

## Examining Scaffolding Process in One-to-One Piano Lessons for Young Beginners: An Observational Analysis

Wong Yiing Siing<sup>1</sup>, Wang I Ta<sup>2</sup>, Mohd. Nasir Hashim<sup>3</sup>

Universiti Malaya

50603 Kuala Lumpur, Malaysia

e-mail: <sup>1</sup>yiings25@gmail.com <sup>2</sup>wangita@um.edu.my <sup>3</sup>drnasirum@yahoo.com

\*Corresponding author: wangita@um.edu.my

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### Abstract

In piano education, the initial stages of teaching young beginners establish the foundation for future endeavours. Due to the necessity of collaborative effort, piano lessons can be a complex process for both the teacher and the student. A balance must be found whereby the teachers can administer information in a way that is compatible with the student's learning style. Therefore, the teacher must adapt their instruction to the level of the student. This exploratory case study investigates how scaffolding process is adapted into piano education in private setting to enhance the learning process of young beginner students. 10 teacher-student dyads, with students ages between 5-7 years, were recruited. Weekly lessons over a span of four weeks were observed and documented. Interviews with participants were conducted to find out more insights on their perspectives of teaching. Video data analysis was conducted based on the three characteristics—contingency, fading of support and transfer of responsibility—from the conceptual model of scaffolding. The findings indicate that two types of scaffolding process were applied in piano lessons—consistent and contingent, with the latter prevailing in most of the lessons. It was also observed that the three characteristics of scaffolding emerges within the same lesson and across several lessons, influenced by students' readiness and response. Whilst there were differences among the contingency strategies used, certain tendencies recurred across the teachers. Among these, modelling stood out as the predominant strategy and that teachers rely primarily on their perspectives and intuition when it comes to scaffolding.

*Keywords:* contingency, one-to-one piano lessons, scaffolding process, young beginners

### Introduction

One-to-one instruction, or private lessons (Kennell, 2002) is commonly used as a mode of instruction in music and piano education (Carey et al, 2013; Coutts, 2019), from a beginner's level, all the way to advanced professional training. The initial stages of teaching young beginners in piano education establish the foundation for future endeavours (Abdumutalibovich, 2020; Isekeeva et al., 2016). This early phase is vital as it moulds the child's perception of music and the creative process as a whole. According to Thomas-Lee (2003), a child's musical experiences during the formative years significantly impact their later musical development, underscoring the importance of effective piano education right from the outset (Isekeeva et al., 2016). The piano teacher plays a central and influential role in the learner's musical journey, serving as a key figure in shaping their overall development and progress (Davidson & Jordan, 2007; Yeh, 2018).

Due to the necessity of collaborative effort, piano lessons can be a complex process for both the teacher and the student. It is crucial to find a balance where teachers can deliver information in a manner that aligns with the student's learning style (Maldjian, 2015; Yeh, 2018). Therefore, one of the fundamental principles of teaching is that the teacher must adapt their instruction to the level of the student. This principle

is central to constructivist teaching, specifically the concept of scaffolding. Based on Vygotsky's work (1978), scaffolding in learning refers to temporary support provided by an adult to assist the child with a task that is just beyond their current level (Granott et al., 2002; Wood et al., 1976). After successful scaffolding, the support can be scaled back gradually to ensure that the child has agency over the learning process.

### Scaffolding in the context of learning an instrument

Scaffolding is pivotal in the learning of an instrument at a young age. Lehmann et al. (2007) state that all early music instruction requires adult intervention, because most children under six years old have yet to achieve a level of competence that allows independent or self-directed study on an instrument. Current literature in music education defines musical development in terms of complex, non-linear, individual trajectories and the influence of various factors and environmental interaction (McPherson et al., 2012). Studies in educational settings (Ensing et al., 2014; Steenbeek et al., 2012) show how complex transactional patterns in teacher-student interaction emerge on the micro-level and contribute to different learning outcomes on the macro-level.

However, from a review of the available literature reflects the lack of detailed descriptions of the real-time processes that occur in music lessons. Küpers, van Dijk, & van Geert (2014) mentioned that this should be a focal point for future research. Based on this suggestion, the current study will explore and describe the real-time scaffolding process that occurs during the music lessons. Although few methods and procedures already exist to analyse the information encompassed within instrumental lessons, they focus on interpersonal and gestural behaviours (Creech, 2012; King et al, 2019; Simones et al, 2015), lesson planning and scaffolding models (Chai & Koh, 2017; Rusznyak & Walton, 2011), motivation and determination outcomes (Küpers, van Dijk, McPherson, & van Geert (2014) and student autonomy (Küpers et al., 2015).

