

The layout of instruments in the context of teaching strategies and performance of Balinese gamelan music at the University of Canterbury, New Zealand

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This article addresses the role of the layout of the instruments in rehearsal and on stage as a factor to help achieve the goal of *nabuh* with the University of Canterbury gamelan group. It is focused on how the layout of the instruments effects the learning and performing process. No literature on this topic was located and the terminology and concepts used in this paper have been developed for the purpose of this research. This study was guided by a qualitative case study approach using data that was collected through questionnaires, interviews and participant observation. Based on the findings, the exploration of the layout of the instruments offered various alternatives in assisting coordination among musicians in rehearsals and performance contexts and contributed to the achievement of the goal *nabuh*.

Keywords: layout of instruments, rehearsal, performance, nabuh

Tata Letak Instrumen dalam Konteks Strategi Pengajaran dan Pertunjukan Musik Gamelan Bali di Canterbury University, New Zealand

Artikel ini membahas peran tata letak instrumen dalam latihan dan pentas sebagai faktor mencapai tujuan *nabuh* pada kelompok gamelan University Canterbury. Hal ini difokuskan bagaimana tata letak instrumen tersebut mempengaruhi proses pembelajaran dan pertunjukan. Tidak ada literatur yang ditemukan tentang topik ini dan terminology dan konsep yang digunakan dalam tulisan ini telah dikembangkan untuk tujuan penelitian ini. Penelitian ini dipandu melalui pendekatan studi kasus kualitatif dengan menggunakan data yang dikumpulkan melalui kuisioner, wawancara, dan partisipasi observasi. Berdasarkan temuan penelitian, eksplorasi tata letak instrumen menawarkan berbagai alternatif dalam membantu koordinasi antar musisi dalam konteks latihan dan pertunjukan serta berkontribusi pada tujuan *nabuh*.

Kata kunci: tata letak instrument, latihan, pertunjukan, nabuh

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INTRODUCTION

This topic is part of the research project, entitled “*Melajah Nabuh: teaching Balinese gamelan within the context of the University of Canterbury, New Zealand*”. A literal translation of *melajah* is “learning” and *nabuh* is a term which encompasses most aspects of the aesthetic of Balinese gamelan music. *Nabuh* derives from *tabuh* (a composition or a song), and refers to the ideal manner in which music should be performed. *Nabuh* includes concepts of tonal quality, rhythm, melody, form, style, character, and ensemble cohesiveness. To achieve *nabuh* is the goal of every gamelan ensemble whether in Bali or overseas. *Nabuh* is to achieve the essence of the music, a state in which the elements contributed by each of the instrumentalists becomes one. In other words, the sound of gamelan moves beyond music with a spiritual and charismatic dimension to create the unique spiritual world of Bali.

Among the studies of Balinese music pedagogy, a great deal of attention has been paid to traditional teaching methods applied to music gamelan students in Bali and beyond. Various terms are also used to describe the way that Balinese music is taught and learned. Many scholars recognise that Balinese music pedagogy is rote learning that is based on an aural and visual experience. They provide various descriptions—repetition, imitation, aural/oral tradition, enculturation, *meguru kuping* and *meguru panggul* (McPhee, 1944; Eiseman, 1989; Tenzer, 1991; Bakan, 1993/1994; Kitley, 1995; Dunbar-Hall, 2008; Khalil, 2009; Angelo, 2012; Sudirana, 2018). Additionally, Brashier considers that the transfer of musical knowledge in Balinese music is embodied through three paths: visual—the instructor’s gesture; auditory—the role of auditory sense, and; tactile—the tactile stimulation of the playing of the instruments (Brashier, 2013). This style of music education encourages holistic learning with an absence of music notation and formal analysis.

It can be assumed that the central focus of these studies portrays teaching and learning music as engrained within society and as nurtured experience. Most researchers used ethnographic approaches and focused on Balinese students to observe music transmission. In addition, their focus discussion is mainly on the teaching methods and teachers’ or students’ attitudes during the learning process.

However, no literature on the role of the layout of the instruments in rehearsal and performance was located. Therefore, this paper is presented to explore other potential teaching strategies in gamelan music and the terminology and concepts used in this study have been developed for the purpose of this research.

