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An Active Learning Study: Mastering Music Coordination Skills through *Kompang* and Dalcroze Eurhythmics among Primary Students

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Music coordination skill is very important in music education and performance. A problem that has been identified is that children are unable to sing and play traditional percussion (kompang) simultaneously during school music performance. It appears that the necessary skill is barely coached with the current teaching methods used by primary school teachers. This not only affects performance quality but also necessitates more hours of training despite students being talented in singing or playing musical instruments. The purpose of this study is to apply the Dalcroze Eurhythmics approach to improve musical coordination skill among primary school students. Hence, a quasi-experimental design was used to collect data from two groups of 9-year-old students in a Malaysian primary school, 35 in the experiment group and 35 in the control group. The pre-test and post-test data consist of mean value, standard deviation, percentage, and T-test analysis. The instrument used for data collection is a Practical Music Test. The result of the research shows that: (1) there is a significant difference between pre-test and post-test scores in the experiment group, (2) there is significant difference in achievement score post-test between the control and experiment group, and (3) there is a significant difference between the achievement scores of the control and experiment groups. The present study has proven music coordination skill has potential to be developed as a part of music education in primary school. The findings also reveal that the Dalcroze Eurhythmics approach is an appropriate intervention.

Keywords: eurhythmics, music education, coordination skill, singing, kompang playing, quasi-experimental

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INTRODUCTION

Music education is important for children as it brings many benefits to their development (Mustafa, 2021; Ismail et al., 2021). Researchers and musicians state that singing and playing music simultaneously is a difficult skill to master. Dickson (2019) and Webb (2014) explain that playing musical instruments while singing is a skill that can enhance a person's sensitivity towards musical elements such as melody and rhythm through the use of body parts and minds. A person may be able to play piano or guitar while singing; however, a basic musical activity is playing percussion while singing (Milan, 2015). Wahyuningsih (2019) stated that the skill of singing while playing a percussion instrument is a high-level skill that can strengthen children's cognitive level. It not only complements singing but this skill also facilitates song creation and improvisation.

Based on our preliminary observation in many urban primary schools, it was found that many students face a problem performing in school music performances or competition such as *nasyid*, *dikir barat*, *kompang formasi*, and *boria* (Malaysian ethnics performance). The students can hardly coordinate singing while playing the kompang, a traditional Malay musical instrument. During the teaching process in class, students are taught with the aspects of singing and playing musical instruments separately. Although they are able to sing and play percussion instruments correctly, the students still could not coordinate both skills very well (Ismail et al., 2021; Anuar & Ismail, 2021). There is a need to find solution of this problem as children have the right to get a quality education as mentioned by Kawuryan and Sayuti (2021).

The coordination in these performances also results in that the accuracy of singing the right pitch and tempo decreases. They look awkward when performing both of the skills simultaneously. Besides that, protests and complaints are often heard from students due to the challenge in singing and playing instruments simultaneously. This problem leads to an unsatisfactory musical performance for competition and school events. Students who are not confident in performing due to lack of certain musical skills may become anxious and further harm themselves (Osborne, 2016).

Therefore, this study was conducted to examine if Dalcroze Eurhythmics approach could be used to improve children coordination skills, and in comparison with the conventional method, how effective is the approach to improve children coordination in singing and playing *Kompang* simultaneously. The benefits of this study will provide information to all teachers and practitioners in selecting the best strategies to cater children's coordination problems especially in singing and playing music. Through the used of *Kompang* (Malaysian traditional music instrument), it is hoped to increase awareness and appreciation on the culture and traditional instrument, as evidenced from various music research (Loo, Loo & Chai, 2016; Loo, Chai, Loo, & Chua, 2021). Our objective for this study is to identify the effectiveness of Dalcroze Eurhythmics approach in improving children's coordination skill, and to compare the results between Dalcroze Eurhythmics approach and conventional method in improving singing and playing *kompang* skill.

Music Coordination Skill

Singing while playing a musical instrument should be able to help a singer keep to the right tempo and trigger a natural feeling towards the song melody. It also makes the person more valuable and talented than those who can only perform one musical skill at a time (Roth, 2016). Murimi (2016) then explained that singing and playing musical instruments simultaneously enhances focus and coordination skills faster. Ismail and Loo (2018) refer to coordination between singing and playing musical instruments as 'rhythmic speech'. A percussion instrument is used as an accompaniment while singing to produce feelings through the application of pressure and meter element at primary school level.