The above literature supports the notion that teaching a piano beginner effectively from the beginning is important for the later development. Relevant literature also indicated that scaffolding is effective in helping students to learn or acquire certain skills. Based on these, it appears that scaffolding in the early stages of piano lesson would be beneficial for a young student. However, none of the studies surveyed in the literature review observed young beginner's piano lessons in the context of teacher's scaffolding. Thus, this study hopes to fill the gap of the literature by observing young beginner's piano lesson and providing real-time descriptions of the scaffolding process that emerges during the private lesson-

### A conceptual model of scaffolding

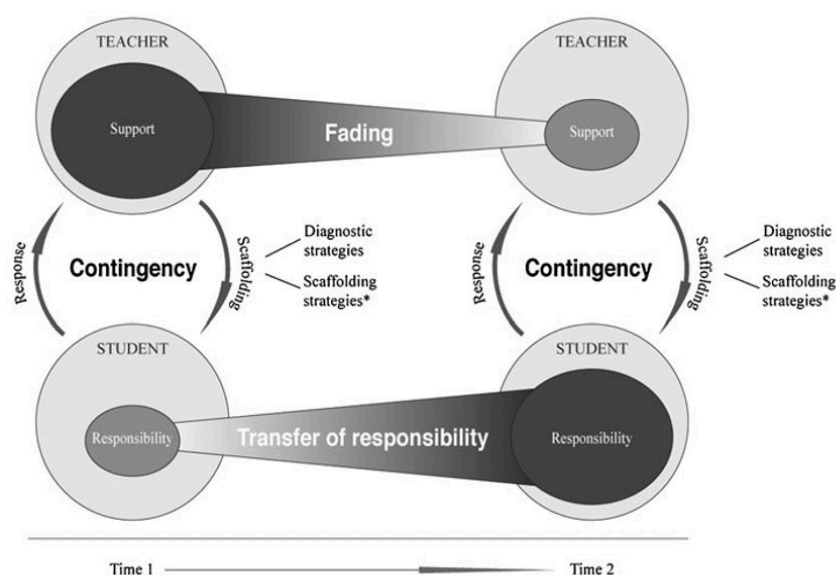


Figure 1. Scaffolding process between teacher and student (adopted from "Scaffolding in Teacher-Student Interaction: A decade of Research" by van de Pol et al., 2010)

The conceptual model of scaffolding (see Figure 1) by van de Pol et al. (2010) identified three key characteristics of scaffolding – contingency, fading and the transfer of responsibility. Contingency is the adaptation of the support to the level of the student. The teacher should be proactive in tailoring their teaching to the level of the student at any point in the lesson (van de Pol et al., 2010; Lajoie, 2005). van Geert and Steenbeek (2005) posit that there is an optimal distance between the level of the teacher and that of the student, which is not fixed as it is subject to the teacher-student dyad. To maintain this optimal distance, teachers adapt their support according to the shifts in the student's performance level.

Diagnostic strategies assist the teacher in providing contingent support. This begins with determining the student's current level of competence to adapt the support provided. Many authors have supported the use of diagnostic strategies in music lessons, referring to it variably as: dynamic assessment (Lajoie, 2005; Macrine & Sabbatino, 2008; Pea, 2004; Swanson & Lussier, 2001), formative assessment (Shepard, 2005), online diagnosis (Palincsar & Brown, 1984), or monitoring and checking students' understanding (Garza, 2009). The second characteristic of scaffolding is the gradual withdrawal of support over time: fading (Pea, 2004). The rate at which fading occurs should be adjusted according to the student's rate of development (van de Pol et al., 2010; van Geert & Steenbeek, 2005). The third characteristic involves transfer of responsibility. With gradual fading, the responsibility for learning is eventually transferred back to the student. In this review, responsibility refers broadly to the students' state at a certain point of learning, be it cognitive, metacognitive, or affective. Successful transfer of responsibility occurs when the student gains agency over their learning process, leading to autonomous competence (Reigosa & Jiménez-Aleixandre, 2007).

In sum, scaffolding is an intrinsically dynamic process occurring over repeated interactions between music teacher and student. For effective scaffolding, these interactions need to be contingent. Over time, a transfer of responsibility occurs as the teacher fades out the level of support according to the student's progress to promote independence. This process is repeated for subsequent sub-goals. This conceptual model of scaffolding will be the analytical framework for this current study.

### **Problem Statement**

Scaffolding in one-to-one piano lessons positively influences student's skill development, confidence, critical thinking abilities, musical expression and autonomy in their musical journey. It facilitates skill acquisition by offering appropriate support and guidance, breaking down complex tasks into manageable steps (Wood et al., 1976). This personalised support enhances students' confidence, motivating them to practice, explore new challenges and achieve musical goals (Bandura, 1997). Furthermore, scaffolding promotes critical thinking and independent problem-solving by gradually reducing support and allowing students to make decisions (Vygotsky, 1978), thus fostering autonomy and self-regulation (Küper, van Dijk, McPherson, & van Geert, 2014). Overall, scaffolding in one-to-one piano lessons has a significant impact on students' musical development, especially in the initial learning (Meissner & Timmers, 2020).

