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## **Music Teachers' Perspectives on Live and Video-Mediated Peer Observation as Forms of Professional Development**

### Abstract

The purpose of this interview study, conducted with 12 primary music teachers in Singapore, was to determine whether peer observation is viewed as a learning approach that may contribute to professional growth. We found that both specialist and generalist music teachers highly valued peer observation and were optimistic about the use of video-mediated peer observation. Peer observation, as a form of professional development (PD), appears to enhance understanding and application of teaching strategies, allows teachers to anticipate students' reactions during lessons, and builds their confidence as instructors. Video-mediated peer observation, which is both convenient and easily accessible, provides contextualized examples of effective classroom practices. We conclude that peer observation activities are most meaningful and transformative when they are responsive, that is, designed with music teachers' voices and PD needs in mind.

*Keywords:* Music teacher professional development; primary school teachers; live peer observation; video-based peer observation; responsive professional development

Live peer observation is widely used as a learning method for student teachers, especially during final practicums, when they are required to enter real classrooms to observe how experienced teachers teach (Reese, 2015). However, due to a number of factors (e.g., lack of time, limited resources), opportunities for peer observation tend to decline radically in most countries once teachers begin their formal careers. For music educators, learning from peers is particularly problematic, as there are many schools with only one music teacher (Blair, 2008). With recent advancements in technology, video-mediated peer observation now allows teachers to observe their peers in action without being physically present in their classroom. This resolves many issues associated with live peer observation. While music education researchers have stressed the value of peer observation in teacher education and professional development (PD) (West 2013), investigations focused on music teachers' perspectives are needed to ensure that professional growth activities designed by teacher educators and PD providers employ peer observation in appropriate ways.

### **The Role of Peer Observation in Teacher Learning**

Learning through observation is a natural phenomenon, which has been extensively studied by psychologists. The concept of vicarious learning was brought forth by Bandura, Ross, and Ross (1961), who conducted experiments to investigate the learning of social behaviors such as aggression. They found that children who observed an aggressive model were more likely to imitate the aggressive behaviors observed, concluding that observation and modeling are highly effective learning approaches. Since these seminal experiments, considerable research has been devoted to exploring how to best utilize observation in different epistemic domains, including education, and more specifically teacher education and PD.

In many teacher education programs across the world, preservice teachers are provided opportunities to observe experienced teachers in the classroom, and sometimes teach under their

supervision, or even co-teach the same group of students. This allows preservice teachers to gain a better understanding of the links between theory and practice, thereby fostering the knowledge, skills, and dispositions required to become effective educators (Smith & Lev-Ari, 2005). Being able to observe more experienced peers is so crucial to teaching effectiveness that Guha, Hyler, and Darling-Hammond (2017) have advocated the residency (or clinical) model of teacher education. Building on the medical residency model, this teacher preparation model provides student teachers (i.e., residents) with both the underlying theory of effective teaching and a year-long in-school residency, during which residents observe, practice, and hone their teaching skills alongside seasoned teacher-mentors. Residents receive stipends as they learn how to teach, and commit to teaching in their districts for several years beyond their classroom apprenticeship residency (Guha et al., 2017).

Live peer observation is also very effective when used to foster the learning of inservice teachers. There is evidence that inservice teachers feel more motivated to try out new teaching strategies and feel re-affirmed in their own teaching after observing other fellow colleagues in action, specifically helping in areas such as lesson design, instructional practices, and classroom management (Hendry, Bell, & Thomson, 2013). Guskey (2000) described peer observation as “one of the best ways to learn” (p. 23), as it benefits both the observer and the one being observed. The former gains professional expertise via the modeling and the preparation of feedback for his/her peer, whereas the latter gains new insights about his/her instructional practice from the feedback received. Research has also shown that peer observation helps inservice teachers to build confidence and think more reflectively (Guha et al., 2017).

With the development of new technologies, peer observation facilitated through video formats (live streaming, recorded) is a more common feature of teacher education and PD programs, particularly in content areas such as mathematics, science, and literacy education.