It should be noted that the UC gamelan members consist of two groups of students, those from the community and those who are enrolled at the University. They came from various countries such as New Zealand, Malaysia and Indonesia. Fifteen members joined the class and most of them were unfamiliar with Balinese music and had no prior instruction. It was challenging for the teachers to determine teaching approaches since the participants arrived with a variety of musical abilities and knowledge of Balinese music. Thus, we had to continually renegotiate the difficulty level of each piece, the instruments requirements, and specific teaching strategies applied.

The purpose of this article, therefore, is to investigate how the layout of instruments influences the possibility of achieving the goal of *nabuh*. This study demonstrates the traditional teaching methods and the instruments’ layout as a new teaching approach in Balinese music pedagogy. We used a gamelan Gong Kebyar during this research. However, not all of the instruments were involved. We focused on the percussion instruments except for *reong* and *terompong* (a set of gong pots that functioned as an elaboration and melodic instrument).

The Balinese gamelan Gong Kebyar

In Bali, there are many kinds of ensembles involving different types and quantities of instruments. The University of Canterbury gamelan is called Gong Kebyar and typically has 25 instruments and musicians. The instruments include metallophones with thin bronze keys (*ugal*, *jublaga*, *jegogan*, *gangse pemade*, and *gangse kantikan*), bronze gong idiophones (*gong*, *kempur*, *terompong*, *reong*, *kajar*, and *kemong*), barreled-shaped drum membranophones (*kendang*), bamboo flute aerophones (*suling*), and Balinese viol chordophones (*rebab*). Most instruments of Gong Kebyar ensemble are also tuned in pairs (see figure 1). The lower of the pair, called *pengumbang* is slightly lower in pitch than the upper one, which is called *pengisep*.

