Commentary on "Embodiment Consciousness in Music Performance Pedagogy" by Alves and Nogueira

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ABSTRACT: This commentary on Alves and Nogueira (2024) proposes a potential approach to compare expert and non-expert music teachers' use of embodied teaching strategies in one-to-one lessons with advanced performance students. The approach is hypothesis-driven, and builds on Alves and Nogueira's theoretical framework of expert competency domains, as well as empirical studies of musical communication and one-to-one teaching strategies. It is argued that a comprehensive definition of embodied teaching strategies should be conceptualized in terms of the quality of teacher–student interactions and the measurable outcomes of those interactions, and that it should account for the wide range of verbal and non-verbal forms of embodied musical communication that arise.

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ONE-TO-ONE teaching is at the core of formal music education, especially in tertiary-level performance studies. In the Western art music tradition, there is a long history of expert performers serving as teachers. Indeed, some of the most revered performers have also been notable teachers (e.g., pianists Clara Schumann, Franz Liszt, Edwin Fischer, and Lilya Zilberstein, among others). While some such remarkable individuals have expertise in both performing and teaching, this is not the case for all performer-teachers. Some expert performers who lack formal training in teaching may have specific shortcomings in their teaching style, such as an inability to articulate the mechanics of performance, a tendency to dominate their students, or an inability to adapt their teaching strategies to cater to individual students (Persson, 1994).

In the last few decades, music education has moved away from equating expertise in performance with expertise in teaching. Expertise in performance is no longer considered a sufficient qualification for teaching; rather, teaching is now recognized as its own domain, with teachers expected to develop knowledge in pedagogical methods and theories of learning (Carey, Grant, McWilliam, & Taylor, 2013). In parallel, the domain of music pedagogy has experienced a shift in focus toward the learner and toward the question of how music should be taught in order to prepare students for the evolving challenges of today's music industry (Mills, 2004).

Ongoing discussions in music education concern the best ways to nurture students' developing individual expressive styles. This may involve giving students the opportunity to explore expressive ideas and means of creating music from early in their studies, rather than teaching them to imitate the style of their teacher (Meissner, 2021). Some studies have considered what the benefits of group and peer-to-peer learning might be (Schiavio, Küssner, & Williamon, 2020) and how to broaden access to music education through technologies that allow for remote teaching and learning (Schiavio & Nijs, 2022).

Alongside these changes, there has been increased interest in developing frameworks to conceptualize the skills that distinguish expert from non-expert teachers in instrumental performance. Such frameworks have practical value, since they form a basis for criteria against which teachers can be evaluated, and are of theoretical interest as well, since they contribute to our general understanding of musical development and expressive interaction.

OVERVIEW OF THE PAPER BY ALVES AND NOGUEIRA

The paper by Alves and Nogueira investigates expertise in the teaching of high-level clarinet performance with the aim of developing a competency framework for eventual application to teacher evaluation. The authors initially developed their framework based on literature examining teaching practices among high-level instrument teachers. They tested the validity of the framework by observing expert teachers during one-to-one lessons and carrying out semi-structured interviews with those teachers and their students.

Their observations validated the original framework, but led to some restructuring and consolidation of the hypothesized fields of competency, as well as the introduction of a new field focused on embodiment, which they termed "embodiment consciousness." The addition of this field was supported by teachers' use of multimodal metaphors to describe sound (e.g., dark, bright, blue) or musical effects (expand and contract, tension and release, smudging or smoking the sound), as well as their focus on developing students' anticipatory imagery (see Trusheim, 1991; Bishop, Bailes, & Dean, 2013) and use of body gestures in "telling the story of the music." Overall, the teachers drew on common multimodal experiences and the different kinds of memory that result (sensory, episodic, semantic, affective) to communicate difficult-to-verbalize ideas and develop students' abilities to express themselves musically.

The term that Alves and Nogueira use to describe this competency field, embodiment consciousness, derives from Damasio's conceptualization of consciousness as emerging from the actions of the body in its environment. They draw, in particular, on the idea of core consciousness, which Damasio equates with "the sense of here and now" and distinguishes from the extended or autobiographical consciousness that supports a person's sense of identity (Damasio, 2010). Core consciousness emerges as a person establishes non-linguistic awareness of the relationships between the self and external objects (Parvizi, 2001). According to Alves and Nogueira, expert music teachers use methods of communication that enable shared understanding with students of non-verbal aspects of experience related to "being and doing."