Although scaffolding has shown potential as an effective teaching method, the disparity in the extent of practical application calls for further research to be conducted in everyday educational practice. Existing literature on scaffolding in music education predominantly focuses on teachers/student's behaviours and their contributions to certain forms of learning and motivational outcomes and the application of specific methods conducted in the settings of tertiary education or intermediate/advanced level. Additionally, previous research on young beginners' piano learning mainly centres on the content analysis of method books (Ballard, 2007; Kanaeva, 2021; Rad & Azadeh, 2022; Sung, 2017; Thomas-Lee, 2003).

To date, there is a notable lack of studies investigating the issue of teacher's scaffolding methods in young beginners within the private piano lesson setting. Therefore, it was the purpose of the present study to bridge this gap by investigating and describing the real-time scaffolding process and teaching strategies employed by independent piano teachers in Klang Valley within the settings of private piano lessons. Based on the conceptual model of scaffolding by van de Pol et al. (2010), the specific objectives of this research are: 1) To analyse the dynamic interplay of the three key characteristics of scaffolding – contingency, fading of support and transfer of responsibility – as they manifest in real-time during private piano lessons, 2) To elucidate the specific instructional and scaffolding strategies utilised by piano teachers to facilitate the student's learning during the lesson. The research seeks to answer the following research questions:

1. How do the three characteristics of scaffolding – contingency, fading of support and transfer of responsibility – unfold in the piano lessons?
2. How do piano teachers implement scaffolding strategies to support the student's learning during the lesson?

## Methodology

### Participants

Participants for this research were recruited through mixed sampling (a combination of purposeful and snowball sampling). Purposeful sampling was used to determine the student's inclusion criteria which were determined after a preliminary survey conducted among the teacher participants. The survey results indicated that beginners were typically 5-7 years old, therefore this age range was established as one of the inclusion criteria for student participants. Another inclusion criterion was that students should have less than one year of learning experience to be considered as a beginner. Initially, a number of 5 teacher-student dyads were selected in the first step of the sampling process to establish a foundational pool of individuals with relevant expertise or experience. Subsequently, as the research progressed, additional participants were identified through a snowball sampling approach, leveraging the connections and recommendations of the initial participants. This iterative process continued until a total of 10 teacher-student dyads were included in the study and data saturation was achieved, wherein further sampling did not yield significantly new insights or perspectives. The selected pairs were based on student's inclusion criteria and teachers were good mix representatives of the Malaysian piano teaching contexts. Teaching experience ranged from 3-14 years and teaching backgrounds vary with trainings in various areas such as early childhood music education, group class instruction, Kodaly methodology and elementary piano teaching. Most of the teachers held an undergraduate degree in music, while five out of ten teachers had completed a graduate degree in music. By including teachers with diverse teaching background and experience, this study aimed to gather comprehensive insights into the dynamics of one-to-one piano teaching. Pseudonyms were given to the participants to ensure their anonymity.

### Procedure

The research design of this study is exploratory case study that adopts a qualitative methodology. Naturalistic, non-participant observation was conducted due to its ability to capture authentic and unfiltered interactions within their real-life context (Creswell & Poth, 2018). In the context of the current study, this approach allows the researcher to witness the dynamics between the piano teachers and the student as they engage in spontaneous teaching and learning moments. In addition, the researcher can gain insights into the subtle cues, verbal and non-verbal communication and the gradual adjustment of instructional support, which are all vital components of the scaffolding process. This method ensures that the observations remain ecologically valid and provides a comprehensive understanding of how scaffolding unfolds organically in a genuine learning setting. 10 teachers video-recorded their weekly lessons with the beginner students over 4 weeks of lessons. A total of 40 video recordings, 4 videos from each pair of teacher-student dyads, were collected and documented in this study. To encapsulate the learning process in its essence, neither the teachers nor the students received any instructions prior to or during the lessons. Ethics clearance (Ref: UM.TNC2/UMREC-675) and participants' written consent was obtained before the recording begun. Next, teachers were interviewed to get more insights on their perspectives on their teaching in general as well as related to the lesson videos.

### Data analysis

The 40 lesson videos were assessed and manually coded, with the findings recorded into an excel spreadsheet. The deductive analysis was carried out to identify the three characteristics of scaffolding (contingency, fading of support and transfer of responsibility), teachers' teaching strategies, students' response and other unanticipated themes that emerged. Subsequently, narrative interviews were conducted with the teachers to triangulate the data. To provide a glimpse into the piano lessons, sample vignettes illustrating four representative scaffolding process were provided below. Subsequently, all videos were

compared to identify any shared themes that emerged among the collective cases of teacher-students. The themes are discussed in the discussion section.

### Findings

The sample vignettes below represent the four general scaffolding process that emerged during the observation. The scaffolding process was analysed based on the conceptual model of scaffolding by van de Pol et al. (2010). According to them, scaffolding process consists of three key characteristics—contingency, fading of support and transfer of responsibility.