The skill of singing while playing a traditional percussion instrument has long been practised in Malaysia by older generations. This skill combines singing with *kompang* percussion instrument yet also there are also other percussion instruments played for entertainment or specific purposes. Most of Malay's musical performances use singing skills while playing percussion instruments for the recital of holy verses praising Allah and *selawat* for the prophet, as in *Zikir Rebana* in Negeri Sembilan, *Rebana Kerching* and *Dikir Laba* in Kelantan, *Rodat* in Terengganu, and *Hadrah* in Perlis (Patricia & Tan, 2017).

Kompang is often associated with playing while singing. Research by Zakaria (2017) found that *kompang* is played while standing in a formation accompanied by vocal songs with Islamic elements. The songs played are usually derived from Nadzom scripture (Al-Barzanji) or poems that are designed to suit wedding events and festivals. Kompang performance is said to be more melodious with the accompaniment of songs. Ramadona, Minawati and Nursyirwan (2017) also clarified similarly in their research. They explained that traditional *kompang* is paraded in *kompang* performances together with songs praising the mightiness of Allah and *selawat* for the prophet. Among the Malays, singing while playing kompang can be performed in two versions, in Arabic and/or Malay according to the book of zanji. Kompang is also played among Bajau people in Sabah (Pravina, Azam, & Raja, 2009).

Kompang rhythmic pattern is usually played with accompanied songs (Matusky & Tan, 2017). Initially, song lyrics are sung in Arabic and derived from the book of *zanji*. Later, lyrics have been changed into the Malay language to make the *kompang* songs easier to understand. Professional *kompang* players learnt the instrument since since childhood (Lestari et al., 2019). This traditional instrument also seems to be aligned with children development when it was used to accompany children's learning at school, improves children's singing and increase their motivation (Mohamad, 2020; Ismail et al., 2021). This may be the reason why it was used in many music classes in the primary schools in Malaysia.

Nowadays, the use of kompang as an accompaniment in singing is still common in Malay community particularly at weddings (Rejab, 2002). Malay society illustrates *kompang* as traditional music: a single-faced drum accompanied by vocals. *Kompang* music is said to consist of rhythmic patterns shaping song repertoires whereas the vocals

consist of textual words made into songs. The *kompang* rhythmic pattern accompanying the melodic movement is said to possess the integration and continuation in the concept of playing *kompang* (Ruseli & Minawati, 2017). Finally, *kompang* performances have evolved so that the *kompang* songs are more relevant with themes related to current affairs or according to an event's theme.

Eurhythmics Approach

Etmologically, 'eurythmic' is derived from the Greek language rooted from the words *eu* and *rhythmos* which mean 'good flow' or 'good movement' (Mead, 1994). Eurhythmics is an activity based on muscular sensation. Anuar and Ismail (2021) determined eurhythmics as rhythmic movements. The eurhythmic approach involves teaching of musical concepts through movements which enable someone to feel compelled to move, and thus appreciate the feelings depicted in music such as suspense and fear (Mead, 1986). Many analogue movements are used to evoke musical concepts, building integration naturally to unravel musical feelings. Dalcroze believes the best way to generate a strong musical base is through energetic music.

The eurhythmics approach consists of three crucial components: rhythmic movements (*la rythmique*); solfa (*le solfège*); and improvisation (*l'improvisation*) (Smith, 2014; Dalcroze, 2013; Mead, 1986). Nevertheless, the current researchers found that there are several books and articles that still use the eurhythmic name as a representation of the first component in this approach only. Eurhythmics components involve movement, posture, and gesture to conceptualize tempo, dynamic, pressure, and musical elements. In this ideal approach, elements from each subject are combined to form a teaching approach based on creativity and movement (Dalcroze, 2013). According to Kivijärvi, Sutela and Ahokas (2017), eurhythmics movement is an exploration of musical elements through movement activities. Solfa is the use of voice, ears, and body to identify the relationship between pitch, harmony and musical theory. Improvisation is interpreted as spontaneous musical creation using body, voice and musical instrument.

Dalcroze believed that the must-have characteristics of each musician are sensitivity and expression towards music, and ability to show music through movements, sounds, thoughts, feelings, and creations. Mead (1994) underlines four points that explain Dalcroze's approach. The first is eurhythmics to enhance physical, oral, and musical imagination skills in mind. Second is solfa, improvisation, and eurhythmic functioning to enforce musical skills in more expressive ways and enhance intellectual ability. The third is the musical skill obtained from speech, gesture, and movements. It is also related to time, space and energy concepts. The fourth entails a more effective way for a person to learn music which is through the senses. Therefore, music must be taught through touch, kinesthetics, oral and visual elements.

