Using Stimulated Recall and Reflection on Action with Music Studio Teachers in Higher Education

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This article focuses on the issue of reflection for music studio teachers in higher education. Although stimulated recall and reflection on action are well-developed research fields in classroom education settings, the application of these methods to studio teaching is rare, a form of pedagogy which is heavily influenced by the master–apprentice tradition, with many teachers engaging in this practice without any formal training. The article presents the findings associated with three different studio pedagogues reflecting on video recordings of their lessons via cooperative analysis. Each of the three pedagogues took part in a live session with the researchers where their practice and methods were considered and discussed in significant detail, applying the principles of stimulated recall and shared reflections. Findings reveal that in addition to the need for inexperienced teachers to be courageous in reviewing their own work, stimulated recall and reflection on action offer benefits for teachers by assisting them in identifying areas of their practice to revise and re-examine. The findings therefore propose that the process of stimulated recall may be a useful component of professional development for teachers in the higher education sector.

The model of teaching that underpins the learning of a music instrument is typically referred to as the music studio, studio lesson, one-to-one lesson, or private music lesson. It is the primary method for the learning and teaching of a music instrument, despite the fact that formal programs that prepare studio teachers for studio teaching work are rare (Blackwell, 2018; Simones, 2017; Yeh 2018). Recently, the studio teaching model has gained increasing research attention at the higher education level (Burwell, 2019; Parkinson, 2016) because the resource costs invested into studios should lead to, and provide evidence of, high-quality learning outcomes (Simones, 2017).

There is recognition that the music studio lesson is somewhat of an isolated environment (Burwell, 2016; Burwell, 2019; Rakena et al., 2016; Upitis & Brook, 2017). In addition, given most music studio lesson teachers are recruited on the basis of their performance skills (Williamson et al., 2019) with few having engaged in any formal study of pedagogy (Burwell, 2016), there has been a recent focus on how education institutions might offer their staff the means by which to engage in ongoing professional development or self-review of their studio teaching (Simones, 2017; Upitis & Brook, 2017; Williamson et al., 2019; Yeh, 2018).

This study focuses on reflection by studio teachers at the higher education level, which several recent authors argue is limited in terms of opportunities (Blackwell, 2020; Carey et al., 2018; Dumlavwalla, 2019; Rakena et al., 2016; Upitis & Brook, 2017; Williamson et al., 2019). Reflecting on one's teaching is not typically part of professional development practices for music studio teachers; hence it remains a nascent field and one in need of new research and evidence-based findings (Dumlavwalla, 2019; Parkinson, 2016; Russell, 2005; Upitis & Brook, 2017). Although the

research is well developed in classroom education settings, we suggest that research involving stimulated recall and reflection on action is limited in relation to the studio lesson. We report on the findings from a series of interviews with three different pedagogues reflecting on video recordings of lessons taught. The researchers interviewed the participants while they reflected on video recordings of their teaching, with one participant reflecting on a single lesson and two reflecting on two different lessons.

Literature Review

The literature review is divided into three sections, first the music studio is reviewed to frame the setting. Second, the literature concerning video analysis, teacher reflection, and stimulated recall frames the methodological approach. Finally, we pose a theoretical framing developed from the literature and works of Schön (2016).

The Music Studio

The music studio has been increasingly studied over recent decades and the literature can be grouped into several areas (Kennell, 2002): teaching behaviours, interactions between students and teachers, student behaviours, and perceptions about teaching (for detailed meta-analyses see Duke, 1999/2000; Schmidt, 1992). Other research has focused on alternative delivery models (Daniel, 2006; Bjøntegaard, 2015), cultural influences (Rakena et al., 2016), cross-cultural comparison (Dumlavwalla, 2019), pedagogical content knowledge (Williamson et al., 2019), reflective practice (Carey et al., 2018), online music lesson teaching (King et al., 2019), and the evaluation of the effectiveness of

instruction (Parkes, 2019). Despite the growing body of research in relation to the studio, there are calls for much greater inquiry, largely given the complexities of the studio learning environment (Burwell, 2019), with Blackwell (2020) recently proposing that teachers "can benefit from a richer, more nuanced understanding of what other studio teachers do to enhance student learning" (p. 295).