Video-mediated peer observation, as compared to observing peers in their classrooms, allows teachers to enter the world of the classroom at their own convenience, without having to teach in-the-moment (Gaudin & Chaliès, 2015). There are important ethical guidelines that must be followed when collecting and sharing videos of students and teachers at work in classrooms (Finefter-Rosenbluh, 2016). Such videos, however, are a valuable resource in helping teachers improve their content knowledge and instructional practices, as well as their knowledge of students' thinking and learning (Desimone & Garet, 2015). In addition, video can provide evidence of classroom interactions that a teacher might not notice while teaching and a glimpse into the social components of the classroom (Gaudin & Chaliès, 2015).

### **Peer Observation in Music Teacher Learning**

There are many documented instances of field experiences in which student and beginning music teachers observe mentors in actual classrooms (Blair, 2013; Conway, 2014). Field experiences are highly valued due to their authenticity, applicability, and transferability. Student teachers strongly appreciate the mentor/protégé relationship and consider peer observation to be vital. For example, the participants in Walls and Samuels (2011) believed that observing experienced teachers modeling appropriate behaviors in the classroom helped them to refine their understandings of effective teaching and good pedagogies in music education.

The literature documenting the use of live and video-mediated peer observation as vehicles to foster the learning of inservice music teachers is limited. In a recent literature review (Bautista, Yau, & Wong, 2017), we found that only 50% of music-specific PD initiatives reported in specialized journals utilized some form of teacher modeling. Reasons for limited participation of music teachers in peer observation include their busy schedules, difficulty finding common times and spaces to learn from one another, and the fact many schools only have one music teacher (Blair, 2008). This means that, unlike teachers in the so-called core

content areas, music teachers would need to collaborate across different schools. Bush (2007) showed that inservice music teachers hold favorable views of peer observation as a professional learning approach. Peer observation also alleviates feelings of isolation as experienced by so many music teachers (Sindberg, 2013). Therefore, integrating peer observation within high-quality PD may benefit inservice music teachers in multiple ways.

There is little research on how video-mediated peer observation benefits the learning of inservice music teachers. Tan, Bautista, and Walker (2017) conducted a review of the video-related research literature focusing on music teacher learning, which offers an overview of the articles published over the last 30 years in the main peer-reviewed journals. Our findings indicate that the research available is mainly qualitative and exploratory in nature, centered on preservice primary and/or secondary school instrumental teachers, and that videos are largely utilized to improve teachers' instructional practices. We concluded that the use of video in music teacher education is still in its infancy as compared to other areas (e.g., mathematics education), and emphasized the need for more research focused on understanding how video-mediated peer observation can be used to support the learning of music teachers.

The present study was conducted in Singapore, where the fraternity of inservice music teachers encompasses music specialists and generalists (Lum & Dairianathan, 2013). In Singapore, music specialists have a strong music education background. They are typically in charge of the bulk of music lessons within schools. The collective of non-music specialists is heterogeneous, from teachers who graduated with a music education minor to others with little or no prior music training, being in charge of those classes that cannot fit in the music specialists' timetables.

A very important landmark in music teacher PD in this nation was the establishment of the Singapore Teachers' Academy for the aRts (STAR). STAR conducts a plethora of music-

specific PD initiatives (e.g., courses, programs, communities of practice) aimed to improve the knowledge, skills, and dispositions of both music specialists and generalists (Wong & Bautista, 2018). Multiple approaches to teacher learning are utilized in STAR PD initiatives. These include collaborative reflection, peer-to-peer feedback, and micro-teaching (i.e., observation of lessons where teachers play the role of students). The use of live and video-mediated peer observation has become increasingly prevalent in recent years (MOE, PESTA, & STAR, 2016). Additionally, the Ministry of Education (MOE) has also kick-started a number of InfoTech projects to help provide support to teachers in all content areas, including music. Digital platforms where teachers can access videos of practice and written resources (e.g., lesson plans, lesson materials) have been recently developed, and teachers of all subject matters are encouraged to use them.

