Author/s:
McPherson, GE;Blackwell, J

Title:
Teacher Feedback in Collegiate Instrumental Music Lessons

Date:
2024

Citation:
McPherson, G. E. & Blackwell, J. (2024). Teacher Feedback in Collegiate Instrumental Music Lessons. Journal of Research in Music Education, 73 (2), https://doi.org/10.1177/00224294241265014.

Persistent Link:
https://hdl.handle.net/11343/348052

Original Research Article

National Association for Music Education

Journal of Research in Music Education
1–20

DOI: 10.1177/00224294241265014
jrme.sagepub.com

Sage

Teacher Feedback in Collegiate Instrumental Music Lessons

Gary E. McPherson[1] and Jennifer Blackwell[2]

Abstract

Teacher feedback is an integral component of helping students understand their current level of achievement and what they can do to improve their performance. This study built on literature in educational psychology by adopting a framework developed by Hattie and Timperley to explore how different types of feedback are used in studio instrumental lessons. For this study, we investigated the use of feedback of highly experienced collegiate instrumental studio music teachers ($N = 6$) and their students ($N = 18$). Results indicated that around 83% of all teacher comments were classified as "feed-back" (i.e., reflections on what the student just played), with far fewer focused on "feed-forward" (16%) strategies for improving performance and "feed-up" (<1%) goal setting. Task-level comments on what the student had just done comprised 85% of the feedback, in contrast to process-level (9%) feedback that provides strategies for improving the next performance attempt and self-regulation comments (<1%) that cue the learner to monitor and control their own performance. Discussion of these results include comparisons between classroom and studio teaching practices and ways of refining instrumental teachers' abilities to provide more targeted and effective feedback to their students.

Keywords

feedback, instrumental music, studio lessons, performance teaching, self-regulation

[1]University of Melbourne, Southbank, VIC, Australia
[2]Northwestern University, Evanston, IL, USA

Corresponding Author:
Gary E. McPherson, Melbourne Conservatorium of Music, The University of Melbourne, Ian Potter Southbank Centre, Building 880, Room 431, 43 Sturt St, Southbank, VIC 3006, Australia.
Email: g.mcpherson@unimelb.edu.au

From making their first sounds on an instrument to performing in a recital at the end of a music degree, student musicians rely on feedback to develop their skills. This feedback can take many forms, from a teacher providing explicit instruction for improvement to a peer providing helpful comments or a student simply monitoring their own progress and deciding how to proceed. Regardless of where this feedback emanates, its crucial role in the learning process is to provide guidance for action so that the learner can use the feedback to improve their performance. The timing, clarity, and purposefulness of feedback all contribute to how useful it is for improving performance.

Feedback in Music

Feedback is seen as having a powerful influence on learning and is integral to instrumental music lessons (de Bruin, 2024). Feedback can have positive and negative implications but is fundamental to how effectively teachers are able to motivate their students and impart knowledge, skills, and understanding. Expert teachers, according to de Bruin (2024), "reflect on a wider palette of approaches, with wisdom, passion, and the capacity for accommodating diverse learners and differentiated strategies" (p. 32). This point highlights the role of teacher growth and professional development for promoting high-level performance teaching skills at all levels. Recent studies in music have focused on teacher use of feedback (Biddlecombe, 2012; Blackwell, 2022; Blackwell et al., 2020; Bonshor, 2017; Emerson et al., 2019; Hamond et al., 2020; Hill, 2019; Wilhelm & Cranmore, 2017), self-evaluative feedback (Boucher et al., 2021; Dorfman, 2021; Edelman & Talbert, 2020), and the use of self-evaluative and peer feedback by music students (Chaffin & Manfredo, 2010; Legette & Royo, 2021; MacLeod & Nápoles, 2011; Nápoles & Bowers, 2010).

Although feedback has been studied in a variety of music teaching settings (e.g., Boucher et al., 2021; Hamond et al., 2020; Karlsson et al., 2009), Blackwell et al. (2023), who conducted a PRISMA review of all extant research on feedback in music, noted that most of the research on feedback in music did not define the term or use it consistently, resulting in a lack of coherence in the literature. In their view, literature on feedback in music education is (a) broadly outdated, (b) lacks methodological rigor, and (c) suggests a need for more in-depth studies across more varied music contexts.

Indeed, Duke (2005) demonstrated that feedback is one of the most misunderstood aspects of teaching music. He highlighted that there are numerous possible sources of feedback, including peers, the individual, and the sound of the instrument itself, and that "the teacher is neither the only source nor the most important source of feedback, even in the classroom" (p. 121). Duke argued "the function of feedback can be independent of its intent" (p. 124) because if feedback was not understood when received, the student would not be able to act on the information. This is consistent with Hattie and Clarke's (2018) assertion that the reception of feedback by the learner was the most important consideration in whether it would be useful for learning rather than focused entirely on its delivery. From another perspective, Parkes (2018) provided a valuable overview of the ways in which feedback has been explored in music contexts.

Parkes explained that music feedback has generally been studied in terms of teacher behaviors, peer feedback and self-feedback, and self-evaluative sensory feedback in music performance (referring to the biofeedback musicians experience while listening and feeling in performance). These contributions have provided a useful overview of conceptions of feedback in music, which can be further enhanced by theoretical conceptions of feedback proposed in educational research.

Feedback in Education

One of the most authoritative conceptions of feedback in the education literature is an integral part of Hattie's (2009, 2012) *Visible Learning* approach, as explained in detail by Hattie and Timperley (2007). Within this conception, feedback is seen as information provided by an agent regarding aspects of one's performance or understanding. Agents, in this case, can be the teachers, parents, peers, online and printed resources, or even the students themselves. This process therefore is not simply a one-way directional process from teacher to student because the student can provide feedback to the teacher that helps to clarify what they understand, what they are struggling to comprehend, and how learning might be structured for greater understanding and skill as the student progresses. Feedback from the student to the teacher helps teachers to consider their impact on learning, adjust instruction, and consider different types of future feedback (Hattie, 2012). It also helps students to develop their ability to self-regulate their performance (Carless et al., 2010) by providing them with information about their actions in real time and in ways that encourage behaviors aimed at improving performance that is based on new information that impacts resultant actions (Bandura, 1986).