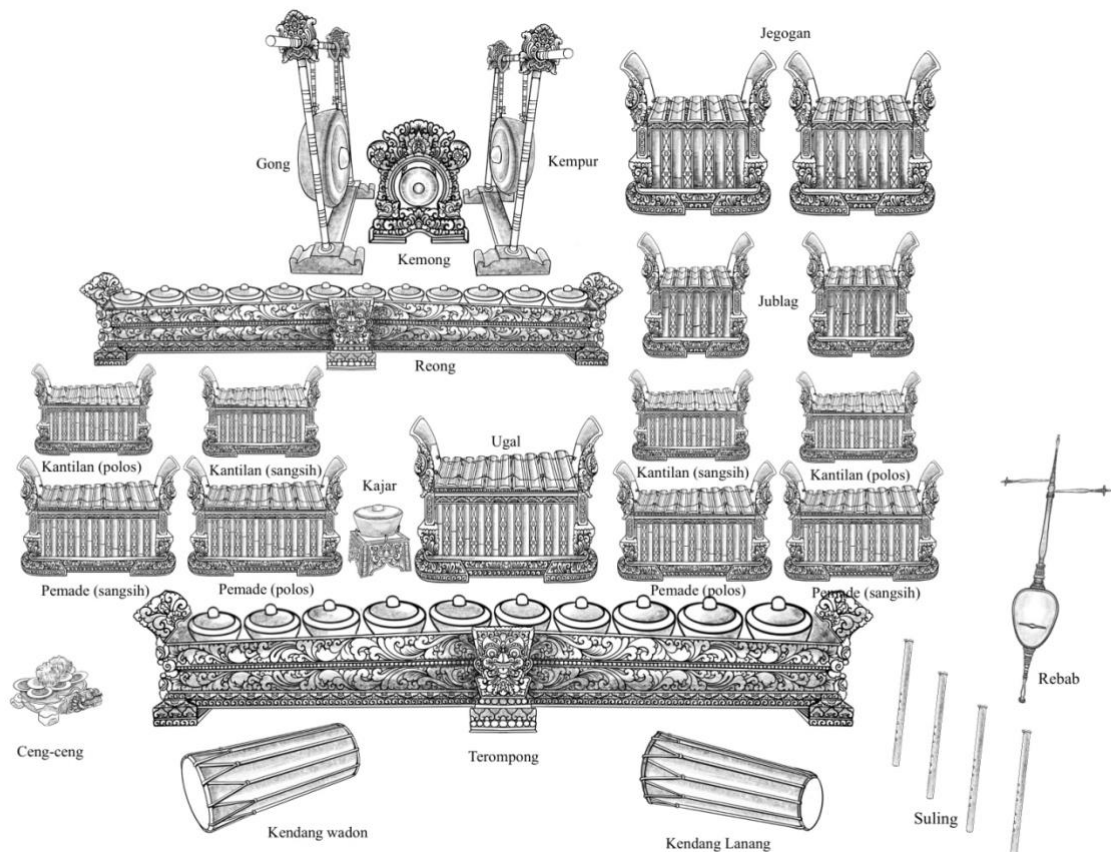


Figure 1. The Gong Kebyar ensemble

The instruments of Gong Kebyar ensemble are divided into four functional groups; melodic, elaborative, colotomic, and rhythmic. The instruments that play the basic melody include *ugal*, *trompong*, *jublaga*, *jegogan*, *suling* and *rebab*. The *gangse pemade*, *gangse kantilan* and *reong* are known as elaboration instruments. These instruments usually play *kotekan* or *kekilitan* (syncopated patterns) based on the basic melody. The *kotekan* consist of two parts; *polos* which is usually played “on-beat” and *sangsih* complements the *polos* by playing off-beat. The *gong*, *kempur*, *kemong*, and *kajar* are colotomic instruments which mark the internal melodic divisions, the beginnings and endings of the cyclic melodies. The rhythmic vitality which includes queuing, accenting, and dynamic changes is provided by the *kendang* while the *cengceng* provides additional accents.

STUDY DESIGN AND METHODS

This study was guided by a qualitative case study approach. According to Yin (2014), case study design is appropriate for investigating contemporary events or phenomenon within its real-life context and enable when the focus of the study is to answer

“how” and “why” questions that are the reality of the students in the classroom. This provided an understanding of the students' behaviour during the teaching-learning processes and to understand how the traditional teaching style can be negotiated to find an effective way in teaching Balinese music to students at the University of Canterbury.

Participants

Participants were students who were enrolled in the UC course or were participating as community members. In addition, previous teachers, who had experience working with UC gamelan were also involved, to provide another perspective.

Data Collection

The data was collected through questionnaires, interviews and participant-observation. The students' questionnaires were conducted through three stages: pre-course information (before the semester starts), mid-course information (at the end of first semester), and post-course information (at the end of second semester or performance). The students' questionnaires were conducted through three stages: pre-course, mid-course, and post-course. Semi-structured interviews were conducted

with students and previous teachers while participant-observation was held during each class. To obtain the data regarding layout of the instruments, some issues were explored through the questionnaires and interviews.

Data Analysis

Three main steps guided the data analysis process: transcription, organisation, and identification of the themes. After the data from the interviews was transcribed, all of the data including the data questionnaires and data observation was analysed using a tool, called NVivo (the computer data analysis software). This activity included managing the data source, creating memos, assigning codes, combining and assembling codes under a category or theme. Following the focus of this project, initiatory themes were derived for the main issues of the study while additional themes emerged from the data. The themes analysed in each individual case and across different cases were shaped into a general description.

FINDINGS

The findings of this study show the importance of the layout of the instruments in rehearsal and on stages as a factor to help achieve the goal of *nabuh*. It focuses on how the layout of the instruments

affects the process of learning and performing. During the year, we were surprised to find that changing layout of the instruments during rehearsal offered considerable scope for facilitating the learning process.

The findings concerning the various models of the layout of the instruments fit into two categories: rehearsal and performance. Not all of the 25 instruments in the Gong Kebyar ensemble were used in these models since we had only 15 students who joined the group in 2020. The layout of each model was focused mostly on the elaboration group. As mentioned before, this group is responsible for playing the two different rhythmic patterns intertwined simultaneously (*kotekan*). Learning *kotekan* involves memorising difficult motifs and playing in a fast tempo. Therefore, an appropriate layout of the instruments was needed to help them learn the music quickly.

Throughout the year, four different models of instrument layouts were trialled. These models were named: 1) Classical Model, 2) Sectional Model, 3) Opposite-sectional Model, and 4) Composite Model (see table 1).