### **Context for the Research**

This study was conducted within the scope of a larger research project intended to map the PD needs, motivations and preferences of Singapore primary school music teachers. The project was based on the notion of 'responsive PD' (Bautista, Toh, & Wong, 2018), according to which PD should be designed in response to teachers' own voices in order to be truly meaningful and transformative. We acknowledge that there are multiple factors that need to be considered when designing PD, and that teachers might not be aware of all the alternatives available to foster their learning. However, based on our constructivist orientation (Wlodkowski & Ginsberg, 1995), we think that teachers' own perspectives should be considered as the starting point.

Because the level of specialization in music education of Singapore music teachers varies widely, our project included participants with diverse profiles to maximize the variety of voices. One of the general aims of our project was to explore how different PD approaches could

respond to the various needs of music teachers. We were particularly interested in how live and video-mediated peer observation could help Singapore music teachers in their professional practice. Our interest stemmed from a prior study where a different group of music teachers emphatically referred to the use of observation and videos as effective approaches to improve their pedagogies (Bautista & Wong, 2017).

In line with our framework of responsive PD (Bautista et al., 2018; Wlodkowski & Ginsberg, 1995), the two goals of this exploratory study were: (a) to investigate Singapore primary music teachers' perspectives as to how peer observation (live and/or video-mediated) helps them in their professional practice, and (b) to investigate Singapore primary music teachers' perspectives on why video-mediated peer observation should be used as a tool to foster the PD of music teachers.

## Method

### Participants

Given the exploratory nature of this study, we recruited participants who reflected the basic demographic characteristics of the population of music teachers in Singapore public primary schools. We selected 12 music teachers from four public schools, including two males and ten females. This roughly mirrored the gender breakdown for the national teacher population, with 18% males and 82% females (MTI, 2015). Of the 12 teachers, four were music specialists and eight generalists, which also reflected the national proportion of specialists/generalists when data were collected (Bautista et al., 2018). Participants had varied teaching experience, which ranged from 1.5 to 13 years ( $M = 6.4$ ,  $SD = 4.3$ ), and teaching loads in music, which ranged from 1 to 18.5 hours per week ( $M = 8.3$ ,  $SD = 6.4$ ). They also had differing prior experience in music-specific PD initiatives and held different portfolios concerning the level of students they taught (from Primary 1 to Primary 6).



## **Procedure**

Ethics approval was obtained from the authors' university Institutional Review Board (IRB). The research team met with music/aesthetic department heads to inform them about the aims of our project and to invite specific teachers to participate in classroom observations followed by individual interviews. To identify areas in which music teachers might need further PD support, we decided to observe them delivering an instructional unit of their choice. The lessons were video-recorded and coded on-site by the first author (Principal Investigator) and second author (Research Assistant). To investigate teachers' perspectives related to music-specific PD, we conducted individual interviews. Whenever possible, the interviews were scheduled on the same day of the observations. The first author conducted the interviews, while the second author took field notes and asked key follow-up questions, when necessary. Interviews were audiotaped and their duration ranged from 45 to 60 minutes. Signed consents were collected from teachers, students, and parents. They were informed that participation in this study was voluntary and would not result in any monetary or graded incentive.

## **Interview Protocol**

The design of the semi-structured interview protocol was informed by the theories of responsive PD (Bautista et al., 2018; Wlodkowski & Ginsberg, 1995) and the findings from a prior pilot study (Bautista & Wong, 2017), which allowed us to identify topics pertaining to music teacher PD that required further research in Singapore. The protocol had four sections.

**Section 1: Demographics.** We gathered demographic information on teachers' age, teaching experience, prior training in music and music education, and current teaching portfolio.

**Section 2: Reflection on the unit of instruction observed.** We discussed how teachers came up with the unit of instruction and the desired lesson objectives. We also asked teachers to share on how they would improve their unit of instruction, if they were to teach it again.

**Section 3: PD needs in relation to the unit of instruction previously observed.** We asked teachers to elaborate on the prior PD experiences that aided in the implementation of the unit of instruction and to reflect on the kinds of PD initiatives or resources that would help them in improving that particular unit in the future.

**Section 4: General PD needs as music educators.** We asked teachers to identify the PD needed to improve more broadly as music educators and explored their opinions regarding the idea of using Singapore-based video clips of actual classroom practices as a tool to further their learning. As this was one of the approaches to PD that Singapore's MOE was planning to adopt, we wanted to find out more about teachers' own perspectives.