Video Analysis and Teacher Reflection

Studio teachers has been examined by researchers looking for characteristics of teaching expertise using video (Duke & Simmons, 2006; Parkes & Wexler, 2012). These studies describe teaching expertise in the music studio in three broad areas: setting goals and expectations, conveying information, and effecting change. The studio teaching population in music has also seen benefits from video analysis (Daniel, 2006). Carey and Grant (2015) explored critical reflection as a model for encouraging professional growth in music studio teachers. In their study, they asked six teachers to reflect on teaching practices with peers, using a framework of transfer and transformation to guide paired discussions after the viewing of recorded lessons. Guidelines for their teachers were given for the reflection activities, which included stimulus questions such as "What was the experience of watching your own videos like, for you? What did you learn about your own teaching from this activity, if anything?" (Carey & Grant, 2015, p. 67). They found that the process of peer-assisted reflection impacted the teachers in two ways. There was a desire to adjust or reframe teaching practices and approaches and most teachers felt that the process was useful, as it reduced feelings of being isolated and increased shared knowledge.

In relation to teacher reflection, Parkinson (2016) designed a graphic model which encouraged teachers to reflect on their goals as a teacher by identifying their position on two main axes: mastery and enjoyment, and tradition and innovation. Parkinson identified that all five research participants found value in the reflective tool and the opportunities to discuss their teaching practices. Yeh (2018) also applied reflection as a key tool in encouraging a group of seven piano teachers to consider their teaching practice, using questionnaires, interviews, lesson observation, and by maintaining a reflective diary. Yeh found that all seven teachers gave careful consideration to their teaching following the period of reflection and discussion with most making immediate changes in their practice.

In the field of music, the benefits of teacher reflection are increasingly recognised (Carey et al., 2018; Carey et al., 2017; Parkinson, 2016). Our study draws broadly on the framework of reflection by Schön (2016). His work suggests that reflection in action is a

creative act that might be fostered in various professions. Schön proposed that when professionals have competing views of professional practices (such as the role and value of the profession, relevant knowledge, and the skills needed to be effective), tension is created for the practitioner, or a crisis of confidence. In this sense a teacher, like other professionals, "must choose among multiple approaches to practice or devise his own way of combining them" (Schön, 2016, p. 17). The issue is salient for studio teachers, who have been arguably unable to access targeted professional development (Burwell, 2005; Parkes & Daniel, 2016; Upitis & Brook, 2017).

Stimulated Recall

In perhaps the only significant study which adopted stimulated recall as a research method involving music studio teachers, Hultberg (2005) described the benefits of researchers working with practitioners in order to improve understandings and practices and to give participants a sense of agency in the teaching–research nexus. Applying case study methodology, Hultberg invited 10 reputable music instrument teachers to participate, with two opting to do so (a piano teacher and an African marimba teacher). Several lessons by each teacher were recorded, and teachers' accompanying verbal descriptions documented after which interview meetings with each of the two teachers were held for cooperative analysis. The cooperative approach to the research enabled both the researcher and teacher to discuss and identify tacit aspects of good teaching quality, and it encouraged both teachers involved to develop their teaching strategies further.

Different to video study, stimulated recall interviews provide a method by which teachers can reflect on their actions during teaching episodes. Stimulated recall interviewing is a research technique whereby participants watch a video of their practice and are asked to reflect on their decisions, choices, actions, and processes with a researcher. There has been some criticism of video-stimulated recall. For example, Hultberg (2005) referred to the considerable time involved for all participants and Nguyen et al. (2013) suggested that it is not a universal research technique; however, we posit that it holds promise in allowing teachers to recall their thoughts about teaching and learning in the studio.

Theoretical Framing

In wanting to explore further understanding how teaching practices occur in the music studio, the researchers seat the study in the framing of Schön's (2016) work. Schön describes how professionals often depend on tacit recognitions and judgments, qualities

they are not quite able to describe. He suggests at first that crisis is self-criticism, moving eventually to self-reflection. Schön's proposition suggests that professional practitioners can think about what they are doing, while they are doing it, and in the case of our study we propose that they can analyse their thinking afterwards with stimulated video recall techniques. We suggest that in reflecting on their teaching, studio teachers might reflect either about their teaching or about what their students are learning. Focusing on learners has been positioned as *learner centeredness* (Weimer, 2002). Learner centeredness is a framework (Weimer, 2002) that holds five practices: *balance of power*, *function of context*, *role of the teacher*, *responsibility for learning*, and *the purposes and processes of evaluation*. The act of reflecting allows teachers to explore choices, attend to details not seen in the moment, and make sense of their teaching practice (Conkling, 2003; Hourigan, 2006).