Table 1. The application-timeline of the four models in rehearsal*

	Feb				March				April					May				June				July					August				Sept				Oct				Nov											
Model	Week				Week				Week					Week				Week				Week					Week				Week				Week															
	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Classical																																																		
Sectional																																																		
Opposite-sectional																																																		
Composite																																																		

* The gamelan practices were canceled during the Covid-19 lockdown period (from the end of March until June 2020).

In order to facilitate student learning during class, the core melody of the piece was notated on a whiteboard for the melodic instruments as well as their structure. The pitches were presented with

numbers (1, 2, 3, 4, and 5) in which the order was based on the keys position of *jublag* or *jegogan*. The following figure is an example of the notation was used in gamelan rehearsal:

Gambang Kute

A. *Kawitan* (intro)

started by *Cengceng* (cymbals)

<i>Jublag</i>	3	-	4	-	4	-	1	-	1	-	4	-	2	-	3	-
	-	-	1	-	-	-	3	-	-	4	-	1	-	5	4	-
	3	-	2	-	1	-	4	-	5	-	3	-	4	-	2	-
	3	-	1	-	5	-	1	-	5	-	4	-	3	-	4	-
	2	-	3	-	4	-	(5)									

Figure 2. An example of notation

Several parameters were adjusted to decide the optimum layout of the instruments for rehearsal and performance. These parameters were:

- 1) the ability of each member of the group to hear clearly and accurately, the time-keeping instruments alongside the melodic and the partnering instruments,
- 2) the ability of each group member to see other musicians, the instructor and the whiteboard in rehearsal,
- 3) the ease with which the instructor can move around and between the instruments in rehearsal,
- 4) in performance, for the audience to be able to see and hear every instrument and player as well as be positioned to take in the cohesive aesthetic affect of the gamelan as a whole.

These parameters provided a basis for ongoing student comments and instructor experimentation.

Rehearsals

The layout of instruments was considered as a supporting aspect for teaching strategies to achieve *nabuh* for UC gamelan students. Along the programme, the gamelan rehearsals were scheduled twice a week for two hours each on Wednesday and Thursday evenings. During the first five weeks of the first semester, the Classical Model was used as a normal part of the teaching process (see figure 3).

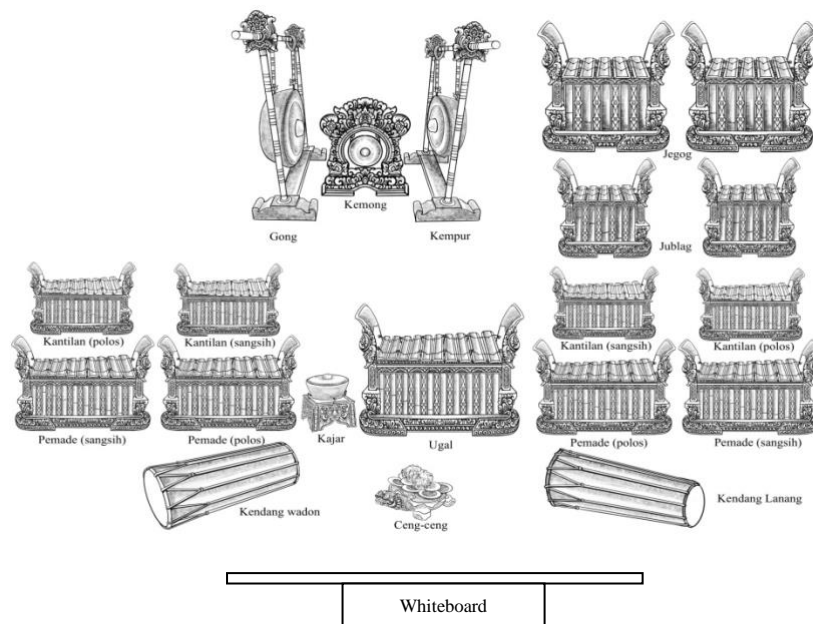


Figure 3. The Classical Model

The instruments in the Classical Model are mostly in line positions with all players directly facing the front. *Kendang* is positioned in the front as well as *ugal* (in the centre). The *gangse pemade* and *kantilan* are situated in combination based on the patterns they play with (*sangsih* and *polos*). The Classical Model is commonly used by Balinese musicians in Bali, both in rehearsals and performances. They believe that this model achieves a unity of musical patterns since the *gangse* players positioned in pairs maintain a musical sensitivity as they play different alternating patterns. In the performance context with music and dance, this model provides an aesthetic view since all the instruments are in line facing the audience while any dancers are in the front.