The specific questions asked within these four sections were carefully designed to ground the interviews on teachers' concrete instances of practice and examples of their prior PD experiences, as opposed to focusing on abstract/general reflections about their PD needs.

### **Data Analysis**

Content analysis was used to analyze the interviews. Following the categorization proposed by Hsieh and Shannon (2005), we adopted the *conventional* content analysis approach to analyze the ideas that teachers brought up in their responses. The three authors, with the support of a research assistant, read through the transcripts many times to identify quotes pertaining to live and video-peer observation. Each quote was tagged to descriptive memos (e.g., 'lesson design', 'boost confidence', 'student reactions.'). Subsequently, we went through all the quotes and memos and discussed emerging topics, which facilitated the identification of themes. Finally, the second author and the research assistant re-analyzed the complete transcripts to determine whether or not each teacher had alluded to the various themes defined. Disagreements between the two coders were resolved through discussion, until they achieved full consensus. Based on a preliminary exploration of the data, we established the criterion that only themes

alluded to by at least half of the participants (six teachers) would be reported here. This decision ensured that all themes had been mentioned by both music specialists and generalists. Moreover, this decision would allow us to center the presentation of our findings on a manageable number of themes, in order to describe them in depth.

### **Findings**

This section is structured in two sub-sections, according to the two goals of the study. Each sub-section is further divided according to the most common themes identified in the interview transcripts. For each of the themes, we first report on the number of teachers who referred to that particular theme. We subsequently present a description of teachers' perspectives. Illustrative dialogues and quotations are presented as online supplementary materials. Teachers' level of specialization (music specialist vs. non-specialist) is indicated upon their first appearance within each theme. All names given are pseudonyms.

#### **Goal 1. Perspectives on the Ways Peer Observation Helps in Professional Practice**

The data used to achieve this goal were identified from Sections 2, 3 and 4 of the interview, where teachers were asked to elaborate on the prior PD experiences that had been most helpful and the PD they would need to continue to improve. We used follow-up questions such as, "What did the PD experience entail?" and "Why did you enjoy that PD so much?" to understand how the PD initiatives described impacted the teachers. The following four themes condense the main ideas that our participants shared with us.

**1.1 Peer observation inspires lesson design.** One of the themes that teachers commonly brought up was how peer observation (live and/or video-mediated) aided them in designing new lessons. When asked to elaborate on how they designed the unit of instruction observed, nine teachers (2 specialists and 7 generalists) referred to prior peer observation experiences. Of the nine, five (all generalists) shared that the design of the unit of instruction was inspired by fellow

colleagues and/or external instructors. Note that many schools in Singapore hire vendors from private companies to teach specific modules. During this period, the regular music teacher often observes the music lessons and plays a supporting role in the classroom. For example, Natalie (generalist) explained to us that she observed an external music vendor teaching a similar unit of instruction, and then, the following year, she adapted that lesson and implemented it by herself. She also explained that this was common practice within her school (see Dialogue 1, in supplementary materials).

Furthermore, four of these nine teachers (2 specialists, 2 generalists) shared that part of their lesson design came from participating in PD that involved peer observation (live and/or video-mediated). Daphne (music specialist), for instance, referred to her experience in observing a master teacher at STAR. She explained that her unit of instruction was adapted from watching how the master teacher carried out a lesson with similar content, and that subsequently she modified the activities to better cater to the needs of her own learners (Dialogue 2).

**1.2 Peer observation allows for a better understanding and application of teaching strategies.** The second theme that emerged was the perceived ease of understanding teaching nuances through live and/or video-mediated peer observation, as compared to other means such as written lesson plans, curriculum frameworks, or even textbooks. Ten participants (2 specialists and 8 generalists) expressed that peer observation activities would particularly benefit music teacher with less musical training. Nicole (music specialist) empathized with those generalist teachers who have little or even no music training. She expounded on how their lack of music content knowledge limited their understanding of written documents (e.g., lesson plans). Nicole stressed the importance of the use of videos of actual classroom practice, which in her view provide generalists with a deeper understanding of how music teaching and learning may unfold in practice (Quotation 1).

