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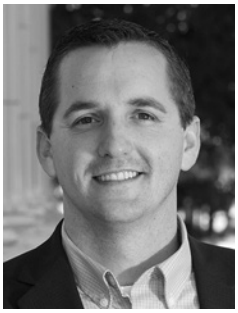
Taking a Beat: Feedback Timing in the Age of Online Lessons



Lynn Maxfield

Rhythm. Socially constructed or biologically regulated, our lives are marked by the passing of time in countable increments. Human nature has us work to find predictable patterns in these increments of time—what we may call rhythm. We mark our age in years, our years in months, months in weeks, and so on. We rise in the morning and lie down to sleep in the evening. In our studios, we (in general) start and end our lessons at regular intervals governed by the clock, and often those lessons fall into regular patterns of student demonstration followed by instructor feedback.

This year, many of our rhythms have been disrupted and we have fought to find new patterns in an unprecedented (in our lifetimes, at least) and unpredictable environment. In a remarkable demonstration of grit and ingenuity, singing studios around the world have moved to online platforms. While much of formal education has (with good reason) moved away from synchronous teaching, our field has necessarily held on to real-time lessons. For many, this transition has thrown our predictable within-lesson rhythms into disarray. While this transition has certainly been disruptive, with disruption often comes an opportunity to reassess. We may find that some of the rhythms we had previously set are best left behind when we return to more face to face teaching.

One such opportunity for reassessment is the timing and content of the feedback we provide to our students. When considering feedback, we can ask ourselves at least three of the six cardinal questions for problem solving: Why, How, and When. As we have transitioned to widespread online teaching, the answers to these questions may have changed. In some cases, those changes will be worth preserving when we are able to return to the new normal.

WHY

The first, and perhaps most important question to ask prior to providing feedback is, simply, why. Why are you providing *this* information to *this* student after *this* demonstration? The answer to this question is, of course, lengthy and involved, but in answering we have the opportunity to consider the hierarchy of needs that each individual student presents. The capabilities of the student can be weighed against the demands of the exercise or repertoire, and only then can we make an informed decision regarding whether or not feedback from the instructor is actually necessary or valuable at that moment.[1]

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During online teaching, asking ourselves why we are providing feedback is perhaps more important than ever. Even with increasingly capable technology, we are still teaching at a distance. Subtle cues in interpersonal communication are harder to notice, allowing the opportunity for one side or the other (teacher or student) to wax long in their responses, well past the attention span of the listener. Furthermore, even the most tech savvy teacher/student pairs will find themselves in situations where lags in connection times result in less than fluent communication—talking at the same time or losing half of a comment to the ether. These moments can drag attention toward the technology and away from the task of singing, disrupting learning. As a result, online teaching requires that feedback be packaged and delivered with more intentionality than ever before.

HOW

The most common forms available for *how* to provide feedback in our field are verbal feedback, teacher demonstration, and biofeedback visualization (e.g., VoceVista, Sing & See, Praat). The online studio can redefine the delivery methods available. Verbal instruction, as discussed in the previous paragraph, requires more careful consideration in this format. Teacher demonstration necessitates similar thoughtful application. Consider that Internet providers often optimize download speeds over upload speeds. This means that, while you may be able to receive video streamed from your student with reasonable fidelity, that is not a guarantee that your video and audio are being uploaded with the same fidelity. Even with careful attention to hardware (microphones, cables, audio interfaces), the best demonstration can be thwarted by an unstable Internet connection. Biofeedback, similarly, faces its own obstacles to implementation. While the basic practical considerations of microphones and video monitors are now in place in the online studio, capturing the audio from a stream requires some more sophisticated technological hoop jumping than most of us are willing to perform. With all of the logistical challenges that synchronous online teaching poses to (relatively) real-time feedback, it should be clear again just how important it is to consider the first question (why) when determining whether or not to provide feedback.