Alves and Nogueira's study contributes to the field of music education with evidence that expert teachers use a metaphor-based embodied approach to teaching expressivity to high-level performance students. Their formalized framework of teaching competencies could eventually be used as a basis for evaluating teachers, although research is first needed with teachers of different levels to understand whether the criteria do indeed distinguish experts from non-experts. Their study also contributes more broadly to the field of social cognition with evidence of how people communicate verbally about difficult-to-explain experiences.

RECOMMENDATIONS FOR EMPIRICAL TESTING

Looking to the future, and how ongoing research might build on these contributions, we might first reflect on the questions that Alves and Nogueira's study addresses. Driving the study is the question of what skills characterize expertise in the teaching of high-level instrument performance. This question is partially addressed by the authors' findings, which describe a wide range of skills demonstrated by a small sample of expert clarinet teachers. However, as noted above, a more complete answer would require systematic testing of whether these skills are unique to expert teachers and, if so, how they develop over time.

In the remainder of this commentary, I discuss how this question might be addressed, focusing on how Alves and Nogueira's expert competency framework could be extended to support comparisons between expert and non-expert teachers. I consider some of the methodological challenges that would arise, and, in particular, I discuss how strategies for data collection with non-expert teachers might be designed to minimize researcher bias and maximize control over potentially confounding variables (e.g., student performance level). I also discuss how an intentional focus on teacher–student interactions rather than teacher behavior might facilitate shaping the framework to be optimally representative of the teaching competencies involved in one-to-one teaching, while also allowing competencies to be defined in terms of measurable outcomes (e.g., improvements to student performance).

Methodological considerations

Alves and Nogueira's study drew on a dataset of teachers' interviews to refine and expand their original theory-based competency framework. Research building on this study might take a similarly exploratory approach, using interviews to establish a competency framework that describes practices of non-expert teachers, with the aim of eventually integrating the expert and non-expert frameworks.

There are some scientific risks to such an approach. An exploratory study that is implicitly informed by a framework but does not define explicit hypotheses based on that framework could be subject to bias. The researchers may implicitly compare the new population of non-expert teachers against the established framework, instead of allowing a new data-driven framework to emerge. The result could be an incomplete framework that misses dimensions of practice that are unique to non-expert teachers.

Another, perhaps complementary, approach would involve explicitly evaluating data from non-expert teachers against the established expert framework. This approach would necessitate defining competency domains in terms of testable criteria or hypotheses. Taking the domain of embodiment consciousness as an example, the description in the paper emphasizes the use of expressive metaphors: "expert teachers use metaphorical appropriations from different fields of knowledge to access memories that evoke embodied meanings …" To formulate a testable hypothesis about how this applies to expert and non-expert teachers, we might propose that experts use expressive metaphors with their students while non-experts do not. However, studies with music teachers of varying expertise have reported widespread use of metaphors in teaching practice (Lindström, Juslin, Bresin, & Williamon, 2003; Laukka, 2004). Furthermore, some of the metaphors that are given as examples in the paper are common vocabulary for describing music, even among non-experts—for example, dark or bright sound (Eitan & Timmers, 2010). Therefore, arguably, the use of expressive metaphors may not be sufficient to distinguish expert and non-expert teachers. A more plausible hypothesis might be that expert teachers use a wider range of metaphors, and that they use them to reference more complex concepts than do non-expert teachers.

The authors' original strategy for data collection (interviews with teachers, using video from one-to-one lessons for stimulated recall) is an effective way of documenting naturalistic teacher–student interactions. Alternative or complementary strategies would include systematic, independent analysis of the video recordings that are captured during lessons. This might involve coding and categorizing situations, events, and/or activities carried out by the teachers and students. Some previous studies, using video recordings of one-to-one lessons, have developed such a coding system and examined how frequently different teaching strategies and types of teacher–student interaction occur (e.g., Duke & Simmons, 2006; Parkes & Wexler, 2012).