In pursuing our method of stimulated recall as a method of reflection, our study addresses the following research questions:

1. During stimulated recall reflection interviews how do the music studio pedagogues describe their teaching and the observed lesson interactions?
2. Are there unintended benefits gained in the process?

Method

As suggested by Dempsey (2010) we developed an interview protocol to both undergird validity and to ensure that the questions would not alter the thinking of our participants during the interviews. We sent the questions to our participants ahead of time as suggested by Calderhead (1981) to reduce stress and anxiety and to help them be prepared for the recall process during the interview (see Appendix A).

For each interview the participants recorded 30-minute videos of their teaching. In each interview we first watched between 10 and 15 minutes of teaching to stimulate recall and then stopped to ask the interview questions. We then watched another 10 to 15 minutes of teaching and again stopped to ask the same questions. If probing was needed, we followed up with exploratory prompts. We note that for Participant A, cameras were already an established part of the lesson setting: however, it was not the case for Participants B and C. Participant B and C's involvement in the study was the first time they had video recorded their teaching. Videos were made by each teacher, at their discretion, with students of their choosing. The teachers chose which

sections of their videos to share with us and we probed with prompts (see Appendix).

We recorded the interviews on Zoom which allowed the teachers to share their screens as they played their teaching videos with us in real time. We then had the interview videos transcribed by a doctoral-level student research assistant employed at Parkes' institution. We sent the transcripts to the participants for member checking[1] and confirmation. We then analysed the transcripts for two themes: (a) what the teachers saw in their teaching; and (b) in the case of Participants B and C, any differences between what they saw in the first video compared to the second video. The research protocol (#19-110) was approved by Human Subjects Ethics Review in 2019 and the three participants gave both written and verbal consent to participate and to have the interviews recorded.

Participants

Three music studio teachers self-selected to participate in our study, as a follow-up to their participation in a previous study by Daniel and Parkes (2019). These three individuals taught individual music studio lessons in higher education settings in the United States and Thailand, and we present individual portraits of each (using pseudonyms).

Participant A (Gerald) was a brass instrument teacher in a public university and had been teaching for 16 to 20 years. Gerald was teaching in Thailand, originally from the USA, and had, as a regular part of his teaching, been recording every lesson with his undergraduate students and often streaming them live to a public audience. We did not watch Gerald's lesson livestreamed; we watched his video with him and engaged him with the same interview protocol as Participant B and Participant C. Gerald was working in a tertiary institution characterized by Eastern (Asian) cultural traditions whereas the other two teachers were working within Western traditions. Despite not being able to complete a second interview with Gerald, we wanted to include Gerald's first interview to examine expertise and cultural differences between studios, not as a point of direct comparison but to serve as an illustration of the wide variety of differences seen in music studios internationally and as a *function of context* from the Weimer (2002) framework.

Participant B (Charles) was teaching voice in the United States, in an adjunct and sessional capacity. He had been teaching for less than 5 years and this was the first time he had filmed his teaching and discussed it with researchers. Charles was working with graduate-level

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[1] Member checking is a process used to help improve the accuracy, credibility, and validity of a study and is known also as informant feedback or respondent

validation. In this case, participants reviewed the transcripts of their interviews and provided feedback and validation as to the accuracy of the transcripts.

students, who were typically not music majors but were from other programs within the university.

Participant C (Cameron) was also teaching voice in the US, in an adjunct or sessional capacity. He had been teaching for less than 5 years and this was also the first time he had filmed his teaching and discussed it with researchers. Cameron was working with graduate-level students, typically music majors and professional singers. Participants B and C, although similar in some respects, are clearly novice or beginning teachers. We wanted to include them to examine expertise, not as a point of direct comparison but to serve as an illustration of the nature of experience in music studio settings.

We were not able to conduct a second interview with Gerald. Given that he was more experienced as a teacher than our other two participants, we are not able to identify unintended benefits he may have experienced as part of participating in only one stimulated recall interview. We kept his interview in the study to illustrate his specific cultural context, level of experience, and belief statements about teaching.

Analysis

We undertook a three-level approach to analyzing our data. First, we examined the transcripts and completed initial coding. We then completed second-level coding separately and then together to calibrate and compare themes. We then conducted discourse analysis; a deeper analysis undertaken to find contextualization of the participants' interviews.