#### **Vignette 1: Learning a new scale with a different fingering (within same lesson)**

Teacher Kor is about to teach the student the F major scale which involves a different fingering pattern on the right hand compared to the previous keys learnt. Previously, the student has learnt C, D and G major which uses the same fingering patterns in both hands. The teacher started by explaining that F major has a different fingering on the right hand, and then proceed to place the student's right hand on the keys, and then pointing to the fingers on the key and explain the fingering. Then, the teacher holds the student's finger one by one and place them on the key to play the F major scale. When the student struggled with the fingering that was different than the other keys, the teacher held her hands and fingers and moved them while giving verbal instructions and explaining why the fingering is so. After that, the teacher asked the student to play the ascending F major scale again. They played one octave several times. Next, the teacher asked her to attempt the descending section, while also moving her fingers and reminding her of the fingering in the same section. Then, the student was asked to play both ascending and descending F major scales. The student attempted to figure it out by herself, with minimal help from the teacher. She was also asked to attempt playing two octaves, of which she succeeded on her own.

#### **Vignette 2: New technical exercise (within same lesson)**

In the second lesson, Win assigned her student with the task of playing a new piece of technical exercise titled 'Jumping over the bench'. Before playing it, Win instructed (while also modelling the action) the student to stretch her right hand straight forwards and then crossing the left arm across the right arm and back to the left in a half- arch shape. The teacher then demonstrated this action on the piano and explained the connection between the movement and the title of the exercise. The teacher then proceeded to play the technical exercise. For the next step, Win asked the student to play the right-hand part, while she played the left-hand part which crosses over. After that, the teacher explained the movement again before switching parts. After doing that twice, teacher asked her to try playing with both hands on her own. The student did as instructed, while the teacher continued modelling the action while she played. After that, the teacher asked the student to try playing again, without any modelling or verbal instructions, which the student succeeded.

#### **Vignette 3: Rhythm and Aural (across several lessons)**

In teacher Hing's second lesson, the student learnt a new song called *Doggy doggy*. The first step of learning the song was to echo after the teacher sang each verse. Next, the student was asked to sing the melody while tapping the pulse together with the teacher. Then, the student was asked to sing the melody while tapping the rhythm instead of the pulse. When the student could do all those steps, the teacher asked the student to clap the pulse while she clapped the rhythm, all the while singing the melody, and vice versa. In the next step of contingency, the teacher provided a diagram with images of whole heart shapes that are divided into halves and told the student that these are heartbeats. The teacher then asked the student to point to the heartbeats (according to the pulse) while singing the melody. The next step is similar, but this time the student is asked to point according to the rhythm of the melody, instead of the pulse, while singing. After all these steps, teacher Hing explained that each heartbeat is a crotchet, and half a heartbeat is a quaver. After the explanation, a new diagram was shown to the student, this time with crotchets and quavers written in the heartbeats and she asked the student to point to it (according to pulse first, followed by rhythm) while singing the melody.

The next lesson began with the same *Doggy doggy* activity. This time, the teacher gave a starting pitch and tempo, and the student sang the melody while tapping the pulse with sticks, with the teacher tapping along with the student. Next, the student is asked to point to the heartbeats with crotchets and quavers, both according to the pulse as well as the rhythm. This time, the teacher asked the student to notate the rhythm of the melody using the crotchet and quaver notes while singing it. The student attempted to notate it while singing the melody and managed to do it with some help from the teacher.

Based on the same activity, teacher Hing asked the student to identify the solfege in the melody. This is focus listening and singing occurring simultaneously. After identifying the solfege, the student was asked to sing the melody, this time gesturing with the Kodály solfege hand signs. In this scenario, the student could identify the solfege almost immediately with almost no help from the teacher.

In this same lesson, a new song was introduced through the same contingency strategies. The teacher started by writing down the lyrics for the student to refer to, before singing it verse by verse while echoed by the student. The next step, similar to the previous song, is singing the melody while tapping the pulse, involving both teacher and student.

In the next lesson, teacher Hing activated the metronome and asked the student to sing the melody of the new song while tapping the pulse according to the metronome's speed. It is observed that the student can do so. Following that, the student sang and clapped the rhythm while the teacher clapped the pulse, and vice versa. Pointing to the 'heartbeats' while singing comes next, but this time instead of singing the words, the student was asked to sing in the Kodaly rhythm language. Finally, the student was asked to notate the rhythm using crotchets and quavers. After that, to make the activity more engaging, the teacher asked the student to sing (in rhythm language) and clap the rhythm, but this time, only singing the quavers while clapping the whole rhythm. The student tried and managed to accomplish the task albeit with slight confusions which he quickly recovered from.

#### **Vignette 4: Rhythm (across several lessons)**

In the first video from teacher Kor, the student was asked to play a piece titled "The Little Frog". This piece was assigned to the student in the week prior to the first recording. In the first video, the student struggled with the starting rhythm of the piece. Upon seeing this, teacher Kor responded by asking her to count the rhythm and then writing down the rhythm on the book. Next, the teacher and the student clapped the rhythm together while counting out loud. After these contingency steps, the student was asked to play the same part on the piano, but the student still struggled and could not play the correct rhythm. Thus, the teacher repeated the previous contingency steps of clapping the rhythm while counting out loud. After that, the student was asked to play again on the piano, with the teacher playing and singing along with her. After several attempts, the student managed to play it with ongoing support and assistance from the teacher. However, she still could not play it on her own without support from the teacher.