If Alves and Nogueira's dataset were expanded to include video recordings and interviews with non-expert teachers, it would be important to control the familiarity between teachers and students. An expert teacher and advanced student pair who have worked together for a long time might have shared knowledge and linguistic code that facilitate communication, but that are hidden during interviews and recordings. Some preliminary research has explored how long-term familiarity between musical partners, in combination with their performance expertise, affects the strategies that they use while rehearsing ensemble music together (Ginsborg & King, 2012). Partners with long-term familiarity (i.e., established duos) were more likely to give opinions, while partners without long-term familiarity were more likely to ask for orientation. Professionals were also more likely than students to give opinions. Patterns of interaction between teachers and students could also be expected to change in specific ways over time: for example, less detailed explanation may be needed as the student learns the teacher's style of interpretation.

With an expanded dataset, it would also be important to control the performance level of the students. Less expert teachers are normally assigned to teach less experienced students, who place different demands on teachers' skills than do advanced students, potentially leading different competency domains to be relevant. Parkes and Wexler (2012) and Duke and Simmons (2006) investigated teaching practices in one-on-one lessons with university music students, using similar methodology but different participant samples. While Duke and Simmons focused on expert artist-teachers and high-level university students, Parkes and Wexler focused on experienced—but not as highly acclaimed—teachers and mid-level university students. Interactions between experienced teachers and mid-level students differed from interactions between expert teachers and high-level students: experienced teachers were more tolerant of students' errors, placed greater focus on technical issues (e.g., fingering, rhythms, and pitch security), and gave students less freedom to interpret music independently, instead relying on demonstrating their own ideas and having students imitate them. These differences in teaching strategies were likely due to a combination of factors relating to teacher expertise and students' performance skills.

At present, the competency framework proposed by Alves and Nogueira focuses primarily on teachers' thoughts and behavior. Shifting the focus away from teachers' behavior and toward teacher–student interactions might be beneficial as the framework undergoes further development. Intensive, goal-directed, two-way interaction distinguishes one-to-one lessons from other formats of music education, such as lectures, masterclasses, group lessons, and informal mentoring. A student may contribute more to how the lesson

unfolds in one-to-one lessons than in masterclasses or group lessons, where the teacher's attention is divided between multiple students. Indeed, although one-to-one lessons are a formalized means of music education (more formalized than, for example, informal mentoring or peer-to-peer learning) and generally proceed according to a standard script or set of rules, there is some room for the teacher and student to negotiate these rules in real time (Schiavio, Maes, & van der Schyff, 2021). Therefore, we might expect teachers to use a different approach in one-to-one lessons from the approaches they use in other settings—perhaps a more flexible approach, which is more individualized to the student and has a greater role for the student. A framework that is meant to describe teaching competencies in one-to-one lessons should ideally capture the nature of interactions that are most characteristic of that specific educational context.

A focus on teacher–student interactions would facilitate defining competency domains in terms of measurable outcomes—that is, in terms of how students' understanding and/or performance skills develop instead of in terms of what teachers say or do. Competency domains that are defined in terms of measurable outcomes could be readily transformed into testable hypotheses or criteria against which non-expert teachers could be evaluated. For instance, embodiment consciousness might be defined in terms of how successfully teachers use metaphors to communicate complex expressive ideas that students are able to integrate into their playing. Communication, defined as the successful transfer of ideas from one person to another, is an interactive process that requires contributions from both the person presenting ideas (the teacher) and the person receiving those ideas (the student). Communication between teachers and students is usually part of a bidirectional interaction in which the student gives some feedback about whether they have understood the teacher's direction through body language, spoken responses, or changes implemented successfully in their instrument performance. We might expect that non-expert teachers, in contrast to expert teachers, fail to engage in metaphoric communication or communicate unsuccessfully, perhaps because their metaphors are difficult to interpret or do not reference experiences that are shared by the student.

Empirical evaluation of embodiment consciousness

In this final section, I focus on the competency domain of embodiment consciousness and propose a potential approach to systematically evaluate the relevance of this domain to expertise in teaching performance. The approach that I propose is informed by the embodied music cognition framework, which has been key in shaping music-related research since the early 2000s, and which Alves and Nogueira also explore in their paper. Its principal argument is that the body is centrally involved in constructing musical meaning during music performance and perception, and it is thereby part of a system of sensorimotor, introspective, and social components that determines how music is felt, experienced, and understood (Maes, Leman, Palmer, & Wanderley, 2014; Leman, Maes, Nijs, & Van Dyck, 2018).