Specifically, participants' transcripts were first analalyzed for themes by each researcher independently (Braun & Clarke, 2006; Saldaña, 2014). We read each transcript and made open and broad codes and themes. We completed initial coding, searching, reviewing and naming themes, and generating a report for discussion (as suggested by Nowell et al., 2017) to meet trustworthiness criteria. We used an open-coding approach to describe teachers' observations of their teaching and interactions. We then met to discuss our separate coding and to compare themes. We met several times and after three meetings we achieved 100% thematic coding agreement for detailed codes and themes. We then re-analyzed with discourse analysis (Salkind, 2010; Wodak, 2005) to determine how the values, beliefs, and assumptions of the participants were communicated. Many aspects of language were isolated and analyzed with discourse analysis. This allowed us to examine how the context is constructed and understood. Discourse analysis is achieved through deep examination of the words and sentences used in the communication, via the transcripts of participants' interviews. Discourse, in our case, served as a vehicle for understanding a specific version of the music studio teachers' reality. We examined the music studio

structure and what was being said within it, either explicitly or implicitly.

In taking a deeper exploration with discourse analysis, we specifically contextualized the participants' words (Gumperz 1982, 1992) using Weimer's (2002) framing and Schön's (2016) ideas about self-criticism and self-reflection. These explorations are presented within the research question findings.

Findings
Research Question 1

When analysing the data relevant to Research Question 1: "During stimulated recall reflection interviews how do the music studio pedagogues describe their teaching and the observed lesson interactions?" the main subthemes to emerge were teaching strategies, lesson flow (pacing), student involvement (engagement), and interesting phenomena. These four subthemes are explored in relation to each of the observed lessons, with a framing of learner centeredness. Several of these principles emerged as we reanalysed the discourse from the interview transcripts. Discourse analysis is important in music studios given words used to describe one's teaching elucidate beliefs and assumptions about teaching. We suggest that the way teachers make sense of themselves, and their pedagogical practices, may be focused either on themselves (reflecting inward) or on their students (reflecting outward).

Gerald: Lesson 1

Teaching Strategies

Gerald was teaching a first-year undergraduate student who was studying music performance. Gerald seemed comfortable talking to the camera as well as the student. Yet in our interview he immediately offered an interpretation as to why, in his opinion, the student did not seem to be talking or interacting at all. The student was quite new to the school, having only started a few months prior. English was the student's second language and Gerald acknowledged that perhaps there was a language barrier. Gerald explained that he has set musical etudes and studies that all his students work through and that in the undergraduates, "by design we're focusing more on fundamentals." Gerald reflected about his choice to play in unison with his student and he observed that culturally, his students are "incredibly social and cooperative. They're cooperative learners." He noted that he enjoyed the collaborative aspect, saying that "we can both learn and I can show you and you can show me while we're playing at the same time." In analyzing his vocabulary, we noticed that vocabulary such as "design," "fundamentals," and "students" give insight into a *student-centered* belief system (Weimer,

2002). He noted that metaphors are difficult for learners for whom English is a second language and his choice indicates that he knows his learners; he knows what works and what does not.

Lesson Flow (Pacing)

Gerald noted that "if I wasn't on the video, Facebook Live, I probably would have slowed it down even more." For the lesson, the goal was to give the student information as well as sharing with an audience by sharing it on livestream. We note that perhaps direct information delivery could be seen as teacher centered. It serves the teacher's reputation to broadcast publicly, and he notes that if it weren't being broadcast, he would have changed his teaching. It is possible that the livestream was not in the best interest of the student and so perhaps less student centered than he intended.

Student Involvement (Engagement)

Gerald observed that there was perhaps a cultural element of deference, where the students defer to the teacher. Gerald explained that it "takes several years to kind of coax them out of that" acknowledging that his preference is for students to be at ease with him. The language Gerald uses can be understood to be Western centric and while Gerald's intention is for students to be at ease with him, perhaps the students would be more comfortable with offering deference to the teacher.

Gerald noticed that body language was a part of his approach, especially eye contact, because "I'm looking at them to see, do they understand, in fact, what I'm saying or are they just pretending to understand?" In analyzing his words more deeply, we see Gerald address the context of the situation in the video but he illustrates his own need for eye contact. Eye contact is a Western-centric expectation, and preferences regarding eye contact vary widely across cultures and individuals. We note that perhaps his need for eye contact is more teacher centered. His language shows that he wants to focus on the learner's need in the moment by looking at the whole learner: body language, eye contact, and coaxing a sense of ease from students, but we also note he is assuming that body language is universal in its meaning, both across cultures and individuals.