Teachers who had no or little prior music education background corroborated Nicole's view. Ian (generalist) was one such teacher. He had no prior music education training. His experience with music was singing in the choir of his church. Ian explained that his lack of music content knowledge and skills handicapped him as a music educator, and that he was unable to implement a lesson just by reading lesson plans or curriculum packages. Instead, he needed to watch how the lesson could be enacted (Quotation 2). Elizabeth (generalist) also elaborated on the ease of applying the knowledge learned by observing other colleagues in classroom videos. She had no prior music education training. Her only experience with music was playing the cello informally when she was in high school. Elizabeth shared that she would prefer watching videos of other fellow teachers conducting lessons rather than following a textbook, as she perceived that the knowledge gained from videos would be easier to enact and transform (Quotation 3).

**1.3 Peer observation helps teachers anticipate students' reactions.** Another theme teachers commonly brought up was how much they value being able to observe the reactions of students. Six teachers (1 specialist and 5 generalists) expressed that this is particularly helpful, as it allows them to anticipate how their students would react, should they conduct a similar lesson. Daphne (music specialist), for example, referred to her experiences with micro-teaching and peer observation activities. Unlike peer observation, which showcases a teacher in a classroom with actual students, micro-teaching simulates a classroom scenario by making teachers conduct a mock lesson for other teachers, who act as the students. Even though Daphne valued micro-teaching, she perceived peer observation to be more relevant and helpful because she could see how students would eventually react and behave, and the challenges they would encounter when attempting to master the content at hand. Moreover, Daphne expressed that it was very useful to observe actual interactions between teachers and students, something that

micro-teaching was unable to offer (Quotation 4).

Our participants recognized that peer observation could better preempt potential problems or misunderstandings that students might face. The teachers expressed that peer observation allowed them to reflect on how instructions and explanations can be conveyed to students more effectively, helping them to better anticipate students' receptiveness and reactions, and eventually modifying their lesson plans accordingly. For instance, Carol (generalist) shared that being able to observe how actual students react in music lessons helped her to reflect and often realize that "I don't think the kids are able to catch this part that well, so how am I able to do better?" In her view, these reflections are only possible when teachers observe actual classroom interactions.

**1.4 Peer observation helps build teachers' confidence.** Six teachers (2 specialists and 4 generalists) indicated that peer observation boosted their confidence in implementing lessons, especially in less familiar curricular areas. For example, Aaron (music specialist) shared that his experiences in PD involving peer observation gave him the confidence to teach Balinese music in his school. Along with a small group of music teachers, he was sent to schools in Bali and observed firsthand how Gamelan music was practiced and taught there. He was also given opportunities to perform alongside a Gamelan orchestra. After returning from Bali, Aaron and the other teachers came up with a lesson unit on Gamelan music. They put together lesson plans and curriculum materials (e.g., pictures, sound clips) to help other teachers in Singapore teach Gamelan. The lesson unit was shared with his peers via the Ministry-created digital platforms and in local teacher conferences. However, Aaron explained that many of his peers never implemented this module due to lack of confidence, probably because they did not have the same observation opportunities that he had (Quotation 5).

**Goal 2: Why Video-Mediated Peer Observation Should Be Used as a Tool to Foster Music**

### **Teachers' Professional Learning**

The data used to achieve this goal were obtained from Section 4 of the interview protocol, in which we asked teachers to elaborate on their perspectives on video-mediated peer observation. Our prompt was: "Some teachers told us they would like to have a repository of video-taped lessons and video-based teaching materials online. What do you think of this idea? Would this idea help you? Why?"

**2.1 Video-mediated peer observation would be convenient and accessible.** One of the themes that emerged from the interviews was how video-mediated peer observation could be a very convenient and easily accessible way of learning. Six teachers (1 specialists and 5 generalists) expressed that they would prefer learning at their "own comfort" rather than having to travel somewhere to participate in face-to-face PD workshops. Irene (generalist) was one of the teachers who shared specific reasons for her preference for video-mediated peer observation. She expressed that, unlike traditional face-to-face peer observation, where one has to be physically present through the full session, having access to video-mediated peer observation would enable her to pick-and-choose only those lesson sections deemed as most useful (Quotation 6).