Aspects of this argument have been explored in depth empirically. For example, the relationship between music and movement is well documented and suggestive of the contribution that the body makes to musical understanding. Some evidence comes from the language that we use to describe music, which commonly includes motion-related terminology (Eitan & Granot, 2006). Music with certain rhythmic features, furthermore, makes people want to move (Toiviainen, Luck, & Thompson, 2010; Stupacher, Hove, & Janata, 2016), and most people, even those without formal training in dance or instrument performance, can align their body motion to music with a beat (Burger, Thompson, Luck, Saarikallio, & Toiviainen, 2013). Music performers move not only to produce and shape sound, but also in ways that are not strictly necessary for sound production, and that express the performers' understanding of higher-order features of music structure and emotional associations (Wanderley, Vines, Middleton, McKay, & Hatch, 2005; Thompson & Luck, 2012; Demos, Chaffin, & Logan, 2018). Music also has systematic effects on physiological arousal (Bernardi, 2005; Laeng, Eidet, Sulutvedt, & Panksepp, 2016; Mojtabavi, Saghazadeh, Valenti, & Rezaei, 2020). These findings together demonstrate that people reliably associate musical features with features of body motion, and that music provokes embodied responses in listeners. Other lines of research—for example, showing that people's motor capabilities and experiences have fundamental effects on how they perceive musical structure (Maes et al., 2014)—further substantiate the view that the body is not only influential, but centrally involved in musical sense-making.

Embodiment is thought to play a critical role in musical communication. Throughout the twentieth century, musical communication was described as a unidirectional flow of information from composer to score to performer to listener, a conceptualization that reflected the dominating focus on Western classical score-based music and a romanticized view of the classical composer, whose intentions were presumed to be paramount. Today, musical communication is described as an emergent process resulting from dynamic low-

level interaction between people, mediating technologies, and the environment in which the musical interaction is situated (Moran, 2014; van der Schyff, Schiavio, Walton, Velardo, & Chemero, 2018). Shared musical understanding results from a combination of top-down influences, including common knowledge and intentions that participants bring to the interaction, bottom-up influences relating to the exchange of sensorimotor information, and factors related to cognitive abilities and personality (e.g., empathy and agreeableness), which affect how readily people process social information (Carlson, Burger, & Toiviainen, 2018; Novembre, Mitsopoulos, & Keller, 2019).

Building on studies of embodied musical communication, the approach that is proposed below is conceived with three aims: first, to further specify the definition of embodiment consciousness so that it includes a comprehensive description of embodied teaching techniques; second, to clarify which aspects of embodied teaching strategies distinguish expert and non-expert teachers; and third, to examine why expert teachers might make more systematic use of embodied teaching strategies than do non-expert teachers.

While Alves and Nogueira's report focused on teachers' use of metaphors drawing on common embodied experiences, I would propose also examining teachers' use of overt body motion, including the gestures that they use when speaking to students (Simones, 2019), non-verbal vocalization (Tolins, 2013), direct touching of the student (e.g., to correct hand posture), and demonstrations with the instrument. These strategies differ in how plainly they present the teacher's musical ideas and, correspondingly, how much work the student has to do (or how much freedom they have) to interpret the teacher's direction.

On one hand, we might suppose that expert teachers are more successful communicators than non-expert teachers, and that they therefore choose strategies that are more effective in conveying their ideas. On the other hand, expert teachers may choose potentially less effective methods of communication that require more interpretative effort by the student in order to push them to develop their own musical voice and expressive skills. Simones, Rodger, and Schroeder (2015) classified gestural behaviors that teachers used during one-to-one piano lessons with beginner and intermediate-level students and found differences in how frequently some types of gesture were used with students of different levels. Touch and mimicry were used more often with beginning students, while metaphoric and iconic gestures were among those used more often with intermediate students. We might hypothesize that expert teachers of advanced students are both effective and flexible with their communication strategies, such that their choice of strategy depends on students' abilities, knowledge of the music, and real-time responses. Non-expert teachers, in contrast, may be less effective at communicating musical ideas and more rigid with their choice of strategies, failing to adapt them appropriately in line with students' real-time responses.