During that period, the focus was on mainly teaching playing techniques, providing historical context of the music, and preparing the students for the upcoming performances. For these purposes, sound recordings were shared, video links, notation, and teaching units of each piece to help the students learn the music effectively. One of the students expressed:

It was helpful in learning more about the gamelan than simply how to play. It is important for musicians to know the cultural context and Balinese terminology to bring their ability to higher levels and enable them to engage more with the Balinese culture.

Although most students recognised that these materials were useful, they also wanted additional learning support. They commented that the Classical Model was not appropriate for learning a new piece. One of the beginner students commented, “It would be better for us to play in a group with the same pattern, especially in the rehearsal situation. This will allow us to support one another in each group”.

This statement encouraged us to create an appropriate model of the layout of instruments to facilitate student learning. The Classical Model has

been used in teaching-learning and performing gamelan music in Bali since the 1980s and was in use for many years before. The first photographic evidence of the layout of instruments was in the 1930s (Collin McPhee, 1944) which shows the Classical Model. Taking into consideration student comments and our perception of the situation, therefore, we developed the Sectional Model and it was applied in the beginning of the second semester.

The layout of instruments in the Sectional Model was similar to the Classical Model. However, in this model, the *gangse pemade* and *kantilan* were grouped based on their pattern (*polos* and *sangsih*). They were divided into two groups—one group was positioned in the left of *ugal* while the other was on the right side. This model facilitated those who were playing the same pattern to reinforce each other (see figure 4). For example, the teachers frequently teach the music from a position facing opposite the *gangse pemade* players. The *gangse kantilan* players, who sit behind the *gangse pemade* players usually follow and imitate the pattern played by *gangse pemade*. At this point, playing the same pattern together was much easier for them. Also, this model helped players who had to struggle with the beat when they were playing *kotekan* (syncopated patterns). One of *gangse pemade* (*sangsih*) players commented:

In learning difficult pieces, it mostly helps for like all the *sangsih* players. If one does't know but one knows a bit better, they can watch and teach each other. If they are separated they can't see each other and they sort of having to rely on you [the teacher] always coming over to help them.

This student's comment is in line with Pamugkas and Utomo's statement which reveals that “Playing music in groups requires group interaction which requires students to communicate and pay attention to each other and even help each other” (Pamungkas & Utomo, 2022: 162). Furthermore, this relationship creates a conducive learning atmosphere and encourages students to have compassion, conscience, and commitment.