Interesting Phenomena

Gerald reflected on keeping a folder for each student, with lesson assignments, grades, and progress notes. He suggested that "sometimes I make them grade themselves." All his students complete a success plan and contract which he observed "is not only about playing the [instrument], but it's also teaching them about, all right, we're going to set goals, we're going to

walk through how to do it, we're going to check on it regularly" to try to help them succeed. Deeper discourse analysis allows us to note that Gerald clearly sees his change in the *balance of power* and in *evaluation* (Weimer, 2002), noting he gives students the opportunity to grade themselves. Gerald's use of "we" also illustrates that he believes in a collaborative, non-hierarchical approach. We do note however, that while Gerald believes in a non-hierarchical approach, we do not know whether his students experience the interactions as student-centered or teacher-centered when being made to grade themselves.

Charles: Lesson 1

Teaching Strategies

Charles was working with a law student undertaking voice lessons who he remarked has a "potentially big, beautiful instrument but it's difficult to manage." Charles' two main goals were to assist the student to "improve a little and get better and the second thing would be to really enjoy himself when he's doing it." Charles also referred to an emphasis "on the connection and rapport" with the student as a key strategy but felt he "could be more articulate" at times. Charles described that in general, his lesson plans "are fairly open" and he would have a different approach with a music major, in that "you're just dealing with the same things in greater depth and greater complexity."

Lesson Flow (Pacing)

In relation to the video segment observed, Charles felt "there are too many pauses. I just wish I was talking more quickly and got to the point, moved from A to B to C." He added that he was unsure if the lesson was "too slow to be meaningful to him." Despite his criticism of pauses, Charles felt at times he did "get into a little bit of a flow." In taking a deeper look at Charles' language, we notice that he is focused on himself, with the use of "I." We see his hesitancy; he was unsure about pacing and perhaps his language simply elucidates his inexperience in watching his own teaching on video.

Student Involvement (Engagement)

Charles considered the student's actions in the lesson and felt that "sometimes I think he just gives a good response because he enjoys the lessons rather than [because] he understands things." Despite his reservation, he added that the student "loves his lessons" and he receives "effusive comments," with his view being that his students are "really engaged" during lessons.

Interesting Phenomena

In relation to viewing the lesson, Charles felt "very self-conscious [and] I don't think it's representative of a lesson because I think we were both aware that we were being recorded." He also added that having the video camera in the lesson meant he adopted a more "self-conscious word choice" and the lesson "may have lacked the spontaneity that it normally has." However, he also acknowledged that if he was to video record lessons more consistently, "I guess at some point I'd be beyond that." In examining his word choice, Charles expresses his approach as self-conscious and "lacking," which we attribute to his inexperience but also understand as a courageous act of self-evaluation.

Charles: Lesson 2

Teaching Strategies

In a second session, Charles presented a video of a vocal lesson with an MBA student who was a beginner, with the goal to "Learn to sing on tune and get some foundation without neck tension … so we're building the voice gradually." He also commented that he felt it important to "get them kind of hooked, get them engaged, have them enjoy it because if you're their first teacher, you're really creating them." Similar to the first lesson, he again commented that he would "encourage students to record themselves whenever they can [because] you really can't hear what other people hear." In re-examining Charles' discourse it becomes clearer that Charles had a disconnect in assumptions; he had not previously considered recording his own teaching yet is a proponent of students recording their singing practice. This perhaps shows he believes the *responsibility of learning* (Weimer, 2002) is owned by the student.

Lesson Flow (Pacing)

One concern Charles raised in relation to pacing was his concern that some technical exercises were "taking a long time. But maybe that's just my own self-consciousness." Charles' self-consciousness becomes further evident, with the self-consciousness appearing in most of his exchanges with the researchers, similar to how it appears in the illustrative example. We can attribute Charles' self-consciousness to his inexperience and to the fact that he had not recorded or watched his teaching prior to the research study experience.

Student Involvement (Engagement)

One of the specific methods Charles talked about was having a student "tell me how they should do something … and turn them into the teacher." He also

referred to a moment when he asked the student in the lesson to focus on generating more volume, however the student stopped to ask if the tone was ok, hence they "went on to that but it made [Charles] think, wow … are our concerns that divergent?" Charles' words allow us to see perhaps an element of *learner centeredness* (Weimer, 2002) in his belief that the student can be the teacher.