The easy accessibility of video-based learning resources was mentioned as a potential solution to the challenges associated with live peer observation. Carol (generalist) was asked about the PD she would need to improve her teaching practice, and she expressed her preference for peer observation-based initiatives. However, she faced many difficulties when trying to coordinate school-based peer observation initiatives with her colleagues. Carol was very enthusiastic about the idea of a repository of videos of practice, as she would be able to learn from many other experienced teachers across the country, not only from her own school (Dialogue 3).

**2.2 Video-mediated resources would provide contextualized examples of good classroom practice.** The last theme that teachers brought up related to the need to create contextualized video-based learning resources. Seven teachers (2 specialists and 5 generalists) stressed the importance of having access to videos showcasing how the Singapore's music education curriculum can be enacted in the classroom, and expressed that it was very difficult to find such videos online. Carol (generalist) was one such teacher. She commonly used video resources found on the Internet to observe how other teachers conducted lessons. However, these videos usually pertained to classrooms conducted in Western countries, hence the ideas were not totally applicable in her class.

Teachers also mentioned the importance of situating these video resources within the frame of the Singapore music syllabus (MOE, 2014). For example, Natalie (generalist) talked about the lack of video resources reflecting localized content such as traditional folk songs, an area that has received renewed importance in the past years. In fact, one of the main learning objectives of the General Music Program is the development of awareness and appreciation of music in local and global cultures. Natalie referred to her frustrations trying to find video resources related to her unit of instruction, which focused on how to play *burung kakak duah* (a traditional Malay folk song). It was very difficult for her to find videos online. Natalie also elaborated on the hurdles teachers must overcome to customize video resources for use in their own syllabus.

### **Discussion and Conclusions**

Regarding our first goal, we found that participants perceived peer observation to be of great value for four main reasons: (a) because it inspires music teachers in the design of new lessons, (b) allows for better understanding and application of teaching strategies, (c) helps music teachers anticipate students' reactions, and (d) builds their confidence as music educators.



Similar perspectives were identified among the music specialists and generalists interviewed. They perceive that observing other fellow colleagues has the potential to inspire the design of new lessons, providing fresh ideas that can be used when delivering the music syllabus (MOE, 2014). In addition, teachers perceive that observing their peers (especially those who are seasoned music educators) allows them to improve their teaching strategies and pedagogical repertoires. These findings resonate with Bush (2007), who showed that inservice music teachers from the United States prioritized the acquisition of knowledge and skills that can be directly applicable in their classroom. Interestingly, our participants expressed that their goal when observing other colleagues was not just *copying* or *duplicating* the lesson proceedings used by their peers, but rather gaining new teaching insights and then adapting them to the context of their own classrooms. This is consistent with Cain (2013), who described how music teachers naturally adopt different pedagogical strategies depending on the context. Moreover, our participants' focus on anticipating student reactions is directly aligned with recent efforts by STAR to foster student-centric pedagogies in the music classroom (MOE et al., 2016), as well as with international discourses regarding the importance of noticing student thinking and learning in teacher PD settings (Desimone & Garet, 2015). Finally, peer observation is perceived to be a relevant approach to PD because it gives music teachers more confidence and self-assurance in their own teaching abilities (Hendry et al., 2013).

Regarding our second goal, the 12 music teachers interviewed think that video-mediated peer observation should be used as a tool to foster their PD for two main reasons: (a) because video resources are convenient and easily accessible, and (b) because video-mediated PD may provide contextualized examples of good classroom practice. The idea that videos can be utilized 'on-the-go' was mentioned by our participants to justify their positive attitudes toward video-mediated PD, similar to music teachers in other international studies (West, 2013). The