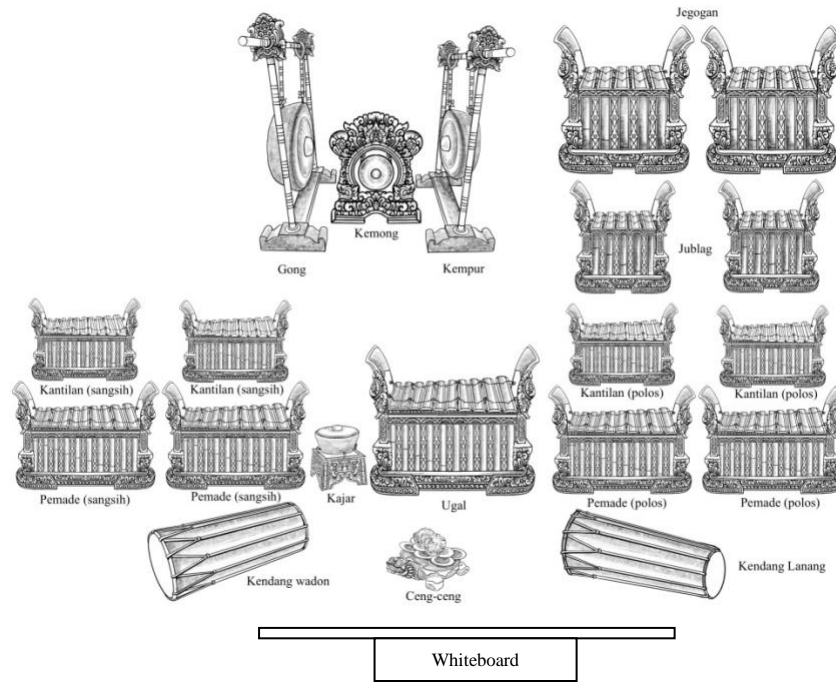


Figure 4. The Sectional Model

A few weeks after the application of this model some challenges appeared. The *kantilan* players said that they could not see the notation written on the whiteboard since the *pemade* players hindered their views. The same issue occurred also in the previous layout i.e. the Classical Model. Indeed, when they were learning the piece with a long melodic line, the notation written on the whiteboard was frequently used by the *gangse* players (especially the *polos*). In fact, the notation helped them to learn the *kotekan* since they recognised the melody and understood the structure of the piece. In addition, the *gangse* players experienced difficulties when they were encouraged to play the pattern (*polos* and *sangsih*) simultaneously since they played different patterns and it was different to synchronise. In addition, they were unaccustomed to playing next to one another. This was reasonable considering that the *polos* and *sangsih* patterns must interweave in order to perform the *kotekan* accurately.

During the first three weeks of the second semester, we focused on the issue facing the *kantilan* players. Therefore, the Opposite-sectional Model was developed to resolve any problems. This model allowed the *kantilan* players to view the notation on the whiteboard as well as to follow and copy the *gangse pemade*. In addition, coordination between the two separate groups playing different patterns *polos* and *sangsih* became easier.

In the Opposite-sectional Model, the *gangse pemade* and *gangse kantilan* that played the same pattern (*polos* or *sangsih*) were grouped together facing each other while *kendang* and *cengceng* were positioned in the centre. *Gong*, *kempur*, *kemong*, *jegogan*, and *jublag* remained in the back (see figure 5).

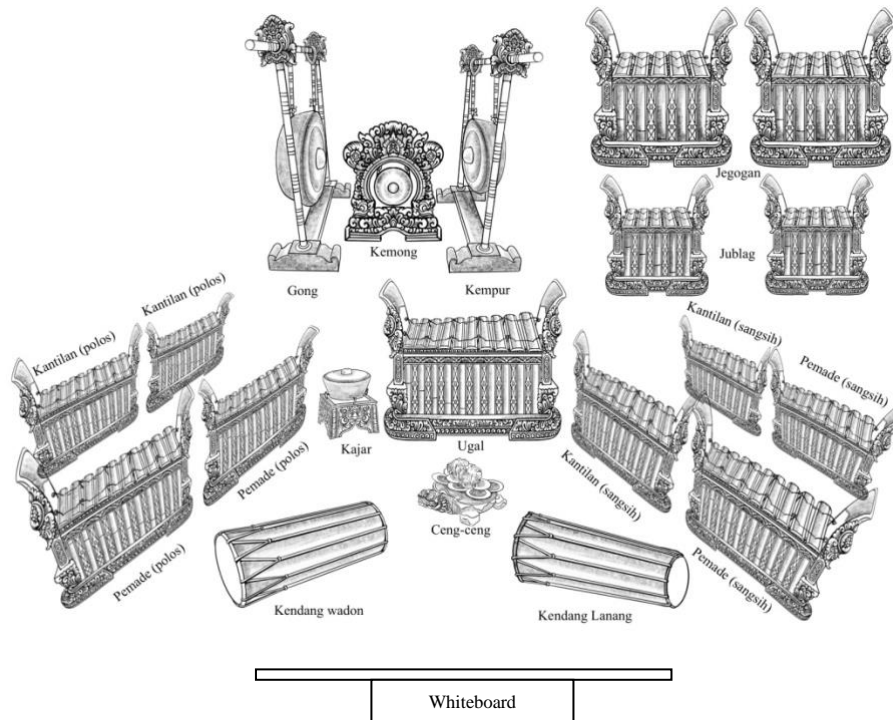


Figure 5. The Opposite-sectional Model

Although the Opposite-sectional Model had been able to overcome the problems faced by the *kantilan* players, other issues remained. As occurred in Classical and Sectional Model, this model inhibited the free movement of the teacher between the instruments and players. It also created difficulties for the *polos* and the *sangsih* group since they were separated apart from one other on the two different sides of the gamelan. In relation to achieving the unity of musical patterns, both the Opposite and the Sectional Model were not appropriate. The splitting of the *polos* and *sangsih* patterns produced inequality of sound.