Biddlecombe (2012) argued that every instance of feedback has distinct characteristics, be it positive or negative, specific or general, evaluative or descriptive, verbal or nonverbal, and directed at either the individual or a group. According to Boud and Molloy (2013), feedback processes support learning if students can participate in dialogue about learning and are able to monitor and assess themselves and when assessment tasks incorporate feedback to enhance their capacity for future learning. Additionally, to meet the definition of feedback—compared to simply criticism, praise, or neutral information—the student must be able to take action to improve their learning based on the feedback, meaning that they must both understand the feedback and know how to put it to use (McPherson et al., 2022). Indeed, within educational psychology, "feedback literacy" is seen as "the understandings, capacities and dispositions needed to make sense of information and use it to enhance work or learning strategies" (Carless & Boud, 2018, p. 1315). Integral to this approach is the need for learners to be active rather than passive recipients of feedback, view feedback as necessary for improvement, actively seek out feedback, be able to critique and constructively offer feedback to others, and where appropriate, interpret and act on feedback that is provided by others.

In *Visible Learning* (Hattie & Clarke, 2018), Hattie and colleagues defined three forms of feedback that can be useful to understand the variety of possible perspectives in the feedback process: "feed-back," "feed-forward," and "feed-up" (Hattie & Clarke,

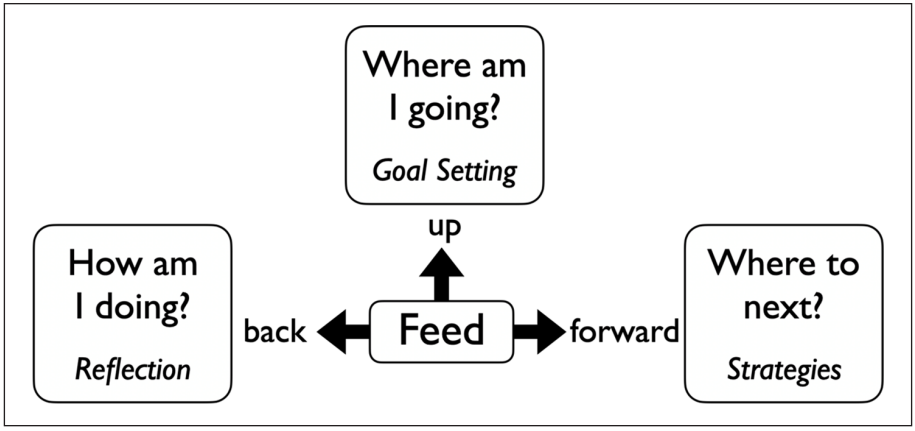

Figure 1. Visual Depiction of Feed-Back, Feed-Up, and Feed-Forward
Source: Adapted from Hattie and Clarke (2018).

2018; Hattie & Timperley, 2007; see Figure 1). Feed-back addresses the question "How am I going/doing?" by comparing a learner's current performance with their previous performance, such as comparing an improvement in note accuracy from one lesson to the next. Feed-forward focuses on "Where to next?" in identifying strategies that can be employed to master a technical or musical challenge. Feed-up focuses on the question "Where am I going?" and compares what a learner can do now with a desired learning target, such as identifying a student's next step in learning a challenging technical passage or how repertoire should sound when fully mastered. Research suggests that students value feed-forward most due to the focus on the future (Hattie & Clarke, 2018). This conception of feedback encompasses past, present, and future perspectives, all of which provide guidance for achieving educational goals (see also, McPherson et al., 2022).

In addition to the three feedback types, the Hattie and Timperly (2007) model identified four feedback levels: "task," "process," "self-regulation," and "self" (see also, McPherson et al., 2022). Task-level feedback refers to how teachers provide information on the content of what has just been learned, facts associated with learning the task, and how well the task has been completed. In an instrumental lesson, providing information on how correct or incorrect a performance was can be powerful, especially when it is provided immediately after the performance. In contrast to task-level feedback, which reflects on what the student has just done, the focus of process-level feedback is on where to go next and the strategies that can be applied to improve one's performance on the next attempt. A key feature of process-level feedback is that the teacher works with the student to identify a more appropriate or refined strategy for improving performance. Self-regulation feedback is when a learner receives information that cues how they subsequently monitor and control their own use of strategies for completing a task. In this level, the emphasis is on scaffolding the student to evaluate their progress and develop the confidence needed to continue their

own development. In short, learners personally activate and sustain their own cognition, affect, and behavior in a way that is systematically oriented toward attaining their personal goals (Zimmerman & Schunk, 2011). A key component of self-regulation-level feedback therefore is to cue the learner to take personal responsibility for monitoring and controlling their own performance through support, prompts, and evaluation of their self-regulated learning. Finally, self-level comments are included in the Hattie and Timperley (2007) model to describe comments that refer to the person. Self comments (e.g., praise that is directed at the student, such as "You're really good" or "You're a star!") are ineffective because they do not carry information that can aid a performance and often deflect the student's attention from the task. As Hattie and Timperley noted, "the effects at the self-level are too diluted, too often uninformative about performing the task, and too influenced by students' self-concept" (p. 96) and therefore unlikely to result in learning gains.

The framework proposed by Hattie and colleagues has been suggested to be an innovative means for analyzing teacher feedback in peer and self-assessment (Brown et al., 2012) and classroom settings (Brooks et al., 2019). In music, the framework has recently been proposed as a useful means for examining the type and level of feedback that takes place in music performance learning contexts (e.g., Blackwell et al., 2023; McPherson et al., 2022).

Aims of the Study

Our study had two aims: (a) to examine the applicability of using a methodology that has been used to study the type and level of classroom teacher verbal feedback as defined by Hattie and Timperley (2007) and (b) to investigate how this methodology could be applied to studying instrumental music teachers' feedback in a studio setting. The first aim was inspired by work by Brooks et al. (2019) that analyzed the verbal feedback provided by a teacher with 30 years of experience who was renowned for being able to establish a positive classroom climate and achieve strong academic results from students. This study adopted Hattie and Timperley's framework for categorizing feedback by type (feed-back, feed-forward, feed-up) and level (task, process, and self-regulation, notably omitting self) to analyze the feedback provided by this renowned public school general teacher across 12 seventh-grade classes. Our second aim applied the same technique as used in the Brooks et al. study to examine the types of verbal feedback provided in studio one-to-one instrumental lessons by experienced performance teachers and use this information to identify practices that might improve instrumental music teachers' abilities to provide feedback that is appropriate and provides the type of information needed for students to maximize their learning.