This is not a straightforward hypothesis to evaluate scientifically, especially under naturalistic conditions. To examine teachers' adaptability, one needs a way of systematically evaluating the fit between teaching strategies and students' responses. To start, an initial study might draw on video recordings of lessons by expert and non-expert teachers—importantly, with the same sample of students or students with the same level of skill and ambition—and teacher interviews that aim to explain what happened during the lessons. This study could document the range and frequency of teachers' different embodied teaching strategies, including metaphors, gestures, vocalizations, and demonstrations, and tag them according to the situation in which they arise (e.g., the teacher's first attempt to communicate an expressive idea or a follow-up attempt to clarify) and the student's response (e.g., asking for clarification, attempting to play but not successfully implementing the teacher's direction, or attempting to play and partially or fully implementing the teacher's direction). In effect, this would involve classifying teacher–student interactions on the basis of teaching strategy, stage of learning, and student response.

The first phase of analyzing these data might involve evaluating the quality of communication that occurs between teachers and students, using the outcomes of those interactions as a measure of success. We might predict that expert teachers are better communicators than non-expert teachers, so students of expert teachers are able to implement directions more quickly (i.e., with less back and forth) than students of non-expert teachers. If this were true, for expert teachers, the data would show more instances of students immediately implementing teachers' directions (fully or partially, noting that students might need multiple attempts to successfully modify their playing, even once they understand what is expected of them). For non-expert teachers, that data would show more instances of students requesting clarification or failing to implement new directions.

A second phase of analysis might involve calculating (i) how frequently expert and non-expert teachers use different types of embodied teaching strategies in different situations and in response to different student feedback, and (ii) how often different situations and types of student feedback arise for expert and non-expert teachers. We might predict that experts tend to give verbal directions (using metaphors) when

initially introducing an idea, rather than demonstrating, suggesting that they prioritize strategies that require more effort on the part of the student. Experts might also rapidly adapt their strategy if the student cannot immediately implement the direction, indicating adaptability. Non-experts, in contrast, might be quicker to turn to demonstrations, and persist in repeating the same strategy instead of adapting to the needs of the student.

This approach builds on studies where situations and behaviors that arise during one-to-one lessons are coded in terms of what gestures are used (Simones et al., 2015) or how they relate to short-term goals or communication strategies (Duke & Simmons, 2006; Parkes & Wexler, 2012). These codes are then used to inform a classification framework that allows for quantitative analysis (e.g., frequency counts or comparisons). Importantly, this could be done in a way that focuses on the variety of teacher–student interactions that arise and accounts for the outcome of those interactions. Such an approach would show how expert and non-expert teachers differ in their use of embodied teaching strategies as well as why such strategies are effective. Of course, some shortcomings could be anticipated. By reducing a substantial dataset into a classification framework, there is a risk of losing detail and diversity, leading to an over-simplified understanding of the different teaching strategies that are used and interactive contexts that arise. Furthermore, the approach described above examines interactions as they unfold across short timescales (minutes) rather than interactions that unfold over longer timescales (successive lessons), although the latter could be probed in interviews with teachers. This approach is also not comprehensive in terms of the hypotheses that it addresses. Further research, for example, could test the hypothesis that was suggested earlier in this commentary: that expert teachers use a wider range of metaphors and reference more complex musical concepts with them than do non-expert teachers.

CONCLUSIONS

Alves and Nogueira introduced a novel framework delineating the competency domains that they propose to characterize expertise in teaching of high-level music (clarinet) performance. Their discussion elaborates on the domain of embodiment consciousness, which relates to teachers' use of metaphors in communicating musical concepts. This commentary has addressed the question of how this framework—and especially the domain of embodiment consciousness—might be developed to account for observable differences in the embodied teaching strategies of expert and non-expert teachers. Ultimately, this line of research presents an opportunity to bring together theory, methodologies, and findings from music cognition and music pedagogy to show how embodied musical communication unfolds in the unique case of one-to-one instrumental teaching.

END MATTER

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