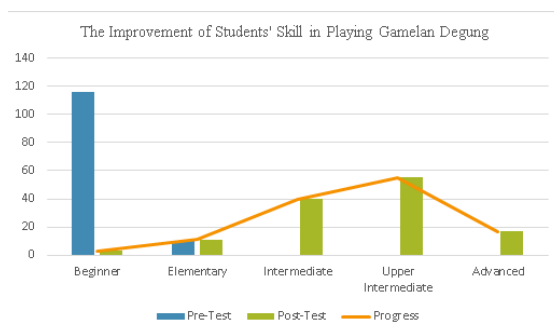


Figure 5. Graph of the Improvement of Students' Ability in Playing *Gamelan Degung*

As depicted in Figure 5, the pre-test was still dominated by beginner level students. However, after the post-test, they spread to all levels, with dominance at the upper intermediate level. At the beginner level, only three students remained stagnant or did not make progress in playing *gamelan degung*. On the other hand, the students who were initially at the elementary level had improved their skills and had been replaced by the students from the beginner level.

According to students, there was a difference in performance between playing *gamelan degung* during exercise and during post-test. Twenty-five (19.8%) students admitted that the performance during the post-test was the same as the exercise, 38 (30.2%) students admitted that the post-test performance was better than the exercise and 63 (50%) students admitted that the post-test performance was worse than the practice. They were questioned further, "What was the cause of your performance getting worse?" The majority of students gave answers because of nervousness and lack of confidence. To address this issue, Zakaria, Musib, and Shariff (2013, p. 226) believe that "music students have to undergo some training programs that can develop personal confidence, enhance motivation and skills in managing stage fright, proper breathing techniques and body communication".

Post-Unit Data Collection and Analysis

Results of treatment for students in playing *gamelan degung* had shown a positive result. One hundred twenty-three (97.6%) students had improved their skill and only three (2.4%) students were stagnant. If accumulated, the students who were still in the inept category (beginner-intermediate) were 54 (42.85%) students, while students who were already in the adept category (advanced) were 72 (57.15%) students. Thus, the majority of students were already in the adept category. These results had essentially demonstrated good student skill. However, these results were still not satisfied because

se a lot of students, which were students at the beginner, elementary and intermediate level still needed to improve their skills in playing *gamelan degung*. As for the students in the adept category, the weakness that still needed to be improved was to play *gamelan degung* with a dynamic tempo.

Students who were still in the inept category were asked further, "What is the difficulty you faced in learning *gamelan degung*?" One student expressed, the difficulties were to perform *tengkepan* technique and to harmonize with other musical instruments. There was also a student who said that it took a long process to be good at playing it and they should do a lot of practice. This opinion was in line with students who were already in the adept category. One student said that practicing diligently, earnestly and with sufficient time would make it easier to learn. Thus, the frequency of exercise became one of the decisive factors in mastering the techniques in playing *gamelan degung*.

They were then asked, "To master *gamelan degung* material, how many times do you practice in a week?" One (0.8%) student admitted to not practicing, 76 (60.3%) students admitted to practice 1-3 times, 41 (32.5%) students admitted to practice 4-6 times, two (1.6%) students admitted to practice 7-9 times and six (4.8%) students admitted to practice more than 10 times. Thus, the majority of students practiced 1-3 times a week. Meanwhile, they were also asked, "Do you need the help of friends/tutors to master *gamelan degung*?" One hundred eighteen (93.7%) students answered 'Yes' and eight (6.3%) students

answered 'No'. Hence, the majority of students learned collaboratively with friends or tutors to be able to master *gamelan degung*.

After the students completed all series of *gamelan degung* learning, their understanding based on their experience in learning *gamelan degung* was investigated. They were given several statements to rate on a Likert scale.

Table 6 depicts statements of the students who had agreed that *gamelan degung* was a musical ensemble suitable for teaching in primary schools and could help students develop their musical abilities. This was based on their experience in learning gamelan. Statements at fairly disagree scale were identified from students who had difficulty learning gamelan, where their skill in playing gamelan could not reach the adept category. Nevertheless, the majority of the students agreed that *gamelan degung* material was feasible to be taught in primary school. It also represented that students in general at that time had better knowledge and skill in playing *gamelan degung*.

Through this action research, some fundamental problems in music learning, which were the problem of reading notation and frequency of exercise, could be identified. In music learning in formal educational institutions, reading notation became a fundamental need for learners. Although Indonesia was a country with a traditional oral culture in art inheritance, what was needed in the context of formal education was the ability to read notation, because there were so many students

Table 6. *Gamelan Degung Lesson*

<i>Gamelan Degung</i> Lesson at School	Strongly Disagree	Disagree	Fairly Disagree	Agree	Strongly Agree
<i>Gamelan degung</i> material is in accordance with the curriculum in primary school about learning rhythmic and melodic instruments.			30	56	40
<i>Gamelan degung</i> must be taught in primary school.			24	42	59
<i>Gamelan degung</i> can help primary school students develop their musical skills.			13	53	60

who had to learn at the same time. Sharpening the ability to read notation was ideally done in separate time by learning the instrument directly. In other words, "the ability to read notation is a separate task from the physical manipulation of musical instruments" (Tucker, 2007, p. 51). Hence, learning to read notations before learning musical instruments offered a more profitable opportunity and could accelerate the process of learning a composition on musical instruments. Relevant research had also proven the importance of having the ability to read musical notation (Darrow, 2008; Douglas & Willatts, 1994; Gromko, 2004).

Success in performing musical compositions was also influenced by the frequency of practice. A well-tested method to master the musical composition well is the drill method. Playing musical instruments require various types of automaticity. It is essential to attain the speed needed to perform and read music with meaning and accuracy. Careful drill offers the means of achieving this automaticity (Tucker, 2007, p. 51). "The performance of actual works of music often occurs only after extensive drill" (Duerksen, 1972). In fact, to achieve the level of professional musicians, 10,000 hours of lifelong practice was required (Djohan, 2003). Thus, to be able to perform the composition of music well, students needed to do regular exercise more than 1-3 times a week. Drill method can be a solution for students' lack of mastery in the composition of music.

Gamelan degung as a music ensemble requires a strong commitment from its players to learn collaboratively. The lack of commitment in attending training schedules can obviously disrupt the course of music practice. This is the challenge of working on ensemble music. "Music ensemble courses are also unique when compared to other academic core subjects because of additional required class time that may be scheduled outside of the school day" (Rawlings, 2015, p. 2). Thus, only through critical reflection and dialogue can educators and learners create the conditions and

circumstances in which they can search together collaboratively for more comprehensible authentic and morally appropriate ways of valuing and engaging in musical practices (Ben-Tal & Salazar, 2014; O'Neill, 2012). Thus, collaborative learning for this type of ensemble can be a solution to improve students' skill in playing musical instruments.

CONCLUSION

This research proved that initial students' skill in playing *gamelan degung* was very low. They did not get the teaching of good gamelan playing technique and did not even have good ability in reading notation. Through this action research conducted collaboratively between researchers, colleagues and students (tutors), the prospective primary school teachers' skill in playing *gamelan degung* could increase well. They were able to improve their ability to play *gamelan degung* and to read notation for *gamelan degung*. The skills in playing *gamelan degung* of 123 (97.6%) students with different levels of ability were improved. The majority of students successfully entered the adept category in playing *gamelan degung*. Thus, action research could be an alternative to improve students' ability in playing gamelan.

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