In the next video, the student was asked to play the same piece again. This time, the student played it with the wrong rhythm at the beginning of the piece again. Teacher Kor then repeated the contingency steps by asking her to count the rhythm, and then clapping the rhythm together several times. This time, the teacher added in an additional contingency step of tapping the rhythm on the student's arms so the student could feel the rhythm. After all the contingency steps, the student attempted to play on the piano again and although she played it with the wrong rhythm at the start, she played the piece with the correct rhythm following a reminder from the teacher.

In the third video, when the student was asked to play this piece again, the teacher reminded her to pay attention to the starting rhythm, and she managed to play it correctly without any aid from the teacher.

### **Discussion**

Two types of scaffolding process emerge through the observation—contingent scaffolding and consistent scaffolding. It was also observed that the three characteristics of scaffolding process unfold within the same lesson as well as across several lessons and is affected by students' readiness. In general, despite some variances among the contingency strategies used, certain tendencies recurred across teachers and modelling was observed to be the prevalent contingency strategy. It was also discovered that teachers provide scaffolding based on their intuition and students' response. A more detailed discussion of findings follows the tabulation of the sample vignettes based on the three characteristics of scaffolding.

Table 1

*Tabulation of vignettes based on the three characteristics of scaffolding*

	<b>Contingency</b>	<b>Fading of support</b>	<b>Transfer of Responsibility</b>
<b>Vignette 1: Learning New Scale</b>	Explanation of different fingering (modelling) → Place student's hand on the keys and manoeuvre the fingers to play the scale while explaining the fingering (kinaesthetic) → repeat this several times	Student attempted to play descending with some guidance and assistance from teacher (modelling)	Student was able to combine ascending and descending → student able to play two octaves ascending and descending (Student is able to apply the previously learnt knowledge into similar keys)
<b>Vignette 2: New technical exercise</b>	Verbal and physical modelling of the action away from piano (modelling) → Verbal and physical modelling on piano and relate the movement to the title of the piece (modelling) → Demonstrate playing the piece with the movement (modelling) → Teacher plays one hand while the student plays the other hand (modelling)	Student attempted to play both hands, while teacher continued modelling the action (without any verbal explanation).	Student attempted to play this on her own without any assistance from the teacher.
<b>Vignette 3: Rhythm (1st lesson)</b>	Verbal echo → Sing melody while tapping pulse → Sing melody while tapping rhythm → student sing and tap pulse while teacher taps rhythm and vice versa → Introduce heartbeats (in crotchet and quaver beats) → sing and point to the hearts in pulse → sing and points to heartbeats in rhythm → relate heartbeats to crotchet and quaver notation → point to crotchet for pulse, and quavers for rhythm while singing		
<b>(2nd lesson)</b>		Student sung melody and tapped pulse with sticks, teacher tapping pulse along → point (pulse and rhythm) to heartbeats with crotchets and quavers while singing	Student notated the rhythm while singing the melody
<b>(3rd lesson)</b>		Sing and tap pulse with metronome → student sings and claps rhythm while teacher claps pulse and vice versa (reinforcement) → Point	Notation of the melody using crotchets and quavers

		to heartbeats and singing Kodaly rhythm language
<b>Vignette 3: Aural</b>	Teacher sing, student echo → Teacher sing, student identify solfege Singing and echo new song (modelling) → singing and tapping pulse (reinforcement)	Student sing and gesture with Kodaly solfege hand signs
<b>Vignette 4: Rhythm (1st lesson)</b>	Counting rhythm out loud and write rhythm on the book → clap rhythm and count out loud (T&S) → student still could not play → Repeat → Teacher sing and play along with student (repeat several times)	
<b>(2nd lesson)</b>	Count and clap the rhythm together several times → teacher tap rhythm on student's arms → student played but still wrong, but manage to correct after reminder (slight fading of support)	
<b>(3rd lesson)</b>		Student was able to play correctly on her own with just a reminder from teacher

### **Emergence of contingency, fading of support and transfer of responsibility within the same lesson and across several lessons**

In line with van de Pol et al.'s (2010) conceptual model of scaffolding, the lessons demonstrated the presence of three characteristics during the scaffolding process. Notably, it was observed that the emergence of these characteristics occurred within the same lesson as well as across multiple lessons, and their manifestation was influenced by an external factor – student's practice/readiness. Based on the observations in the videos, it was evident that when students did not practice or demonstrate the desired learning outcomes, it took a longer time or greater number of lessons for the transfer of responsibility to take place. Vignette 1 and 2 demonstrates the scaffolding process within the same lesson, with all three characteristics detected within the same lesson. In both vignettes, both teachers were about to teach something new to the student and had to scaffold it by explaining and allowing the student to experience it while also guiding the student. This is the first characteristic, contingency. After several attempts, student then attempted on their own with some reminders and hints from the teacher – this is the fading of support stage. In vignette 1, the student was given some responsibility to attempt the descending scale with less guidance from the teacher. Finally, when the student is able to do it entirely on their own, and apply the same knowledge to similar situations, transfer of responsibility has occurred. In the scenario of Vignette 1, the student was able to apply the newly taught knowledge when asked to connect both ascending and descending sections, as well as play two octaves of the scale.