Students are encouraged to take an active role in their education as urged by Dalcroze's educational philosophy (Anuar & Ismail, 2021). The success of this effort is contingent upon the inclusion of musical components such as improvisation and a discovery-based learning technique. After presenting new concepts to pupils via movement or kinesthetics activities, Dalcroze practitioners transform the learning into a more specific

theoretical strategy such as lectures or written assignments. While students "internalise" and "play" with a material, they are also developing a broader understanding of it, which benefits them in a variety of ways. Students cannot get success just via the consumption of textual materials or visual media; rather, they must experience it directly. In terms of education, Dalcroze Eurhythmics is an approach that prioritise students through students learning- centered (Ismail et al., 2021). The teacher's responsibility is to serve as a mentor to his or her students, aiding them in resolving their own difficulties.

METHOD

This research applied a quasi-experimental design at a primary school in Putrajaya, Malaysia. Quasi-experimental is a type of nonrandomized research broadly used in music education fields (Wahyudi, Neviyarni & Irianto 2019; Öztürk & Can, 2020). To approach respondents, permission from the school authority was obtained prior to the execution of this research. A research sample comprised 70 Year 3 students aged nine years old who only learn music at school during Music Education periods. The selection process was through discussion with school administrations and the homogeneity of it consisted of 39 male students and 31 female students. The respondents were divided into two groups: 35 students in the experimental group and 35 others in the control group. These students do not attend intensive music classes outside school hours. The number of this research sample was determined by referring to Roscoe (1975) who stated that a suitable sample number for experimental research is 30 students or more.

Research Procedure

Students involved as respondents were taught how to play *kompang* using the Eurhythmic approach for 12 weeks. The researcher attended the school and taught the students for 30 minutes weekly amounting to 12 sessions. A pre-test was conducted in the first week of the research. Students were advised not to attend extra music classes during the research period. This was to avoid interference of variables in this research. The song entitled ‘Azam Baru*’* was used during the process of teaching and learning whereas the teaching aids used were a laptop, speaker and *kompang*. Activities were outlined based on Ismail, Loo, and Anuar (2021) integrating individual and group rhythmic activities. In the 12th week, a post-test was given to the respondents whereby each student was tested individually in a special room. The skills performed by the students were recorded. Teaching activities were planned by combining the principles of Rhythmic Movement encompassing space, time and energy (Dalcroze, 2013). Other than that, this activity was also organized by involving Dalcroze’s pedagogical components which are reaction, memory, inhibition, and senses as recommended by Mead (1994). Musical coordination activities that combined singing and kompang playing are shown in Figure 1.