Some teachers, in the face of these challenges, have found success in providing written summary feedback following the end of a lesson or after viewing recordings of performances submitted outside the scheduled lesson time. In motor learning, summary feedback refers to the practice of withholding feedback until all trials in a practice block have been completed.[2] In this practice, the teacher must be mindful of the complexity of the task in relation to the capability of the singer to execute that task. If the ratio of difficulty to capability is low, more attempts (e.g., longer recording or more repetitions) can be summarized and the summary can be presented after a longer period of time has passed since the demonstration was recorded. Predictably, the opposite is also true when the ratio of difficulty to capability is higher.[3]

For more advanced singers, summary feedback can be a valuable tool, particularly when the singers are encouraged to review the recording at the same time as they read the feedback. In fact, some new evidence is emerging to indicate that students can learn as effectively from guided review of recordings of their own performances as they do with the aid of "expert feedback."[4] While these findings are brand new and have not yet been widely repeated, they may provide some hope that learners can, with the right tools, learn effectively even when socially distanced.

WHEN

While the questions of *why* and *how* we provide feedback are certainly impacted by the online teaching platform, the question of *when* to provide feedback has arguably the largest influence on learning outcomes. Feedback timing is one of the fundamental tenants of motor learning research and the principles of practice that that research has informed. Of considerable importance in this regard are how frequently feedback should be provided and how immediate that feedback should be initiated following completion of the student's attempt.[5]

Feedback frequency can be discussed in terms of relative and absolute frequency. Relative frequency refers to the number of times the learner receives feedback relative to the number of attempts made to complete the task. Absolute frequency refers to the total number of times that the learner receives feedback on a given task.[6] The ideal situation for learning appears to be high

absolute frequency with lowered relative frequency.[7] In practice in the voice studio, this means that the singer needs to be singing for most of the lesson(s), providing the opportunity for high absolute frequency, but with several attempts made before feedback is offered (low relative frequency). One of the best ways to increase absolute frequency would be to have more lessons with less time between each (i.e., lessons multiple times per week). While more frequent lessons were less practical when commuting to in-person meetings was involved, online instruction may lend itself very well to multiple, perhaps shorter, lessons per week. Scheduling logistics would, of course, be more complicated, but students may welcome the opportunity to meet, practice, demonstrate, and learn with their teacher more often.

The second consideration in regard to feedback timing is the temporal spacing of the feedback in relation to completion of the demonstration/attempt.[8] In this respect, feedback can be classified according to when it is initiated. Concurrent feedback is initiated while the student is still performing the task. This type of feedback, while effective at improving the performance of that iteration of the task, appears in fact to be detrimental to long term, stable learning.[9] Immediate terminal feedback—feedback that is initiated as soon as possible after the task is completed—is vastly preferable to concurrent feedback. However, it still has the potential to degrade learning by monopolizing the attention of the learner and directing it away from their own analysis and synthesis of the attempt they just made.[10] Better still, then, would be delayed terminal feedback. In this condition, feedback is delayed by a few seconds after the attempt has been completed.[11] As you may have guessed, delayed terminal feedback appears to be the optimal feedback condition, particularly when students are encouraged to take that time to internally assess their performance and form hypotheses regarding their success and failures.[12]

I have discussed these three feedback conditions (concurrent, immediate, and delayed) with many teachers and almost all have intuited that the delayed condition would be most beneficial for learning. However, my observations of an unscientific sample of lessons lead me to believe that few of us are comfortable enough with the "dead air" after the singer finishes singing to actually practice delayed feedback in our studios. The good news is that online teaching provides a perfect opportunity for us to "take a beat" before we jump in to fill the silence with our feedback. Being physically removed from each other makes the silence less uncomfortable and, with some instruction beforehand, students can use the time to really consider what they have just done before you tell them what to do next. If you couple this practice with lowering your relative feedback frequency, you may just be pleasantly surprised with how capable your singers are at identifying and correcting the same mistakes that you would have pointed out.

If you want to take the idea of student-directed learning one step further, online teaching also may provide an opportunity to experiment with allowing students to decide when they need/want feedback, as opposed to you offering feedback whenever you deem it necessary. The traditional, in-person, studio can make this model uncomfortable. Our students desire to respect and defer to our expertise, and we desire to respect and honor the time and money students have invested to access our expertise. Still, a mountain of evidence supports the benefits of allowing students to take more control over their learning experience and now may be the perfect time to give it a try.[13]

The past few months have, in no uncertain terms, been massively disruptive to our profession and to our world. However, this disruption may provide an opportunity to question our habits, reassess our practices, and emerge a more efficient and effective version of ourselves.

NOTES

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