convenience and accessibility of video as a learning tool is in stark contrast with the many challenges experienced by teachers when participating in face-to-face PD, such as lack of access to PD courses and lack of time to attend when accepted due to busy schedules, and the difficulty associated with finding substitute teachers and commuting to PD sites. School administrators and PD providers in Singapore should be aware of these challenges in order to facilitate the continuous learning of *all* music teachers, including the generalists, who are typically less keen to participate in music-specific PD initiatives (Bautista et al., 2018). Our participants expressed great interest in having access to a video repository of lessons conducted by other Singapore music teachers, not only because this would allow them to overcome the above-mentioned challenges, but also because it would provide them with contextualized examples of good practice. The teachers expressed that these video resources should be situated in Singapore's local context, illustrating ways in which the new music syllabus can be enacted in the classroom (MOE, 2014). This finding resonates with prior research documenting teachers' preference for PD that focuses on practical ways to deliver the curriculum (Matherson & Windle, 2017), and for PD initiatives that are aligned with national educational objectives (Desimone & Garet, 2015).

One of the factors that might explain music teachers' positive attitudes towards peer observation as a PD approach is the *performative* nature of music and music education (Dubé, Héroux, & Robidas, 2015). Both music specialists and generalists perceive that learning how to implement music lessons requires more than just written resources (e.g., lesson plans, textbooks, lesson rubrics). They seem to find it more natural to learn by observing how a lesson is enacted, rather than reading about it. Indeed, words alone may be insufficient to capture the complexity and richness of the "moves" involved in a music lesson, hence the use of visual modeling might be a more powerful learning approach (West, 2013).

In summary, according to our qualitative evidence, there are four main ways in which

Singapore music teachers perceive peer observation can help them in their professional practice, namely inspiring lesson design, improving teaching strategies, anticipating students' reactions, and building confidence. Teacher educators and PD providers should therefore offer peer observation initiatives that capitalize and revolve around these four themes. We argue that these themes would likely trigger the interest and motivation of music teachers with various levels of specialization (Bautista et al., 2018). In addition, our evidence suggests that Singapore music teachers are highly optimistic towards video-mediated peer observation because it is convenient, easily accessible, and may provide contextualized examples of good classroom practices.

Facilitating PD processes through video is a powerful idea given its low cost and easy scalability (Desimone & Garet, 2015), and because not all music teachers (especially the generalists) have the opportunity to regularly observe how other fellow colleagues teach (Costes-Onishi & Caleon, 2016). Thus, developing videos that feature examples of good teaching practices, specific to the Singapore context, would be highly beneficial to the local music teaching fraternity. Teachers feel that a video repository of this nature would allow them to improve their music-specific pedagogical practices, which would in turn enhance students' musical learning.

### **Implications, Limitations, and Future Research**

Having a better understanding of teachers' own perspectives is timely within the Singapore context, especially with recent initiatives such as the Singapore Teaching Practice (STP). This initiative aims to deepen teachers' professional competencies through the use of classroom videos illustrating good pedagogies. STP focuses on the use of peer observation and the creation of localized video repositories to help teachers improve their pedagogical content knowledge and professional practice (Ng, 2017). Although there is consensus in Singapore about the importance of live and video-mediated peer observation, we believe more empirical research is needed to better understand how these PD approaches can be best utilized with music

teachers who specialize to varying degrees.

At the international level, our findings have the potential to raise more awareness about the importance of providing music teachers with peer observation opportunities. While observed in many countries, the phenomenon of schools hiring vendor companies to teach music is concerning given that the level of pedagogical preparation of these external instructors is often low. Live and video-mediated peer observation have great potential to improve the quality and level of preparation of school music teachers, who should be adequately supported with PD to become the experts in charge of delivering music instruction to students. We propose that schools, PD providers, and music associations should work towards the creation and dissemination of their own contextualized video repositories of good classroom practices (Blair, 2013; West, 2013). With the rise of video-sharing websites like YouTube and Vimeo, along with the proliferation of web-enabled mobile devices, video resources showcasing how other music teachers conduct their lessons or specific music activities can be readily accessed by the rest of the music teacher fraternity (Bauer, 2010). Teacher educators and PD providers can also consider using free online platforms, such as Google Hangouts or Facebook, to organize their video repositories and provide more music teachers with opportunities to undertake video-mediated courses, thereby allowing them to connect with their collegial peers at their own convenience.