Vignette 3 and 4 depicts the scaffolding process across several lessons. In these scenarios, only one or two characteristics emerge within the same lesson, and it takes several lessons for the student to reach the stage of transfer of responsibility. Vignette 4 depicts the scaffolding process that spans across three lessons when the student struggled with a particular rhythm. In the first lesson, after the teacher had taken several contingency steps to teach the rhythm to the student, the student still could not play it correctly on her own, indicating an absence of transfer of responsibility. The same situation occurred in lesson 2 (despite a hint of fading of support), and finally, in lesson 3, the student could play the rhythm correctly without any



assistance from the teacher, indicating the transfer of responsibility. From the observations, it was revealed that students' readiness affected the process of scaffolding. Students who did not practice, takes a longer time/more lesson to achieve the transfer of responsibility. However, when the students practised a decent amount, a huge progress can be noticed from the following lesson, and the transfer of responsibility is observed. In more than one scenario, the transfer of responsibility was only observed after two or three lessons. When the teacher praised and talked to the student, it was revealed that the student practiced and therefore managed to achieve the transfer of responsibility.

### Contingent and consistent scaffolding

Upon analysing the lesson videos with respect to the three characteristics outlined in van de Pol et al.'s (2010) conceptual model of scaffolding, two distinct forms of scaffolding process were identified, which the researcher termed as contingent and consistent scaffolding. Contingent scaffolding is the process where teacher scaffolds intuitively based on the student's reaction/response whereas consistent scaffolding is the process where the teacher scaffolds systematically across a long period of time to attain specific goals. It was observed that contingent scaffolding is more prevalent in most of the lessons. Most teachers conducted contingent scaffolding based on the student's response during the lesson. The contingency step is taken when student faces difficulty during the lesson and the scaffolding process is conducted based on the students' response. In this study, only two teachers conducted consistent scaffolding, which was intended for aural and rhythmic development.

Vignettes 3 and 4 illustrate the difference between these two-scaffolding process in rhythmic scaffolding. In Vignette 4, teacher took contingency steps when the student encounters some difficulty during the lesson. Based on the student's response, the teacher took contingency steps to scaffold the rhythm for the student.

In contrast, Vignette 3 depicts a consistent scaffolding process of rhythm through several contingency strategies across several lessons. The scaffolding was provided with the intention of conveying and teaching the concept to instil long-term understanding that could be applied in future tasks. The *Doggy doggy* activity was utilised to scaffold both rhythm and aural. When the *Doggy doggy* rhythmic activity was first introduced in the second video, only contingency was observed as the teacher scaffolded the process in various ways. In the next video, fading of support was observed when the student did the activities with minimal support from the teacher, and finally transfer of responsibility emerges when the student was able to apply the knowledge from the previous activities into notating the rhythm. This scenario illustrates how the scaffolding process unfolds across several lessons.

In the same lesson, when the aural aspect was conducted for the same activity only contingency, and transfer of responsibility occurred. The student could immediately identify the pitches upon being asked to do so. This is the result of the consistent scaffolding that teacher Hing has done at the early stages of music lessons. During the interview with teacher Hing, she brought up the importance of aural (listening and singing) and stated that she allocates approximately 15 minutes to aural activities in each lesson. This implies that the contingency steps for tonal recognition were executed consistently across the lessons from the early stages of learning; therefore, only transfer of responsibility was observed here as the student could immediately recognize the pitches without any assistance. This also infers that consistent and systematic scaffolding across a period is important to internalize the intonation and rhythm into the students from an early stage. Win shares the same point of view as Hing when it comes to aural. According to her, the child's ears are more sensitive and active when they are younger, so it is best to train it when they were younger: "The musical ear is more sensitive when they were young. It starts to 'close' as they grow older, from as early as 8 years old, therefore making it harder to develop the aural skills."

In the second rhythmic activity that was introduced in the third video, it is observed that the contingency steps required a much shorter time compared to the first. Furthermore, the student was able to do the activities with minimal to no support from the teacher, even when the teacher added some different tasks to the activity. Once more, this shows the importance of scaffolding in the student's learning as they would be able to apply what was taught to a new, but similar activity. Despite recommendations from researchers to support learning through a systematic process in order to achieve learning goals (Rosenshine et al., 2002), this study uncovered that a majority of teachers did not follow this approach.