Interesting Phenomena

Toward the end of the reflection, Charles referred to the importance of catering to different students, in that "it's dangerous if there's a one-size-fits-all approach." He then proceeded to discuss some of the specific technical differences between the two students in the videos and how he caters to these differences in terms of delivering the lessons. A deeper analysis illustrated that Charles knows or believes that all students are different and as such his approach as a teacher must differentiate between the needs of the individual students. In this sense he is *learner centered* (Weimer, 2002).

Cameron: Lesson 1

Teaching Strategies

Cameron was working with a private non-university student who was a professional music theatre actor and singer wanting to further develop his voice due to industry feedback. The focus of the lesson was to address technical issues, given his "larynx was so high" and he had "no top to his voice." He also commented that "I always try to ask myself before I go into a lesson, where did the student come from, what have we been working on," and that he adopts a sequenced approach "although it is flexible." Given that Cameron predominantly worked with professional singers, his overarching goal and teaching strategies were to "get them up and on a national tour where they don't see me for 9 months." Cameron's use of language illustrates a mix of self (teacher) and student focus.

Lesson Flow (Pacing)

In a similar manner to Charles, Cameron commented on his concerns about pacing in the first lesson, referring to a specific episode where he felt he "spent maybe 3 minutes too long on that." On the other hand, he later described how the researchers' observations of his high energy and positivity were due to his view that "there's a certain expectation in the industry where [teachers] have to be 'on' all of the time."

Student Involvement (Engagement)

One of Cameron's concerns was to ensure the student did not mimic his own voice, so set out to avoid him "singing with my voice or having that aural impression." He also commented that he believed the lesson required that the "cycle of energy … is reciprocal" between teacher and student. In the context of the student in the video, Cameron was of the view that he "responds to those high-energy situations for the most part." Finally, Cameron described a way to engage the student and other students through a questioning approach, for example, asking "what questions do you have about your singing?" Cameron's use of language again illustrates a mix of self and student focus with no obvious evidence of *learner centeredness* (Weimer, 2002).

Interesting Phenomena

Two interesting phenomena that Cameron identified were in relation to (a) how to bring "more of [the student's] energy, or his spirit, or his personality to his singing"; and (b) a concern that Cameron felt he may have been "technique-ing him to death." In watching the video he also felt he may be too verbal rather than demonstrative, pondering rhetorically "I wonder if I could use less words?" Discourse analysis reveals that Cameron is focused on himself with the use of "I" in the exchange, which is not evidence of learner centeredness, but perhaps can be attributed to his lack of experience in both teaching and participating in stimulated recall interviews.

Cameron: Lesson 2

Teaching Strategies

In the second lesson, Cameron was working with another student who had professional music theatre experience. With this particular student, Cameron realised he needed to take a less directive approach, therefore making the "conscious choice to … give him some time to try and figure it out" in the lesson. His general approach was also to "acknowledge his previous training while also moving him in a slightly different direction technically." At the same time, Cameron identified that the student can become resistant to direction (due to the previous training and professional experience) hence he "seems to respond better to … positive affirmation or validation" before making further adjustments. Cameron's language evidences his approach and it seems more teacher directed. He acknowledges that he wanted to move the student in a particular direction the student was resisting. Cameron is perhaps not focused on the learner's autonomy (Weimer, 2002).

Lesson Flow (Pacing)

In discussing the second lesson, Cameron responded to a prompt about pacing by stating that he has been "trying to make a concerted effort to talk less at my students in lessons." In the exchange, Cameron "talks at" his student, an action that is not learner centered. Cameron's use of "talks at" rather than perhaps using vocabulary such as "sharing," "talking with," "asking questions," or "explaining" serves to further support his teacher-centered beliefs as opposed to learner-centered beliefs (Weimer, 2002).

Student Involvement (Engagement)

Cameron commented that in the lessons with the student "the rapport is a little interesting between us," in that the "dynamic between us feels more collaborative as opposed to … didactic because, again, of how close we are in age." For example, he referred to a situation where he proposed four pieces, none of which the student liked, hence realising that if the student "wasn't in it or motivated in terms of the repertoire he wasn't going to do it." He then proceeds to explain how at times it can become "an intellectual … almost like a power dynamic issue." Cameron's use of words in the example are conflicting in intent. On the one hand, he knows the *balance of power* (Weimer, 2002) should be more equal yet he is not able to acquiesce to the student's desires.