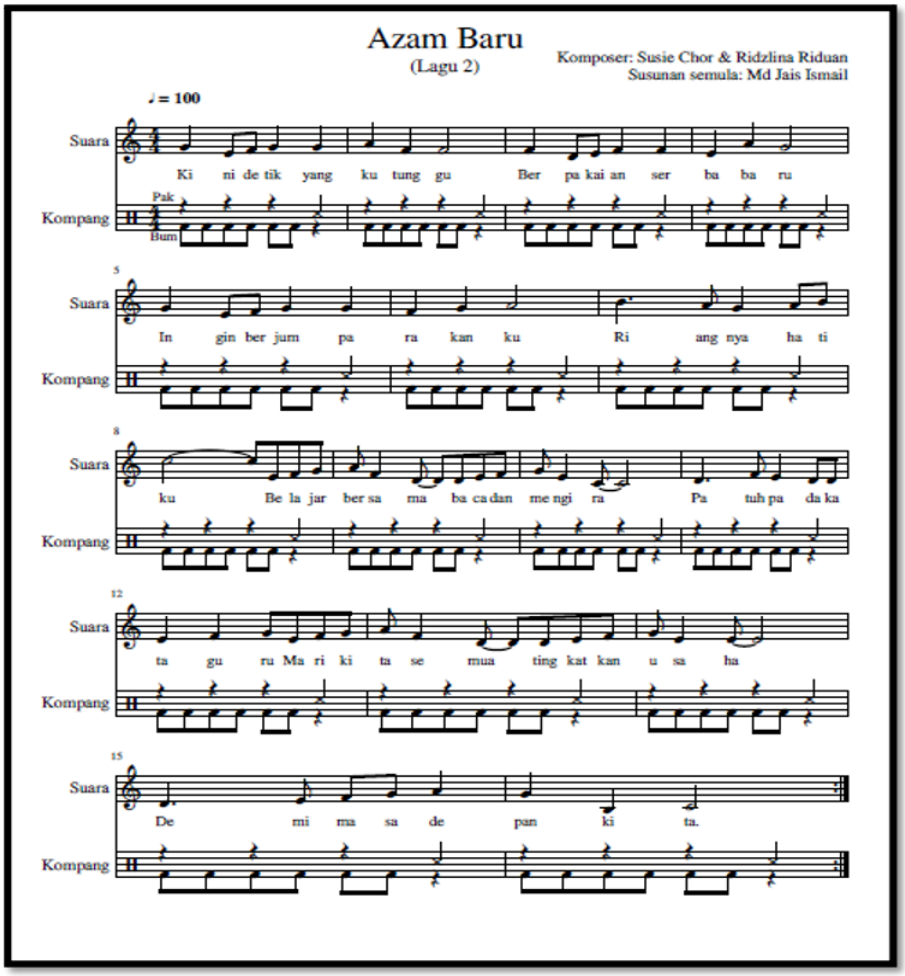

Figure 1
Score coordination of singing and *kompang* playing

Data Collection

Data were collected through practical music tests on the respondents. These were evaluated by three panels with knowledge in the field of music. Thus, one scoring scheme was provided to evaluate the skills performed by the students. This scoring scheme was developed by the researcher, closely referring to the content and format in scoring criteria from The Associated Board of The Royal School of Music (ABRSM) and Standard Performance Document (*Dokumen Standard Prestasi*) used by the Malaysian Ministry of Education, including the grade system used widely in Malaysian schools. Both criteria were used as they are equally established in Malaysia to measure

music performance among children. The grading system used was as the one effective at the current time for Malaysian primary schools, i.e. Grade A: excellent, ranging between 80 to 100; Grade B: good ranging between 65 to 79; Grade C: satisfactory ranging between 50 to 64; Grade D: reaching minimum level ranging between 40 to 49 and grade E: yet to achieve minimum level ranging between 0 to 39. Instruments developed were reviewed and certified by three music experts. The data were analysed using the IBM Statistical Package for the Social Sciences (SPSS) Version 23.

To ensure that the data were normally distributed, Shapiro-Wilks test (p-value = 0.1411) and Skewness-Kurtosis test (p-value = 0.983) was conducted. The reliability test of alpha Cronbach ($\alpha = 0.82$) showed that a very good reliable instrument was used (Sekaran & Bougie, 2010).

FINDINGS AND DISCUSSION

Marks collected from the music practical test and data were analysed using the descriptive and inferential statistical method. Researchers tested all four hypotheses in this study.

The study confirmed that there is no significant difference in terms of the musicality between both groups. Based on Table 1, it was found that students' scores in both research groups were similar. The control group's score (M=59.8, SD=9.1) is close to the experiment group's score (M=58.1, SD=8.9). Referring to the primary school's grade system, the students' achievement level was Grade C which is satisfactory as shown in Table 1.

Table 1
Descriptive statistics pre-test score

Group	N	M	SD
Control	35	59.8	9.1
Experiment	35	58.1	8.9

It was found that there is no significant difference between the achievement scores of control and experiment groups. This indicates that there is no significant difference in music coordination achievement scores at the initial stage of research in Table 2.

Table 2
Statistics of independent samples test

			95% confidence	
F	Sig.	t	Lwr	Upr
0.15	0.43	0.8	-2.58	6.01

According to Table 3, it was found that there is no significant difference in coordination skill of singing and playing *kompang* (t=-0.09, sig=0.92, p>0.05) in pre and post-test for the control group. Since the significant value was greater than alpha at 0.05 level of significance, there was not sufficient evidence to accept the hypothesis. It can be concluded that there is no significant difference between pre-test and post-test scores in the control group. Based on the primary school's grade system, it was revealed that students' score grades in the control group showed no increment from pre-test to post-

test which means they remain at Grade C (satisfactory). It indicates there is no significant difference of music coordination scores for control group students who used the conventional method.

Table 3
Statistics of paired sample for control group

Variables	N	M	T	df	Sig.
Pre-test	35	59.8	-0.09	34	0.92
Post-test	35	59.9			

H1: There is significant difference in the achievement scores of pre- and post-coordination tests in singing while playing *kompang* skill in the experiment group.