### **Contingency relies primarily on teacher's perspectives and intuition**

Although there were variances among the contingency strategies used, certain tendencies recurred across the teachers. For example, in the scenario of learning a repertoire, almost all teachers used a similar contingency step by reviewing the notation of the piece. Some teachers did this by asking the students to identify the starting note and the fingering/hand positions, while some went into more detail by asking students to identify the dynamics, articulation as well as the structure of the whole piece. Teachers Yip and Lai stated that it is important for the student to understand the whole piece so that they can identify similar sections as well as find out about the character of the piece. Yip added that this is important in helping the student to know how to pre-analyse a repertoire in the later stages. After that, the teacher will count the starting tempo for the student to play while playing or singing along with the student throughout the whole piece. Some teachers, such as Yip, Kor, and Ash, had additional contingency steps by pointing out certain sections and guiding the student to clap the rhythm before playing it on the piano.

However, one teacher, Win, used an approach that was completely different from the others. Instead of teaching a new repertoire by reviewing the notation on the score, she used an aural approach by singing and playing the piece first, then asking the student to echo after her. In the interview, Win stated that it is important for the child to experience the piece by listening and singing before playing it on the piano. It enables the student to relate to the piece more and thus be able to convey it better when playing it on the piano.

Rhythmic scaffolding is another good example to illustrate this observation. Similar strategies were employed with some variations depending on the student's response. Most teachers utilise modelling (through clapping or tapping) as their first step of contingency, but based on students' responses, the teachers then employ other variations such as tapping on the student, asking student to tap pulse while teacher taps rhythm and vice versa, or even applying the rhythmic language by pedagogues such as Zoltán Kodály or Edwin Gordon.

In scaffolding physical techniques, most teachers utilise modelling as their contingency steps, although there might be a variance in the way they conduct the activity. For example, in vignette 1, teacher Kor uses modelling while providing physical support to the student, while teacher Win in vignette 2 utilises only modelling without any physical support. In the interview, Kor stated that he believes that physical support is essential in scaffolding at the beginning stage as it prevents students from developing the wrong habit in physical technique. Win, however, shares a contradictory view that student could become reliant on the direct physical support, and they would not know how to do it on their own without physical support later on. Therefore, physical support is her last resort if all other modelling contingency fails.

This discussion reveals that piano teachers rely primarily on their perspectives and intuition upon facing the students' response, aligning with the findings of Han et al's (2017) study. As a result, their ways of teaching vary accordingly.

### **Strategies used during the scaffolding process**

The predominant observation was that most teachers employed modelling as their initial contingency strategy in the scaffolding process. As described by Single (1991), teacher modelling plays a significant role in helping students distinguish between an ideal performance and their own performance by providing a reference point. Typically, this modelling was accompanied by verbal instructions during the first contingency step. Research has indicated that combining modelling with verbal explanation yields the most effective results (Sweller et al., 2021). The findings also revealed that teachers utilised various modelling strategies during the scaffolding process. These strategies included modelling with explanation, demonstrating both correct and incorrect versions and sometimes even employing modelling without explicit verbal explanations. However, some teachers employed physical support, such as manoeuvring the student's hands, as the first contingency before gradually transitioning to modelling with verbal instructions and eventually relying on modelling solely. Additionally, teachers also engage students in activities such as signing, chanting, conducting and rhythm clapping during contingency. These activities align with the progressive approach identified by Hallam (2006) and Rosenshine et al. (2002) for introducing new knowledge. These interactive activities provide students with hands-on experiences and opportunities to actively engage with the musical concepts being taught. By incorporating these activities, teachers create a

dynamic and immersive learning environment that supports students' understanding and acquisition of new musical knowledge.

As students progressed in their learning, directed and sequential instructions were frequently employed, often accompanied by non-verbal cues such as nods or hand gestures from the teachers, during fading of support. Additionally, it was observed that modelling, in the form of tapping the pulse, singing, or gestures, was utilised as a means of support and accompaniment while the student was playing the instrument. Studies in the context of instrumental music lessons has shown that modelling has a positive influence on student performance (Meissner & Timmers, 2020; Zhukov, 2012).

During the transfer of responsibility, as students gradually take over the responsibility of their learning, teachers reduced scaffolding support (van de Pol et al., 2010) and instead, employed questioning and prompts to facilitate students' independent thinking to problem-solve the tasks at hand. This is particularly evident in consistent scaffolding, as observed in vignette 3, where the student successfully notated the rhythm with only minimal prompts and questions from the teacher. By utilising questioning and prompts, the teacher encourages the student to think critically, analyse the task at hand and formulate their own solutions. This approach promotes autonomy and self-regulation in the student's learning process, allowing them to develop independent problem-solving skills ((Küper, van Dijk, McPherson, & van Geert, 2014). The teacher's role becomes that of a facilitator, guiding and supporting the student's thinking rather than providing direct answers or solutions (Vygotsky, 1978). This method empowers students to take ownership of their learning and develop the confidence to tackle musical challenges on their own (Hmelo-Silver, 2004).

The following figure illustrates the summary of findings from the observations (see Figure 2).