Interesting Phenomena

One interesting element Cameron identified was in relation to a particular technical challenge the student had been working on, continuing for eight lessons without being resolved. In the lesson reviewed, the student resolved this technical challenge, Cameron commenting that "maybe he just needed to find it for himself or trust it, but I'm happy it happens eventually." In looking more deeply, Cameron acknowledges that he was unable to assist the student with an issue, allowing the student to find the solution themself. The self-criticism from Cameron presents a slight conflict because it seems not purposefully structured as *learner centered* (Weimer, 2002) but more by chance that the learner resolved the issue.

Findings
Research Question 2

The following sections consider findings in relation to Research Question 2: "Are there unintended benefits gained in the process?"

Charles: Lessons 1 and 2

Charles initially indicated some reservations, in that he "was kind of terrified" at the idea of the process, and further mentioned that "I could have done a much better video." Charles also commented on the impact of the camera in the lesson; however, he reflected on the fact that his students often audio record lessons and therefore he does not [did not] notice it anymore. His observation would suggest that further familiarity with a video recording process may lessen any potential negative impact. In a deeper discourse analysis, Charles' use of the word "terrified" illustrates his discomfort with the process initially and that he felt he did not share a good video. It is not clear whether he meant that due to his nervousness he could have taught better or whether the lesson that he chose to share with the researchers was the issue. We note clearly that the camera made him feel uncomfortable at first but that over time the discomfort dissipated between the first video and the second.

In discussing the second video lesson, Charles felt that a benefit of watching it was that "I think that he [the student] is getting what's going on. And I think I could be a little clearer in what I want." In general, Charles was more positive about his work in the lesson, feeling that he was "a little more engaged in this one" compared to the first lesson where he "was often intimating toward things and doing gestures without speaking about what was going on." He felt that he is now "making more of an effort to be sequential about how things are being done" as a result of watching the videos and hence the process "actually positively affected [his] teaching." Discourse analysis revealed more positive language, which indicates more positive beliefs and attitudes toward video recording the teaching and watching the video later with reflection. His "self-criticism" (see Schön [2016] in the Discussion section) led to more comfortable self-reflection between the two interviews.

Cameron: Lessons 1 and 2

One issue that Cameron noticed in relation to Lesson 2 was the student's intonation, commenting that "the tuning is a little funnier than when I heard it in the room … [I] might need to keep an ear out for that." In a later segment of the video that was viewed he commented on a "glaring technical issue" that the student was attempting to resolve. Cameron reflected in the interview that the student did not quite achieve the goal, hence he "could have been fussier to see if we could have nailed it in context." Another interesting aspect Cameron identified in reviewing Lesson 2 was how he observed a "push and pull of the pacing, where I'm trying to lay back and let him figure it out and I'm not sure if that's time well spent. I'm not sure yet." He also reflected on the fact that he has to "match him

energetically or he just … steamrolls me." Cameron's words, when considered through discourse analysis, indicate that he is engaged in self-criticism that is more linked to self-reflection and self-improvement. He allows space to consider "I might need to keep an ear out …" and "I'm not sure."

As a result of the video review, Cameron acknowledged that he has "tried to be more present with my students … instead of just having a plan in my head … [I check] is the student actually engaged? Are they present in their bodies? Is their personality showing up in the exercising or is it … vacant?" An additional development for Cameron was that he acknowledged "trying to make more of a concerted effort to be more aware … of what the student is doing instead of just how they're sounding." Cameron's words convey that he sees a need for improvement, questioning his approaches and level of engagement. He is not as self-critical as Charles and Cameron's use of "concentrated effort" perhaps implies he tried harder to improve between the two teaching lessons and interviews.

In analysing the discourse in exchanges, we see that both Cameron and Charles are focused on themselves and what they experienced between the two interviews. There is perhaps a minor noticeable change in their beliefs about their teaching, a genuine desire to improve, to (in their words) "do better," "be clearer," "be more present," and be "more aware." These all speak to adjustments that would improve their learners' experiences, so arguably indicate emerging learner-centered beliefs.