Next, Table 4 indicates that there is a significant difference in coordination skill of singing and playing *kompang* ($t=-8.52$, $sig=0.00$, $p<0.05$) in pre-test and post-test of the experimental group. Since the significant value was lesser than alpha at 0.05 level of significance, there was sufficient evidence to accept the hypothesis. It can be concluded that there is a significant difference between pre-test and post-test scores in the experiment group. According to the primary school's grade system, it was observed that students' score grades in the experiment group improved from pre-test to post-test from Grade C to Grade B. It indicates there is a significant difference in the music coordination scores for the experimental group students who received the Dalcroze approach.

Table 4
Statistics of paired sample for experiment group

Variables	N	M	T	df	Sig.
Pre-test	35	58.1	-8.52	34	0.00
Post-test	35	69.7			

H2: There is significant difference in achievement score post-test between the control and experiment group.

In Table 5, it is shown that students' score in both groups is different. The control group's score ($M=59.00$, $SD=10.40$) is different from the experiment group ($M=65.23$, $SD=8.32$). Based on the primary school's score grade system, the achievement level of control group students is Grade C (satisfactory) whereas that of the experiment group is Grade B (good).

Table 5
Descriptive statistics of posttest score

Group	N	T	SD
Control	35	59.00	10.4
Experiment	35	65.23	8.32

H3: There is significant difference in the achievement score between the control and experiment group.

Based on Table 6, the overall experimental group ($M = 65.23$, $SD = 8.32$) obviously scored higher than the control group ($M = 59.00$, $SD = 10.4$). Based on the results of

independent samples t-test, t(34) = -5.27, p = 0.00, 95% CI [-10.72, -1.74], since the significant value was lesser than alpha at 0.05 level of significance, there was sufficient evidence to accept the hypothesis. It can be concluded that there is a significant difference between the achievement scores of the control and experiment groups. It is also indicates there is a significant difference between music coordination scores among students in the Dalcroze experimental group and the control group.

Table 6
Statistics of independent samples for the both groups

Variables	N	M	T	df	Sig.
Pre-test	35	58.1	-5.27	34	0.00
Post-test	35	65.2			

DISCUSSION

Upon completion of the research, the result shows that eurhythmics is significantly effective as an intervention for primary students to enhance the skill of coordination in singing while playing *kompang*. The statistical tests findings presented demonstrate that this approach better than the conventional approach to increase students' level of achievement. Based on these findings, it is proven that the eurhythmic approach is suitable for teaching musical coordination.

The novelty of this study is to highlight music coordination skill as a new field in music education. It has introduced a new finding on how primary students can reflect on this skill using the Dalcroze Eurhythmics approach which was effective in raising students' achievements in skills both of singing and *kompang* playing. Through students' active participation during eurhythmics activities, a passive music class can be transformed into an interactive student-centred environment. In contrast, the control group did not show any improvement as results indicate marks from the pre-test are similar to those post-test. Both test results were C grade. This demonstrates the conventional approach is ineffective in treating the problem.

Advancing from the research result, these current findings have enriched the scope of Dalcroze's approach. Previous research and theories have mentioned that the eurhythmic approach is used to improve the methods of teaching music, movements, playing musical instruments, vocals, musical therapy and dances (Juntunen, 2002; Johnson, 1993). Through this research, is was tested and proved that the intervention of the eurhythmic approach does improve the coordination of two musical skills. The present study is aligned with Ismail et al. (2021) indicating Dalcroze as an effective approach to cater for students' music coordination issues.

Teaching the combination of two musical skills is also the emphasis in this research. Previously, musical skills were taught separately but through this research students were able to learn to coordinate two musical skills that will benefit them. This was agreed by Holland et al. (2018) and Furuya and Altenmüller (2015) who explained that the coordination of musical skills will strengthen an individual's musical skills whereas Murimi (2016) stated that it can enhance focus. The eurhythmic approach was used as a

mechanism to make musical coordination skill smooth and easy to be learnt in the class or during music performance. This is surely very important for students' development and subsequently able to support their learning in school.

This method of teaching the coordination of musical skills will save teachers' time and energy. Teachers who employ the conventional approach in teaching musical skills separately will need more time to master the skills. For example, a teacher who teaches the skills of singing, percussion playing, theories, and art projects will require approximately 10 weeks to allow space and time for music teachers to focus on other matters such as keying in students' marks, compiling lesson plans and managing students' performance. Additionally, by using Eurhythmics as a teaching approach, teachers will indirectly strengthen students' musical skills in the aspect of movement.