Method

Participants

Participants were six eminent instrumental teachers and 18 university instrumental music majors located in a prominent university music program in the midwestern

United States. Participants played violin (two teachers), flute, French horn, trombone, or tuba. Of the student participants, 11 identified as female and seven as male, and they reported having spent 6 to 13 years taking private lessons. The six university-level teacher participants have international reputations in performance and pedagogy, reported from 15 to 50 years of teaching experience in prominent music schools, and had spent 20 to 57 years as professional performers. Four of the teacher participants identified as male and two as female. The videos used in this study were drawn from a larger video data set of collegiate studio lessons for an externally funded, multiinstitutional research grant comprising of a series of studies for which data were collected across a 5-year period; final institutional ethics approval was provided in September 2017. A total of 18 one-hour lesson videos were analyzed for the present study; three lessons with different students were selected for each of the teachers to provide a broader picture of their teaching than would be offered from observing a single student. We chose these teacher participants because although some of the teachers in the larger data set allowed one lesson to be recorded, all these teachers permitted three recordings, which allowed us to get a richer picture of their teaching.

Procedures and Measures

Video Recording. The lessons were recorded in the teachers' regular studio music space at their usual time. A research assistant attended lessons in each studio to set up a Zoom Q4n video recorder but did not observe the lesson; they later returned to collect the equipment. The camera placement for each lesson was set in consultation with the teacher so that both the teacher and student would be visible as much as possible and it would be possible to observe their interactions at the time of coding the data. The video recordings were then transferred to a secured cloud drive for storage and subsequent analysis.

Coding Protocol. Verbal transcripts of the lesson video files were created with the transcription software Otter.ai (2022; Version 3.18.0). Transcripts were then checked for accuracy against the video recordings by a research assistant. These transcripts include both the text of the verbal interactions of the lesson and the timing at which they happened during the lesson. Eighteen separate Word files of the transcripts, representing each of the 18 hours of video-taped lessons and comprising a total of 69,593 words from the teachers ($M = 3{,}866.28$ words per lesson, $SD = 1{,}267.11$; range = 2,207–6,726 words per individual lesson), comprised the total set of transcripts that were subsequently coded. Because we were interested in teacher feedback, only teacher comments were coded and included in the final analysis, although student comments provided an important context for understanding the lessons.

The coding protocol involved a consideration of two elements for each comment made by the teacher. The first action was to categorize the feedback type by identifying the purpose of the feedback (i.e., feed-back, feed-up, feed-forward), after which we then identified the feedback level (i.e., task, process, self-regulation, self). Unlike the Brooks et al. (2019) classroom study, we chose to include self-level feedback so

that we would be able to consider its prevalence regardless of its effectiveness. In accord with Brooks et al., we did, however, also code a very small number of comments that added other information that was directed not to the student personally but to the effort, process, self-regulation, or engagement the student demonstrated when trying to master a performance challenge (e.g., "That was really great because you didn't slow down this time and managed to show me you've mastered that technical issue"). These types of comments were coded as process if they involved the student trying a new approach or strategy or self-regulation if aimed at persuading the student to monitor or control their own cognition.

Coding Process. Using NVivo software (QSR International Pty Ltd, 2023; Version 14.23), two researchers coded all 18 lessons across different categories of feedback type (feed-back, feed-forward, feed-up) and level (task, process, self-regulation, self) as explained in the Hattie and Timperley (2007) and Brooks et al. (2019) articles. The two authors/coders first worked through three transcript files from representative videos with other teachers at the same institution that were not included in the study to become familiar with the type of comments made by teachers during lessons and to pilot the coding scheme to ensure it was viable in this learning environment. They then undertook 18 separate research sessions (one for each instrumental lesson) to code all feedback comments made by the teachers. These research sessions ranged from 70 to 120 minutes depending on the amount or complexity of teacher comments within each lesson. Separate files for each lesson were displayed in NVivo, from which a master coder input codes for each of the 10 dimensions of feedback while observed by a second reliability coder (Syed & Nelson, 2015). For each input, the master coder highlighted the text of the teacher comment and stated what she believed to be the appropriate code (e.g., "feed-back, task"). After the master coder highlighted and then stated what she felt was the type and level of feedback provided, the reliability coder stated whether he agreed ("yes") or disagreed ("no, discuss"). If both agreed on the coding, then the master coder input this decision into NVivo by coding the comment. Coding the feedback was relatively straightforward, but in approximately 10% of the cases, where the reliability coder disagreed, discussion centered around how much of the wording should be represented in the individual code or which of the types or levels of feedback best represented the teacher's intentions.

Table 1 shows indicative comments that were coded for each of the categories of type and level. To contextualize these examples, it is important to note that instances of feedback task involved the teacher identifying some strength or weakness on the performance they just heard. In contrast, feed-forward task involved the teacher identifying some strength or weakness on the performance they just heard plus either a performance by the student immediately after this feedback was given to act upon the teacher's comment or identifying that the student should work on this specific issue in future practice but without providing specific strategies. Feed-back process involved explaining an example of how to improve the section, commenting on a learning process, or providing a strategy that might be applied to improving the section but not allowing the student to then trial this suggestion or strategy in a performance immediately after the feedback

Table 1. Indicative Comments for Each Type and Level of Feedback.