In order to determine the most appropriate model for resolving these issues, we created the Composite Model. The Composite Model places *gangse pemade*, *gangse kantilan*, *ugal*, and *kajar* in a U-shaped formation (see figure 6). The *gangse pemade* and *gangse kantilan* (*polos* or *sangsih*) are not grouped together, but are positioned across from each other. The *kendang* and *cengceng* remain in the middle, while the *gong*, *kempur*, *kemong*, *jegogan*, and *jublaga* remain in the back.

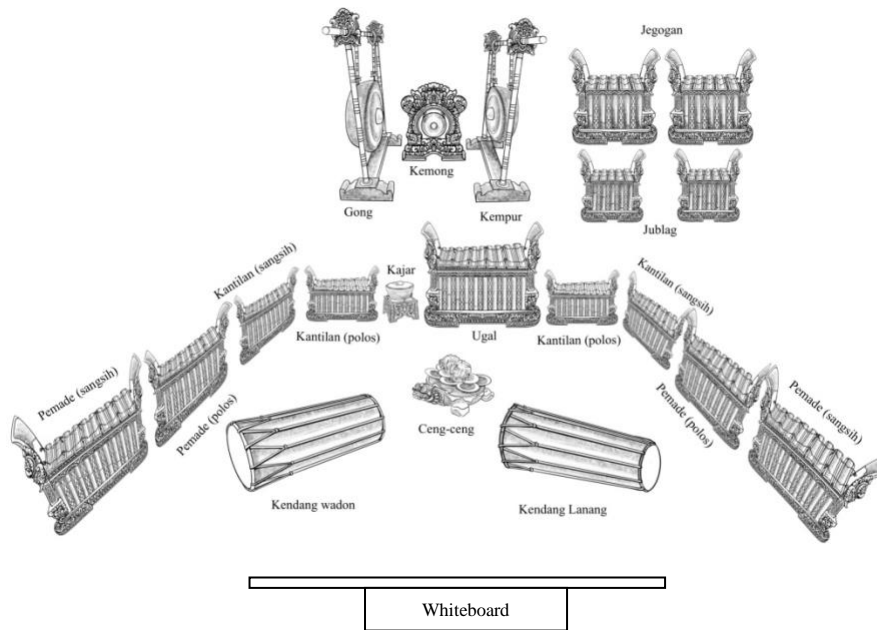


Figure 6. The Composite Model

This model helped all *gangse* players to see the whiteboard and make contact with one another. In addition to gaining available space to serve the *kantilan* members, this model allowed the tutor to help other players (see figure 5). The layout of the instruments on this model facilitated more teacher-student interaction. In addition, it encouraged the *gangse* players to improve their individual skills playing *kotekan* because they were able to play next to each other.

The majority of students realised that the Composite Model helped them to learn the music effectively – based on the survey, 95% students commented that the model was very effective.

Performances

There are many aspects that are typically involved in creating a successful music ensemble. Campbell concludes:

Ensemble performance may be viewed as a composite that is more than the sum of separate musical parts. The quality of the individual instruments or voices, the interdependence of multiple musical ideas sounding simultaneously, and even the personal interactions of performers affect the ensemble's performance. An understanding of one's own musical part as well as an awareness of its relationship to other parts may

be most distinguishing feature of ensemble music. Meaningful ensembles performances are products of individually skilled musicians (Campbell, 1991: 245).

The Balinese gamelan music performance is a collective activity comprising many types of instruments which are played by a group of musicians. Performing gamelan music requires tight coordination among the musicians because there is no conductor that stands in front of the ensemble on an elevated platform and waves his/her arms to keep ensemble on the same pulse as in a Western orchestra. In the Balinese gamelan, one or two musicians (*ugal* and/or *kendang*) frequently lead the performance while performing on their instrument. For example, *ugal* provides cues for starting a piece, to guide the melody, lead the dynamic changes, and to give signals for terminating the piece. Further, *kendang* provides cues for dynamics, accents, and tempo changes. *Ugal* and *kendang* are necessarily placed in the front or centre to facilitate these roles. This central position allows other musicians to see both of them.