Limitations

It should be acknowledged that the current study only involved three teachers, each of whom identified as male; however, given the difficulty of recruiting teachers in the studio setting, the sample was deemed valid to identify preliminary findings. In addition, we noticed our participants created reasons or explanations about what they were seeing in the videos and what were real connections. Gass and Mackey (2000) might characterize such connections as "links between prompted actions and intentions" (p. 4). We suggest that perhaps without the research study interview process, our participants may not have made those connections. We acknowledge that we do not know the depth of each teacher's understanding of their pedagogies, nor the degree to which their reflections are valid. We also acknowledge that we did not ask specifically their thoughts on the experience. We were not able to conduct a second interview with Gerald, which does not illustrate any potential benefits in the process for him specifically. We also recognize that we cannot make broad claims about this process outside of novice teachers who teach primarily graduate students. Although we garnered a

general sense that it was a positive experience for two novice teachers, future research should determine directly how studio teachers feel about video-stimulated recall reflection and more deeply explore how it might change their pedagogical choices across multiple interview sessions.

Discussion

In our findings we see two extremes of higher education teaching. Teachers with 1–5 years of experience might be considered novice or beginning, and teachers such as Gerald can be seen as experienced, with more than 15 years of teaching practice. Our findings align with the findings of Duke and Simmons (2006) and Parkes and Wexler (2016) with respect to how expertise is demonstrated in studio teachers. We observed that especially for the two less experienced teachers, their willingness to participate could be seen as courageous as they noted their nervousness at times. Both Cameron and Charles noticed differences between their first and second interviews as reflective spaces where they could explore their teaching without fear of exposing their pedagogical practices, as they might otherwise have felt as part of a formal teaching evaluation. Similar to Carey and Grant's (2015) findings, we found that assisted reflection impacted the teachers in two ways. There was a desire to adjust or reframe teaching practices and approaches, as seen in Cameron's second interview where he acknowledged "trying to make more of a concerted effort to be more aware." In addition, they felt that the process was useful, as seen in Charles' second interview where he indicated that the process "actually positively affected" his teaching. We wonder what might have happened if we had continued to meet with both Cameron and Charles.

Our findings suggest several implications for future practice. For beginning teachers, stimulated recall interviews seem to be a process that may have value. Beginning teachers might consider watching their own teaching videos and engaging in their own systematic reflection on their own. Alternatively, they might consider simulated recall interviews with other teachers after watching each others' videos. Based on our study findings, we recommend that less-experienced teachers probe pedagogical choices, outcomes, and "puzzling, troubling, or interesting phenomena" (Schön, 2016, p. 50) with more experienced colleagues. Perhaps the process has the potential to be of significant value for all studio teachers as a means of professional development, or self-evaluation, especially if they focus more on learners and what is being learned in addition to what they are doing as teachers and what is being taught. Research with additional studio teachers would offer further findings, whether to confirm our insights or

to add new issues and points of discussion. Carey et al. (2018) argue for both the benefits of reflection as a way for teachers and students to develop their practice, as well as to support the need for much greater research and inquiry. Although there may be similar procedures occurring in practice at some institutions, as far as we know there is no extant research which investigates how reflection on action using video review and stimulated recall interview benefits participants apart from the study by Hultberg (2005).

Conclusion

The studio lesson has certain advantages in that it is a very intimate teaching space and provides an opportunity for students to have dedicated individual attention. As seen in our study, the teaching might be improved when teachers conduct stimulated recall interviews about their teaching. Teachers may find it beneficial to focus on their teaching and pose questions about puzzling, troubling, or interesting phenomena in their teaching to others that they trust. Professional development processes in studio teachers seem to be scant so a process such as stimulated recall might offer studio teachers a way to improve their teaching and their relationships with their students. When the working relationship between student and teacher is very successful, it can be a powerful learning environment. Our study points to one way that teachers can reflect on their teaching, in a nonjudgmental setting to consider their educational practice and to discuss ways of developing their skills. It is hoped that the reflection on action strategy discussed in our study offers a way forward for higher education studio teachers with beneficial outcomes for both teachers and students.

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Appendix A

Interview Prompts

The initial questions comprised the following prompts:
    a) What do you see happening here?
    b) What were your thoughts on doing this activity?
    c) What were you thinking when you decided to do this?
    d) Why did you decide to do that?
Exploratory prompts:
    a) Can you describe the goal the student is trying to reach?
    b) Did you choose it or did they?
    c) How would you describe the timing or pacing?