	Feed-Back	Feed-Forward	Feed-Up
Task	"Yeah, that's a lot better." "Yeah, you missed your four before you find your three." "Trill [was] two beats too short."	"Let's do eight and see if you can follow through on just the arm." "And I'd like you to apply that here on these last notes. I mean, we're not going to do it the way a singer would do it with that consonant, but it's a concept and you heard it right away. They were able to do that. See if we can apply that to your last notes here."	"So where's your goal? If you were singing where would you aim for?" "One good goal in the mouthpiece is to have the same pitch—on the air attack and the articulated one."
Process	"Do you feel how it can contact the string a little bit differently? Good, now, there's a change because you shifted your violin, so you have to just be aware." "Two things—I want you to single tongue every note and let's not accent the last note of each group don't play [sings incorrect and correct models]. It'll phrase better and breathe better, I think." "So when it's not perfect or something like that, don't do something, but rather, let go more. Okay, your tendency is going to be 'I'll fix it!' and then that's tension. If it wobbles or if something isn't right, let go even more."	"The way that I practice this is with a broken chord, so it's really hard to fix that with the left. So I [models broken chord exercise]." "So go very slowly—just play from there and then just pay attention to whether you feel that connection." "So practice this and you're going to stop whenever it doesn't sound—right, perfect practice, remember we're talking about that." "Now I want you to do that [exercise] every day."	"So you're going to play the first three bars. And it's what I do a lot in lessons and a lot in the practice room. Play it three times, make it better each time. I try to, you know, like make it better each time. And then we'll talk about what you changed that might have made any part of that better. So, you have to look for what might have been better, even 1% better. And then what physical things you change to accomplish that." "No rush. I'll repeat: those three bars three times. Make them better each time. Whatever part—there's a lot there. Actually, let's just go [sings] Okay, that, three times. You can stop and take a break between each. And this is how you practice it, too."
Self-regulation	"Right! And it's out of tune; which direction?" "So is there a place that you worked specifically that you felt was a challenge?"	"So, you know, last three chords, where would you practice, what would you isolate?" "So what is the sound you want to get on the fourth note, now you're saying what it wasn't?" "What's the difference in air in the low register, and what are you going to think about?"	"Not expectations or all that, or perfection, but have crazy high standards and a low tolerance for you having a high quality—a quality gap, between your best and what are you doing." "What could be better? Consistently there's one aspect of your playing that's inconsistent and it would make sense to have an idea of what you're trying to achieve with this."
Self-person	"I still don't completely trust you." "You're a genius."		

Table 2. Total Numbers of Counts and Their Overall Percentages, Segregated by the Different Feedback Classifications.

	Feed-Back	Feed-Forward	Feed-Up	Total
Task	2,894 (76.5%)	327 (8.6%)	6 (0.2%)	3,227 (85.3%)
Process	108 (2.8%)	240 (6.3%)	2 (0.1%)	350 (9.2%)
Self-regulation	150 (4%)	55 (1.4%)	2 (0.1%)	207 (5.5%)
Total	3,152 (83.3%)	622 (16.3%)	10 (0.4%)	3,784 (100%)

was given. Feed-forward process involved the teacher explaining an example of how to improve the section or a strategy that might be applied to improve the section plus a performance by the student immediately after this feedback was given to action the teacher's suggestion or identifying that the student should work on this specific issue in future practice using the teacher's suggested process.

Feed-back self-regulation is often phrased in the form of a question and asks the student to identify an issue with their previous performance. Feed-forward self-regulation asks the student to identify how they could work on a passage to improve their playing, specifically focused on their ability to self-monitor and improve on their own. Feed-up task, process, or self-regulation teacher comments involved an explanation of the goal (sometimes combined with modeling) of an ideal performance that was either explained but not actioned (task), explained and/or then modeled in a teacher performance that the student then attempted to act upon (process), or modeled and discussed in a way that required the student to come up with an idealized goal or performance (self-regulation). Finally, the self-person comments that we coded all involved personal praise or criticism to the learner that did not convey information that was actionable in a subsequent performance. For this reason and consistent with the Brooks et al. (2019) study, we deleted self comments from Table 2 but included them in Table 3 to consider differences in their use across the six teachers.

At the beginning of the process, the two coders agreed that any comment where there was not a consensus should be independently evaluated by a third coder. For all 18 lessons, agreement was reached for all comments, but it was deemed prudent to have an independent check of the coding to safeguard against bias. A graduate-level music education research assistant with prior knowledge of Hattie and Timperley's (2007) work completed an independent check of 10% of the coding, totaling 378 comments that were randomly chosen from across the 18 lessons. After the research assistant completed their independent coding, their codes were compared to our original coding to determine the level of agreement; there was agreement for 365 of 378 (96.6%) comments from the original coding, which we deemed to be acceptable for establishing reliability of the coding process. In addition, during the process of reviewing the text of each lesson, informal discussion not directly related to the lessons (e.g., asking how the student's day was), which typically occurred at the beginning and/or end of the lesson, were not included within the coded data we prepared for further analysis.

Table 3. Frequencies of Teacher Comments and Number of Words for the 18 Lessons.

Teacher	Duration	FB-T	FB-P	FB-S	FF-T	FF-P	FF-SR	FU-T	FU-P	FU-SR	Self	Total
Teacher 1: violin												
Student 1	56:44	100	5	11	15	21	6	0	0	0	1	159
Student 2	55:59	105	11	0	10	16	2	0	0	0	1	145
Student 3	57:05	114	1	0	14	12	0	1	0	0	1	143
Teacher 1 collapsed		319	17	11	39	49	8	1	0	0	3	447
Total feedback words		3794	367	108	718	1,257	224	13	0	0	20	6,501 (69.0%)
Total words												9,423
Teacher 2: violin												
Student 1	58:05	214	0	0	3	0	0	0	0	0	4	221
Student 2	57:36	233	4	0	10	14	0	0	0	0	3	264
Student 3	58:47	258	4	0	14	15	0	0	0	0	4	295
Teacher 2 collapsed		705	8	0	27	29	0	0	0	0	11	780
Total feedback words		5155	80	0	220	335	0	0	0	0	91	5,881(74.2%)
Total words												7,923
Teacher 3: trombone												
Student 1	51:39	69	5	5	14	16	1	0	0	0	2	112
Student 2	51:52	93		6	16	22	0	0	0	0	2	139
Student 3	53:42	121	6	2	76	26	0	0	0	0	0	231
Teacher 3 collapsed		283	11	13	106	64	1	0	0	0	4	482
Total feedback words		3032	337	129	889	930	38	0	0	0	25	5,380 (65.3%)
Total words												8,243
Teacher 4: flute												
Student 1	1:04:08	138	0	3	11	1	0	0	0	0	0	153
Student 2	58:08	151	4	12	13	16	5	0	0	0	14	215