From this study, we also found that the concept of music coordination is beyond expectation. It not only focuses on the movement of some body parts, but it integrates musical concepts and children's cognitive skill. Children played *kompang* while trying to coordinate the rhythm with their singing which needs strong concentration throughout the process. This is related to Ismail et al.'s (2021) finding that music coordination or simultaneous music playing can improve the cognitive ability of an individual. This happens when brain parts, such as the anterior paracentral lobule and posterior parietal cortex, are connected and activated. Ismail, Anuar, and Kamis (2020) provide a thorough picture of how the cortical structures that partake in audio–motor coordination can improve coordination between a child's auditory and motor skills. Therefore, we have developed a basic model of music coordination based on the present study's result with supports of previous research, as shown in Figure 2.

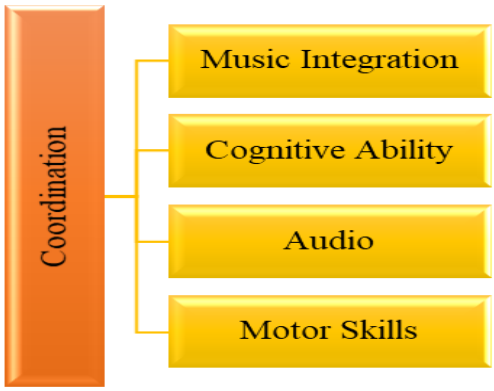

Figure 2
The basic model of music coordination

Furthermore, the importance of music coordination not only applies to an individual but also to a group of individuals as it improves discipline and cooperation among students. This was proven when students did the activity, cooperating to complete the tasks and helping each other to solve problems such as how to make the best group performance, how to apply the musical concepts in the music performance, and how to help weak

members in the group. In the process, they had the opportunity to interact with their friends to play accordingly, follow the music tempo, and notice when they were out of music alignment. It also develops leadership skills among them when they are playing instruments or singing conducted by a leader. This correlates with Nik and Aida (2014) that music activities have a powerful effect on the behaviour of students which affects students' interest and spiritual and emotional involvement. Rhythmic activities could be infused in the music curriculum to nurture a spirit of striving, self-discipline, and self-confidence among students.

Moreover, results from this study indicate that the outlined musical activities influence students' levels of creativity and attitudes towards cooperation. It engages students to foster cooperation among them, improve social skill and minimizes the chance of someone being left out during musical activities (Tersi & Matsouka, 2020; Jacobs & Hall, 2002). The study also hopes to benefit children not only from a musical perspective but also the overall importance of their physical coordination, as stated in the research of Doloma, Kambas, Aggeloussis, and Michalopoulou (2020).

CONCLUSION

Musical learning based on Dalcroze's Eurhythmics is seen as still relevant in 21st-century learning. It prepares students to face current challenges from the aspects of mastering speedy and fun learning skills. The idea of the present study emphasize the idea of every child deserve high quality of education. The current frequent challenge of music in schools today is that students are required to perform a perfect music at short notice. Thus, Dalcroze's Eurhythmics should be able to speed up and ease students' mastery in musical skills compared to the conventional methods used. This is proven by this research which found students were able to master singing skills while playing *kompang* after only 12 sessions of learning using Dalcroze's Eurhythmics approach. The researcher suggests that the eurhythmic approach is given emphasis in primary schools. Teachers should be encouraged to use more eurhythmic activities in class as well as co-curricular activities to create a more active and fun class atmosphere. These activities can be accompanied with local songs and the use of traditional musical instruments such as *kompang*, *rebana*, and *gendang*. The ministry of education could also provide exposure and training related to eurhythmic activities specifically to teachers such as arranging courses and workshops in schools, teachers' institutions or education departments. The researchers believe that students' potential and musicality can be nurtured through a eurhythmics-based musical teaching approach, at the same time to promote cultural enrichment through music learning in primary school. Although this research provides findings to certain extent, one of the limitations is the short duration of the experiment. The longer duration of the classes that allows the researcher to observe the practical assessment may present more clarity towards the result. The level of discipline among students could also affect the implementation of the experiment at times. Therefore, we suggest a more comprehensive research in the future involving children from rural and urban areas, and applying other research approach such as correlational research, action research, and case study.

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