The study design is limited by the use of a single data source. Given the lack of studies on teachers' perceptions about peer observation within the Singapore context, we deemed the use of in-depth individual interviews to be more appropriate as a first approach to investigate our two research questions. It is therefore important to acknowledge that our findings are exploratory rather than explanatory. Researchers should determine whether perspectives described by participants in this study generalize to the larger fraternity of Singaporean music teachers.

Additionally, this study is restricted to a specific nation, Singapore, where music teachers are offered a plethora of PD initiatives, which are surely not comparable to the PD opportunities of music teachers in other countries. It would be therefore important to investigate if the findings presented here are generalizable to music teachers in different nations.

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**SUPPLEMENTARY MATERIALS****Dialogue 1**

Natalie: "For the angklung [a traditional Malay instrument] we learned from [an external music instructor] who came to do our modular program. I learned from her and I went online and searched. [...] What our music teachers do now is that we get the instructor (to) come in, then we sit in, we learn, and then we take over. That's our common practice now. So, we learn from instructors too."

Interviewer: "So you hire [music instructors], and then you go and see what they do and then you do the same thing"

Natalie: "Yes, yes, yes. For example, you see some trash percussion here? I do trash percussion lessons, after going through one cycle with [the external music instructors]. Yeah, after that I actually teach the students."

**Dialogue 2**

Daphne: "I was also trying out what I have learnt from [the master teacher in her PD initiative] because I have been observing her, so I was trying out things as well."

Interviewer: "Did she teach a similar lesson?"

Daphne: "Somewhat similar as well, but I changed it a bit for the improvisation activity."

**Dialogue 3**

Carol: "Actually, I have asked him for his timetable so I can go in to his music lesson when I am free to observe his class but currently because he is guiding a trainee so I couldn't go into his class yet."

Interviewer: "Is there anything else that you would like to add?"

Carol: "To see trained experienced teachers conducting lessons, I think that is very helpful. I mean, it is a video and I can watch it anytime and anywhere."

**Quotation 1**

If you talk about lesson ideas for teachers to use, there is actually a lot out there [but] there are a lot of words. [...] And for teaching music, I read words—it's not gonna help. Like even for activities like that I've got ta- and titi, if you don't know music, how are you gonna know how am I gonna say it? Which, how do you know that I'm, I can't explain it in words. "Walk to the beat as you are explaining it"—you can't; you have problems differentiating beats and rhythms you think it's the same thing... you see? [The teacher showed the research team a sample lesson plan given to music teachers] This piece of work is to help you implement the syllabus, so this is an explanation document, how to design your lessons. But this might not be very useful to music teachers because the lessons plans are in words and they need to see how it is done.

(Nicole, music specialist)

**Quotation 2**

But sometimes when we look at lesson plans, it is hard for us to follow when we are not competent in some areas. We have not seen it being done. You write it down and we have to figure it out. (Ian, generalist)

**Quotation 3**

It is easier to see the video than to read blogs or documents in terms of how to teach. [...] We have many books on how to teach but sometimes it would be more direct if we can observe from a video or classroom setting - that would be the best.

(Elizabeth, generalist)

**Quotation 4**

In [name of PD initiative] we also have such lessons, but it is not taught to a real class of students, so it is very different as well. So, for example, I would do micro-teaching. The

PD trainers would tell us what to do, then we are supposed to teach our friends and colleagues. But, you know, the teachers are already trained in music, they already have music background, so it is not the same. But when [name of master teacher] is dealing with children, I can also see the way she interacts with them. (Daphne, music specialist)

#### **Quotation 5**

A lot of my friends who were trying to do the same package gave the feedback that they were not confident because they were not in Bali. For them, they would not try to implement it in their schools. And that was the feedback we got. So, for those of us who went for [name of observation PD initiative], we were quite comfortable because of the exposure. (Aaron, music specialist)

#### **Quotation 6**

I prefer to have a video so that I can see and from there I know roughly the techniques or activities that I can use. [...] It would be much easier if at our own comfort we can look for ideas. Rather than going for workshop and you maybe learning something that you already know. If you can come to me and I can just learn something online, an activity that I can use it immediately, that would be very good. (Irene, generalist)