(continued)

Table 3. (continued)

Teacher	Duration	FB-T	FB-P	FB-S	FF-T	FF-P	FF-SR	FU-T	FU-P	FU-SR	Self	Total
Student 3	1:04:12	148	5	5	6	2	0	0	0	0	1	167
Teacher 4 collapsed		437	9	20	30	19	5	0	0	0	15	535
Total feedback words		7844	116	175	441	427	65	0	0	0	227	9,295 (72.7%)
Total words												12,785
Teacher 5: French horn												
Student 1	1:01:05	113	22	36	3	21	10	5	0	2	3	215
Student 2	1:04:19	202	17	23	4	18	19	0	2	0	1	286
Student 3	51:28	214	10	32	4	12	3	0	0	0	2	277
Teacher 5 collapsed		529	49	91	11	51	32	5	2	2	6	778
Total feedback words		7592	1702	1417	274	1685	752	140	131	49	19	13,761 (77.0%)
Total words												17,864
Teacher 6: tuba												
Student 1	59:07	202	7	3	30	9	1	0	0	0	5	257
Student 2	50:39	178	1	4	23	2	2	0	0	0	2	212
Student 3	56:35	241	6	8	61	17	0	0	0	0	0	333
Teacher 6 collapsed		621	14	15	114	28	3	0	0	0	7	802
Total feedback words		7555	373	171	1,696	633	49	0	0	0	26	10,503 (78.6%)
Total words												13,355

Note: FB-T = feed-back task; FB-P = feed-back process; FB-S = feed-back self-regulation; FF-T = feed-forward task; FF-P = feed-forward process; FF-SR = feed-forward self-regulation; FU-T = feed-up task; FU-P = feed-up process; FU-SR = feed-up self-regulation; Self = self-level feedback.

Results

The final NVivo data set consisted of counts of comments made for the six high-level instrumental teachers (two violin, one flute, one French horn, one trombone, and one tuba). Table 2 provides a summary of the coded categories for all 18 lessons, shown by type (feed-back, feed-forward, feed-up) and level (task, process, self-regulation) and by the number of counts and their overall percentages. As shown in Table 2, 83.3% ($n = 3{,}152$) of the total comments were classified as feed-back, with 16.3% ($n = 622$) feed-forward and only 0.4% ($n = 10$) feed-up. Likewise, 85.3% ($n = 3{,}227$) of the comments were coded as task, with only 9.2% ($n = 350$) process and 5.5% ($n = 207$) self-regulation. Of the 3,151 feed-back comments, 76.5% ($n = 2{,}894$) were coded as task, with only 2.8% ($n = 108$) process and 4% ($n = 150$) self-regulation.

Table 3 shows a breakdown of the coding for each of the 18 lessons provided by the six teachers to three of their students. Not all comments from teachers were coded as feedback, thus the total number of words coded as feedback is smaller than the total number of words used by the teacher during the entire lesson. We have included the percentage of overall words coded as feedback to highlight this difference. As is evident in Table 3, there was a wide range of coded feedback comments depending on the teacher. Teachers 5 and 6, for example, gave 778 and 802 comments, respectively, across their three lessons, compared with 447 and 482 for Teachers 1 and 3, respectively. Examining all 18 lessons by the six teachers and their individual students shows that only two teachers—Teachers 1 and 5—provided feed-up comments (one and nine comments, respectively). Overall, the pattern of comments for the three student lessons was relatively similar for each individual teacher, with slight differences between teachers according to the number of overall comments and type/level of feedback. Of most interest was Teacher 5 (french horn), who could be distinguished from the other teachers by the spread of comments across all types and levels of feedback. Notably, this teacher gave more self-regulation comments than any of the other teachers.

Table 3 also shows a breakdown of self comments by the six teachers. Teachers 1, 3, 5, and 6 all gave few praise comments (range = 19–26 words) across their three lessons, compared to Teachers 2 and 4, who gave 11 and 15 (91 and 227 words) of these types of comments, respectively. Most of the self comments given by the flute teacher, who gave these comments the most, were critical, expressing frustration with the student and their lack of ability to hear issues the teacher identified.

Using the Spearman's ρ statistic, as a nonparametric measure of association between the rankings of any two variables, we computed rank correlation coefficients for counts of different teacher feedback comments according to type and level. This revealed that there were no significant correlations between any of the three feedback types (feedback total, feed-forward total, feed-up total) and that the only substantial correlation by level was between process total and self-regulation total ($\rho = .54$), indicating a positive association between these two variables such that greater values of one was associated with greater values of the other. This result indicates that teachers who gave more process-level comments were more likely to also encourage their students to self-regulate by interrogating how they might monitor and improve their own performance.

Table 4. Relative Frequency of Studio Teacher Feedback According to Feedback Type and Level in Comparison to Frequencies Reported in Brooks et al. (2019, p. 23).

	Feed-Back		Feed-Forward		Feed-Up	
Type/Level	Frequency, This Study	Frequency, Brooks et al.	Frequency, This Study	Frequency, Brooks et al.	Frequency, This Study	Frequency, Brooks et al.
Task	.77	.42	.09	.11	<.01	.24
Process	.03	.04	.06	.06	<.01	.06
Self-regulation	.04	.04	.01	.02	<.01	.01

Relative frequency results for the intersection of feedback type and level are shown in Table 4. Table 4 provides information for our study in a different format to Table 2 by displaying the results as relative frequency distributions for each type and level of feedback instead of the count and percentage for each of these. It is provided as a supplement to directly compare results for our instrumental teachers with results obtained in the Brooks et al. (2019) study, which displayed results for the classroom teacher in this format (and which did not include information on specific counts for each type and level of feedback used by the classroom teacher). It is important to recognize the differences in teaching context between the classroom-based study by Brooks et al. and our current study of collegiate studio instrumental teaching. Nonetheless, comparisons between these two learning contexts are supplied here given that the current study replicates the earlier classroom study, and taken together, both serve as examples of some of the challenges of teaching in both group and individual learning contexts.