In relation to performance context, Kusumastuti et al. reveal that the pattern of performers' interactions within the group of musicians and dancers and between musicians and dancers has an important role in the success of the performance (Kusumastuti

et al., 2020). Although there is no explanation about the form of interaction that they proposed in their article it has related to the Balinese performing arts situation including music, dance and theatre.

The layout of instruments in the ensemble is an essential aspect of gamelan music performances. It is essentially related to aesthetic considerations—both aural and visual. The layout is designed to achieve the wholeness of the interlocking musical patterns, the unique instruments' sound, and the intensity of music in the ensemble. Gamelan performance involves the visual expression of the instruments, how they are played and the overall auditory experience. In relation to other visual aspects, most gamelan instruments are made in unique cases with colorful carvings and paintings. The carving motifs include *karang daun* (leaves), *karang sari* (sari), *karang goak* (thunderbirds), *patra cina* (Chinese motifs), *patra mesir* (Egyptian motifs), *patra kakul* (snails motifs), *patra wayang* (puppet motifs), and others.

During performances in 2020, we applied three layout models Classical, Sectional and Composite Model, depending on the particular setting of each situation. These considerations include:

- 1) the limited number of performances throughout the year,
- 2) The UC gamelan conducted only three performances during 2020; Gala Music Festival at the Piano, Selwyn Cultural Festival in Lincoln, and a Recital Performance at Tauranga Library.
- 3) the availability of space on stage,
- 4) It should be noted that each instrument is around one metre in length. With up to 15 instruments on the stage at one time, they occupy a significant area. The applications of the model in these performances were adjusted based on the availability of space.
- 5) the length of the performances,
- 6) The performance at Gala Music Festival and Selwyn Cultural Festival were 10 – 20 minutes length and the Recital Performance was 45 minutes.

At our first performance at the Gala Music Festival, we used the Classical Model. This model was adapted from the model that frequently used in Bali. Also, this model was applied a few weeks during the

rehearsals proceeding the performance. The Sectional Model was used in the second performance, Selwyn Culture Festival. Finally, the Composite Model was utilised on the third performance, Kartawan's DMA recital. From the students' perspective, the discrepancy of using the layout of the instruments on the rehearsals and performances did not effect their confidence.

There were different perceptions among the students for utilising the three models in the performances. Most students preferred to use the Composite Model since that this model facilitated interactions during the performance. It was important to allow musicians to hear the instruments' sound clearly while being able to see their fellow musicians. This was equally important for the audience to be able to see all of the musicians and to hear the music clearly. However, not all students regarded that the interaction was the most essential aspects in Balinese music performance. One of *gangse* players revealed:

The gamelan performance is substantially facing the audience. It is nice to play in line-up [Classical Model]. So, we will look like expert musicians. We don't need to see each other. Just play your own pattern.

It can be summarised that students expect that the appropriate layout of the instruments can facilitate coordination during performance, the cohesion and wholeness of musical patterns, the ensemble compactness, and the improvement of individual skills including listening skills, memorising, self-belief, and an awareness of the role of other players. These aspects are in line with the achievement of the goal *nabuh*.

CONCLUSION

This paper has presented the findings on the issue of the layout of instruments of the gamelan learning period. In summary the findings of this research are:

- 1) each layout model had its advantages and disadvantages and a model selected for rehearsal may not be appropriate for performance. However, the Composite Model shows the most potential in rehearsal for UC gamelan group. Perhaps, further work is accomplished to investigate the appropriateness and effectiveness of the other introduction of different models,
- 2) since all the instruments of the Gamelan Gong Kebyar were not involved in this

project, further research is needed to address this issue related to the other instruments and also the transition from the ideal model both in rehearsal and performance,

- 3) the findings of our research only apply to this situation at University of Canterbury which include ourselves as teacher and researcher. As such they cannot be generalised to other situations. However, analysis of the student feedback along with observations during the study demonstrate that the experimental layout of instruments offered promising alternatives to solve the impasse of coordination among musicians in rehearsals and performance contexts. Finally, it is hoped that the findings and discussions will be of interest to other teachers of gamelan and contribute to the pedagogy of gamelan instruction as a new aspect in student learning of gamelan music.

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