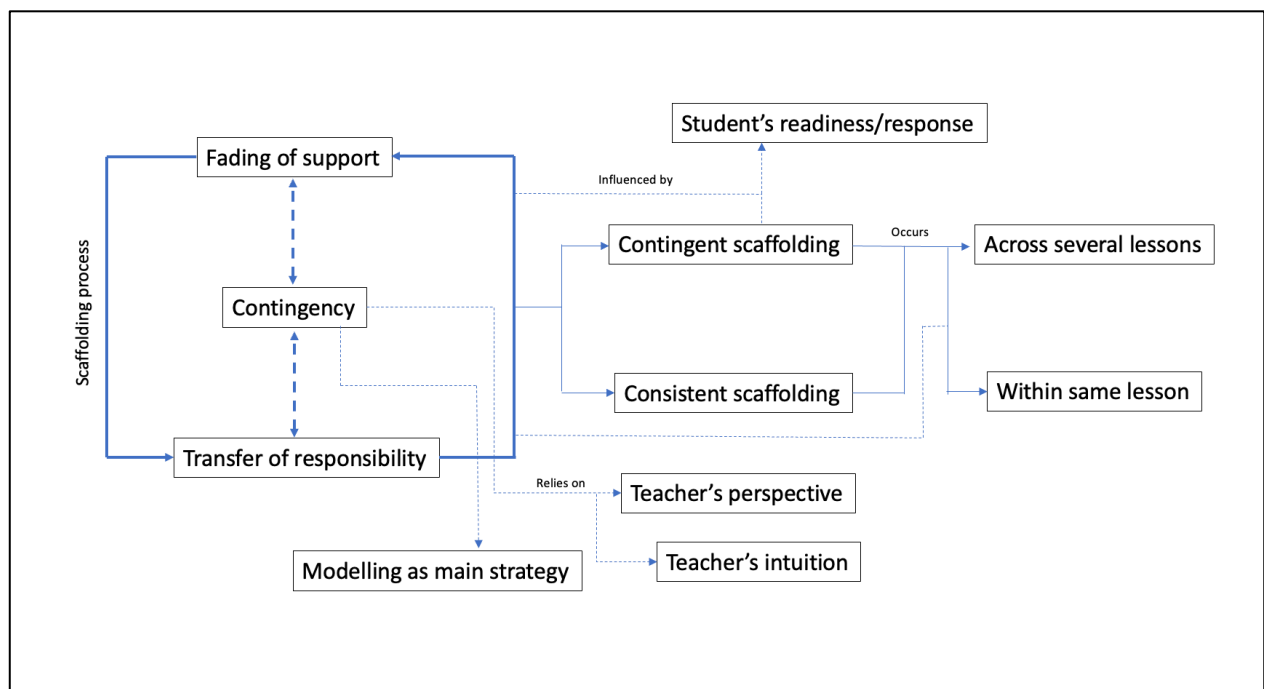


Figure 2. Illustration of the summary of findings from the observation

### Conclusion and suggestions for future research

Teaching beginner piano students can be a riveting yet daunting process. The teacher has an important role, particularly in the early stages of piano education. Over the course of the lessons, the teacher must ensure that the student develops an extensive skillset, and their methods will have a great impact on the outcomes. By observing real-time piano lessons, this study has unveiled two distinct forms of scaffolding process – contingent and consistent scaffolding. Modelling was observed as the prevalent contingency strategy during the lessons. The scaffolding process is influenced by the readiness of the students, while the contingent steps in the scaffolding process rely on teacher's perspectives and intuition. For those reasons, further

research into music education should be conducted from the perspectives of piano teachers' scaffolding process. Larger samples and longitudinal studies are needed to verify the reported results in order to expand on the theories brought up in regard to musical scaffolding in the initial stage of piano learning. Since teacher's teaching experience or music training background may influence the way they teach (Ünal & Ünal, 2012; Al-Harthy et al., 2013; Dewaele et al., 2018; Han et al., 2017; Podolsky et al., 2019), further research could also investigate if teaching experience or music training background have a correlational effect on teaching styles. Through the observations and analyses conducted in this study, it is hoped that the findings will help piano educators and pre-service piano teachers to become reflective practitioners and develop scaffolding strategies to effectively guide students in their learning.

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### Biography

**Wong Yiing Siing** is currently a PhD candidate at University of Malaya. She obtained her Bachelor of Music (with Distinction) and Master in Arts from the University of Malaya. Her research interests include musicology, music education, piano pedagogy research and trans-disciplinary experimental research.

**Dr Wang I Ta** is a senior lecturer at the Faculty of Creative Arts, University of Malaya. He has trained under Professor Boris Slutsky and Professor Alexander Braginsky, receiving his MM and DMA. His publications covers the area of piano pedagogy, self-regulation in piano practice and well-being through music meditation.

**Prof. Dr. Mohd. Nasir bin Hashim** has had an extensive career in music, which includes a 32-year tenure at the Faculty of Creative Arts, University of Malaya, with the record of the longest-serving dean. His publications range from ethnomusicology, musicology, music education and inter-disciplinary experimental research between music and medicine.