Discussion

In this study, we demonstrated how verbal feedback used in studio lessons can be categorized by type and level using the Hattie and Timperley (2007) framework. Using a top-down, theoretical approach (Braun & Clarke, 2006), we adopted Hattie and Timperley's model as the conceptual framework from which to code the verbal feedback present in 18, one-hour lesson transcripts. This coding protocol was modified from prior work by Brooks et al. (2019) that focused on 12 lessons by a single seventh-grade teacher on a unit of English.

In the classroom lessons observed by Brooks et al. (2019), feed-back task comments were the most prevalent form of feedback, although at a lower frequency (42% of all comments in the classroom study compared with 77% of all comments in our instrumental teaching study). Importantly, feed-up task comments in the Brooks et al. study were also much higher (24% of all comments in the classroom study compared to less than 1% in our instrumental teaching study). It is important to note, however, that in our studio lessons, nonverbal behaviors, such as modeling, conducting, and singing, might take the form of feed-up that are not accounted for in the present verbal

research protocol. In all other dimensions, feedback in the Brooks et al. study was generally similar.

Our study extends work undertaken using a renowned teacher in a school classroom setting (Brooks et al., 2019) with distinguished one-to-one instrumental teachers in a university studio setting. From the outset, it is important to note that the Brooks et al. (2019) study involved only one teacher with data collected across 12 lessons. Our study involved six teachers who were teaching three students each. Our primary aim, however, was to demonstrate the feasibility of using the Hattie and Timperley (2007) framework for studying feedback within a music setting and to explore practices that would help teachers improve what research has consistently shown across multiple education settings to be a prime factor in teacher effectiveness, that is, the quality and consistency of feedback (McPherson et al., 2022; Wisniewski et al., 2020).

As Wisniewski et al. (2020) stated, "Feedback, on average, is powerful, but some feedback is more powerful" (p. 13). In educational psychology, feedback has been found to be more effective when it contains more specific, usable information for the learner (Hattie, 2009; Wisniewski et al., 2020). This finding was also evident to us when coding the teacher feedback in the present study. Many of the statements we heard on the recordings and read in the transcripts could be described as short utterances or monologue in which the student was relatively passive. In contrast, the types of dialogue that would clearly establish suitable strategies for eventually mastering a performance issue or establishing an idealized and realistic goal that the student could strive to achieve, either in the short term (e.g., by the next lessons) or longterm (e.g., prior to the end of semester performance), provided richer learning information and more opportunity for student input.

In our study, feed-back—information about how the student is going/doing—was by far the most common form of feedback evident in these studio lessons. Feed-forward—information on the next steps and strategies to apply to improve skill—and feed-up—information about where the student is going and the goals that might be set—were far less evident. A feature of the feedback given in the studio lessons we observed was that a large majority of comments were focused at the task level and thus "aimed at building surface understanding" (Brooks et al., 2019, p. 26) rather than guiding the learner to reflect on their performance in ways that would encourage them to self-regulate as opposed to just rely on their teacher's advice.

We were also surprised by the lack of explicit goal setting during lessons, especially given that the students would all have an end of semester performance examination that could serve as a specific target goal for discussion in lessons. In the Brooks et al. (2019) study, the teacher gave the class a preassessment to determine what they knew and what they needed to learn. We believe this form of evaluation could be used in music instruction also, where a teacher could spend time with the student to explicitly identify at the outset of learning a new work what the student needs the most instruction on and what they may already know and be able to accomplish. Establishing mastery goals for the learning process and making these explicit at the beginning of the learning phase would help ensure that the student becomes more actively involved in their own learning rather than a passive recipient of their teacher's feedback by just

following directions (for a more detailed discussion of achievement goals, see Elliot & Murayama, 2008). Put another way, McPherson et al. (2022) stated that when learning criteria and lesson goals are clear to learners, they are better positioned to take more responsibility for their own learning and strive to achieve their personal best. Because they learn to assess their own progress and set realistic expectations, they are also more likely to become self-confident and place trust in their own abilities.

Making learning objectives explicit and discussing success criteria are essential skills for teachers to develop. These forms of mastery orientation and goal setting can be contrasted with the more short-term goal setting seen in performance teaching, where a teacher provides a positive exemplar of the performance through modeling how a passage should sound during the lesson (Miksza, 2022). We observed many occasions where this nonverbal form of feed-up was used in the lessons, but in virtually every case, the form of goal setting involved the teacher performing a passage of the work so that the student could mimic this model on the next attempt. Whatever the verbal or performance-related feedback provided by a teacher, an important element of this process is that both the teacher and the student possess a shared understanding of what the goal might sound like and the process that will help the student reach this goal (McPherson et al., 2022).

The large majority of feed-back (83.3%) comments and far fewer Feed-forward (16.3%) and feed-up (0.4%) comments suggest, as with other classroom studies, that students are being given feedback on how they are going/doing but far less information on what their next steps might be for improving their performance. This became clear to us as we analyzed the transcripts of Teachers 1 (violin) and 5 (French Horn), who were more adept at providing feed-forward, process, and self-regulatory forms of feedback. By encouraging self-monitoring, practice strategies, and goal setting, these teachers spent time helping their students develop the skills needed to improve their performance on their own. Although assessing teaching effectiveness was not a goal of this study, it was clear that these teachers were equipping their students with the tools necessary to become skilled, autonomous, self-regulated musicians.

Another issue in relation to feedback type concerns the degree to which the students are feedback literate in the sense of displaying "the understandings, capacities and dispositions needed to make sense of information and use it to enhance work or learning strategies" (Carless & Boud, 2018, p. 1315). To do this, they need to appreciate receiving feedback; develop their critical capacities for making judgments and self-critiquing their own learning and development; manage their own emotions, particularly when facing obstacles or setbacks; and act on the feedback they receive from their teacher. Although student feedback literacy was not the focus of this study, future research might investigate whether certain types of feedback might better promote students' ability to understand and improve their musicianship from teacher feedback. Because feed-forward, feed-up, process, and self-regulatory feedback are focused on developing learning skills and focused on further development, these forms of feedback may better prepare students to be both feedback literate and self-regulated learners. Additionally, it is possible that some important feedback in music contexts is

nonverbal, and thus, future research might consider methods for how to capture that important dimension of feedback.

Although feed-back and task-level feedback was the most common, this does not mean that all feed-back or a focus on tasks is ineffective for learning. Some task feedback was highly specific and provided useful information for learning (e.g., "Your martelé is very consistent throughout the bow; I think that it looks like your hand is really nice and loose"), whereas other comments were nonspecific or provided criticism without solutions (e.g., "Okay, still not good"). Additionally, some task feedback was focused on what not to do (e.g., "Yeah, don't schmear that [section]") versus feed-back focused on what the student should do (e.g., "You have to adjust for the thumb to come around a little bit, to make sure that that you're not too far that way"). The difference between these comments highlights an important feature of feedback: that quality matters. Indeed, many of the comments provided by teachers might not be received as feedback at all because (a) they did not provide the student with information about improvement and (b) they may simply be received as praise or criticism.

In visible learning theory (Hattie, 2009), the types and levels of feedback are viewed as offering students differing levels of understanding. Task-level feedback builds surface-level understandings (Hattie, 2012) that provide a foundation for the student to develop deeper and more sophisticated understandings of a concept, idea, or skill (Brooks et al., 2019). Feed-up task, on the other hand, prepares students for the task they are about to accomplish by establishing the types of expectations and idealized models for the student to match or accomplish. As mentioned previously, we found few instances of the process and self-regulation levels of feedback. To a lesser extent, this was also true in the Brooks et al. (2019) study and other studies of classroom teachers that reported less than 2% of self-regulation feedback (Hattie & Gan, 2011; van den Bergh et al., 2013). The notable exception in our study was Teacher 5 (French horn), who provided more self-regulation feedback than any other teacher. Future research might try to identify teachers who are adept at providing this important form of feedback and identify what factors contribute to their style of teaching.

As reported by Brooks et al. (2019), process- and self-regulation-level feedback enable learners to develop deeper understandings (Hattie, 2012) and the type of goals that can challenge them to achieve their own personal best. As suggested in *Visible Learning* (Hattie, 2012; Hattie & Clarke, 2018), when a teacher asks a student, "Is there anything specific you'd like to achieve by the end of this lesson?," they are establishing and making explicit goals that can form the basis of deeper level learning strategies. For this to be most effective, however, it is important to encourage students to answer this question by expressing process-oriented goals aimed at improving their overall performance ability rather than goals where they place an emphasis on a particular outcome.

This study leaves open many questions and issues requiring further attention. Most importantly, there is a need to replicate the findings with other forms of performance teaching and at less advanced stages of musical development. In our view, the framework we are proposing for coding the type and level of feedback provided by instrumental teachers was robust and valid. However, more work is needed to develop the

technique so that it can provide information in a form that could easily be conveyed back to teachers and used by them to improve their own teaching. Improvements would not involve massive changes to the proportion of feedback types and levels but, rather, awareness of ways that feed-forward, feed-up, process, and self-regulation types and levels of feedback can help get the best out of students.

In this regard, researchers might attempt to catalogue some of the prompts, questions, and comments that encourage deeper level learning and critical self-regulation in students. Additionally, studies of how feedback literacy can be developed in ways that equip students with the skills necessary to be active participants in their own learning as they seek to understand what they can already do well, where they need to improve, and what they need to do next. We agree with Mandouit and Hattie (2023), who advocated the use of feedback models that include the student perspective; enable students to hear, understand, and apply feedback; and provide the types of markers of "effective" feedback that help students achieve their personal best.

In conclusion, this study outlines a framework we believe can be used in future studies. We recognize, however, that verbal feedback by the teacher is only one form of feedback during a performance lesson. Expanding the approach reported here by comparing verbal teacher comments with nonverbal teacher feedback, such as modeling of performance, and student verbal and nonverbal feedback to themselves and to their teacher will help compile a more complete understanding of the complexity of feedback within studio performance lessons.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Jennifer Blackwell https://orcid.org/0000-0001-8574-5703

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Biddlecombe, T. (2012). Assessing and enhancing feedback of choral conductors through analysis and training. *International Journal of Research in Choral Singing*, *4*(1), 2–18.

Blackwell, J. (2022). "Mistakes are just information": A case study of a highly successful violin pedagogue. *International Journal of Music Education*, *40*(1), 78–89. https://doi.org/10.1177/02557614211025770

Blackwell, J., Matherne, N., & McPherson, G. (2023). A PRISMA review of research on feedback in music education and music psychology. *Psychology of Music*, *51*(3), 716–729. https://doi.org/10.1177/03057356221109328

Blackwell, J., Miksza, P., Evans, P., & McPherson, G. E. (2020). Student vitality, teacher engagement, and rapport in studio music instruction. *Frontiers in Psychology: Performance Science*, *11*, Article 1007. https://doi.org/10.3389/fpsyg.2020.01007

Bonshor, M. (2017). Conductor feedback and the amateur singer: The role of criticism and praise in building choral confidence. *Research Studies in Music Education*, *39*(2), 139–160. https://doi.org/10.1177/1321103X17709630

Boucher, M., Creech, A., & Dubé, F. (2021). Video feedback and the self-evaluation of college-level guitarists during individual practice. *Psychology of Music*, *49*(2), 159–176. https://doi.org/10.1177/0305735619842374

Boud, D., & Molloy, E. (2013). Rethinking models of feedback for learning: The challenge of design. *Assessment & Evaluation in Higher Education*, *38*(6), 698–712. https://doi.org/10.1080/02602938.2012.691462

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brooks, C., Carroll, A., Gillies, R. M., & Hattie, J. (2019). A matrix of feedback for learning. *Australian Journal of Teacher Education*, *44*(4). https://doi.org/10.14221/ajte.2018v44n4.2

Brown, G. T. L., Harris, L. R., & Harnett, J. (2012). Teacher beliefs about feedback within an assessment for learning environment: Endorsement of improved learning over student well-being. *Teaching and Teacher Education*, *28*(7), 968–978. https://doi.org/10.1016/j.tate.2012.05.003

Carless, D., & Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment and Evaluation in Higher Education, 43*(8), 1315–1325. https://doi.org/10.1080/02602938.2018.1463354.

Carless, D., Salter, D., Yang, M., & Lam, J. (2010). Developing sustainable feedback practices. *Studies in Higher Education*, *36*(4), 395–407. https://doi.org/10.1080/03075071003642449

Chaffin, C., & Manfredo, J. (2010). Perceptions of preservice teachers regarding feedback and guided reflection in an instrumental early field experience. *Journal of Music Teacher Education*, *19*(2), 57–72. https://doi.org/10.1177/1057083709354161

de Bruin, L. R. (2024). Instrumental music teachers' development of feedback across the lifespan: A qualitative study. *International Journal of Music Education*, *42*(1), 32–46. https://doi.org/10.1177/02557614231151445

Dorfman, J. (2021). Project peer assessment in a preservice music technology course. *Contributions to Music Education*, *46*, 71–90. https://www.jstor.org/stable/27125931

Duke, R. A. (2005). *Intelligent music teaching: Essays on the core principals of effective instruction*. Learning and Behavior Resources.

Edelman, P. B., & Talbert, M. D. (2020). An exploration of the effect of instructor visual signal on vague feedback statements by preservice music educators. *Journal of Music Teacher Education*, *29*(2), 53–63. https://doi.org/10.1177/1057083719878409

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology*, *100*(3), 613–628. https://doi.org/10.1037/0022-0663.100.3.613

Emerson, K., Williamson, V., & Wilkinson, R. (2019). Once more, with feeling: Conductors' use of assessments and directives to provide feedback in choir rehearsals. *Musicae Scientiae*, *23*(3), 362–382. https://doi.org/10.1177/1029864919844810

Hamond, L., Himonides, E., & Welch, G. (2020). The nature of feedback in higher education studio-based piano learning and teaching with the use of digital technology. *Journal*

of Music, Technology & Education, *13*(1), 33–56. https://doi.org/https://doi.org/10.1386/jmte_00015_1

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge.

Hattie, J., & Clarke, S. (2018). *Visible learning: Feedback*. Routledge. https://doi.org/10.4324/9780429485480

Hattie, J., & Gan, M. (2011). Instruction based on feedback. In R. Mayer, & P. Alexander (Eds.), *Handbook of research on learning and instruction* (pp. 249–271). Routledge.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, *77*(1), 81–112. https://doi.org/10.3102/003465430298487

Hill, S. C. (2019). "Give me actual music stuff!": The nature of feedback in a collegiate songwriting class. *Research Studies in Music Education*, *41*(2), 135–153. https://doi.org/10.1177/1321103X19826385

Karlsson, J., Liljestrom, S., & Juslin, P. N. (2009). Teaching musical expression: Effects of production and delivery of feedback by teacher vs. computer on rated feedback quality. *Music Education Research*, *11*(2), 175–191. https://doi.org/10.1080/14613800902924532

Legette, R. M., & Royo, J. (2021). Pre-service music teacher perceptions of peer feedback. *Research Studies in Music Education*, *43*(1), 22–38. https://doi.org/10.1177/1321103X19862298

MacLeod, R. B., & Nápoles, J. (2011). Preservice teachers' perceptions of teaching effectiveness during teaching episodes with positive and negative feedback. *Journal of Music Teacher Education*, *22*(1), 91–102. https://doi.org/10.1177/1057083711429851

Mandouit, L., & Hattie, J. (2023). Revisiting "The Power of Feedback" from the perspective of the learner. *Learning and Instruction*, *84*, Article 101718. https://doi.org/10.1016/j.learninstruc.2022.101718

McPherson, G., Blackwell, J., & Hattie, J. (2022). Feedback in music performance teaching. *Frontiers in Psychology: Performance Science*, *13*, Article 891025. https://doi.org/10.3389/fpsyg.2022.891025

Miksza, P. (2022). Practice. In G. E. McPherson (Ed.), *The Oxford handbook of music performance* (*Vol. 1*, pp. 153–172). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190056285.013.9

Nápoles, J., & Bowers, J. (2010). Differential effects of instructor feedback vs. self-observation analysis on music education majors' increase of specific reinforcement in choral rehearsals. *Bulletin of the Council for Research in Music Education*, *183*, 39–46. https://www.jstor.org/stable/27861471

Otter.ai. (2022). *Otter voice notes*. https://otter.ai/home

Parkes, K. A. (2018). Instructional feedback in music. In A. A. Lipnevich, & J. K. Smith (Eds.), *The Cambridge handbook of instructional feedback* (pp. 219–239). Cambridge University Press. https://doi.org/10.1017/9781316832134.012

QSR International Pty Ltd. (2023). *NVivo qualitative data analysis software* (Version 14). https://lumivero.com/products/nvivo-qualitative-data-analysis-software/

Syed, M., & Nelson, S. C. (2015). Guidelines for establishing reliability when coding narrative data. *Emerging Adulthood*, *3*(6), 375–387. https://doi.org/10.1177/2167696815587648

van den Bergh, L., Ros, A., & Beijaard, D. (2013) Teacher feedback during active learning: Current practices in primary schools. *British Journal of Educational Psychology*, *83*(2), 341–62. https://doi.org/10.1111/j.2044-8279.2012.02073.x

Wilhelm, R., & Cranmore, J. (2017). Assessment and feedback practices of secondary music teachers: A descriptive case study. *Visions of Research in Music Education*, *29*, 1–23.

Wisniewski, B., Zierer, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. *Frontiers in Psychology*, *10*, Article 3087. https://doi.org/10.3389/fpsyg.2019.03087

Zimmerman, B. J., & Schunk, D. H. (2011). Self-regulated learning and performance: An introduction and an overview. In B. J. Zimmerman, & D. H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 1–12). Routledge/Taylor and Francis Group.

Author Biographies

Gary E. McPherson is the Ormond Chair of Music at the University of Melbourne. His research interests focus on the development of musical expertise with a special emphasis on techniques for optimizing practice quality through the use of self-regulated learning and motivation using self-determination theory.

Jennifer Blackwell is assistant professor of music education at Northwestern University. Her research interests include the development of musical expertise (from behavioral, cognitive, social, cultural, educational, and affective perspectives), applied music teaching, and feedback in music contexts.

Submitted November 10, 2023; accepted May 9, 2024.