Rethinking Aural Skills Through Backward Design

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In this article, we invite you to engage in reimagining aural skills courses and curricula using the backward design process developed by Wiggins and McTighe (2005). This lens will help us move beyond activity- and coverage-focused teaching to instead develop course outcomes that best provide real-world applicability to our students. We adapt the backward design approach to the unique needs of the aural skills classroom and draw in broader pedagogy research to augment our discussion. Throughout this process, we will invite the reader to: consider and prioritize goals, imagine appropriate assessments, and only then plan what to do in the classroom. In some cases, this may lead one back to oft-used activities like dictation or sight singing, but in others, it may lead to new visions of what aural skills classes might be.

1. Introduction

When students finish our aural skills curricula, how have we prepared them for the many musical contexts that they will find themselves in as professionals? Ideally, our students would have a transferable set of skills that would allow them to participate in a multitude of musical environments. They would come away from these courses with an integrated knowledge of listening strategies and musical schemata, as well as sharp, consistent habits for approaching and understanding scores. Yet aural skills materials and textbooks often focus on activities in the classroom rather than what this training allows musicians to do. After an extensive review of aural skills textbooks, apps, and websites, Chenette, Davis, and Kleppinger (2022) concluded that the consensus definition of aural skills is still much the same as it was 20 or even 40 years ago: "Identification drills, sight singing, and dictation… typically applied to musical materials derived from music theory curricula" (2022, 33–34). Aural skills curricula have consistently come back to these foundational activities despite decades of calls for reform. Example 1 presents a sampling of such calls from the 1990s, all of which perceive a lack of connection to what we might consider "real-world applications," despite the fact that many instructors consider aural skills a highly practical discipline.

- "Aural training is still a patchwork in American colleges and universities. It is a pastiche of observable behaviors that may or may not link directly and consistently to a corresponding set of aural skills" (Butler 1997, 43).
- "I have come to the unsettling realization that, for some fine performers and teachers (including theory teachers!), dictation ability seems to have little relation to their successful musical lives" (Potter 1990, 66).
- "An alarmingly large proportion of musicians, questioned about their own experiences of aural training, admit that they disliked it, thought they were bad at it, and have found it largely irrelevant to their subsequent engagement with music" (Pratt 1998, 1).
- "Concepts and skills learned in the classroom are often presented with a narrow focus, in artificial contexts that are foreign to the ways in which the knowledge is expected to be used in real-world situations, and this is often true of aural pedagogy" (Covington 1997, 50).

Example 1
Calls for aural skills curriculum reform from the 1990s.

How have aural skills curricula seemingly remained so stable in the face of such criticism? Consider that the definition identified by Chenette, Davis, and Kleppinger above describes a set of tasks or activities ("identification drills, sight singing, and dictation") and a set of content ("musical materials derived from music theory curricula"). So long as our understanding of aural skills development remains tied to specific activities and content, we are defining aural skills according to *inputs*: what we bring to and do in class. Since the definition of aural skills involves a set of activities and content, it should not be surprising that there has been little change. In this article, we ask: what if we reverse how we define aural skills and focus on *outputs* rather than *inputs*?

In their book *Understanding by Design*, Grant Wiggins and Jay McTighe (2005) define what they call the "twin sins" of typical instructional design: activity-focused teaching and coverage-focused teaching. As they point out, "Neither case provides an adequate answer to the key questions at the heart of effective *learning*: What is important here? What is the point? … Put simply, … there are no explicit big ideas guiding the teaching and no plan for ensuring the learning" (2005, 3, emphasis original). To address this situation, Wiggins and McTighe offer a process they call "backward design." This term implies that the traditional approach is a kind of "forward design": instructors teach content, create tests and quizzes on that content, and then hope students are changed at the end. Wiggins and McTighe argue that we should instead invert this pattern, as visualized in Example 2.

Example 2
Visualization of the backward design process (adapted from Wiggins and McTighe 2005, 18).

The backward design process begins with defining **outcomes**, which are statements that describe the skills, knowledge, habits of mind, attitudes, and understanding that students are expected to acquire by the end of a course (or curriculum); we address these in Section 2. The next stage of the process is to plan **assessments** (Section 3), which involves two interrelated questions: How can students demonstrate achievement of an outcome? What tools and measures enable the instructor to effectively procure and evaluate evidence of progress toward outcomes? The final stage of the backward design process is to craft appropriate, scaffolded, and musically engaging learning **activities** (Section 4) that prepare students to create evidence that satisfies the outcomes.

Language used by aural skills instructors can unintentionally collapse distinctions between these different parts of course design. For example, when instructors use "harmonic dictation" to refer to an outcome, assessment, *and* activity, students might infer that harmonic dictation is relevant only to satisfy a course requirement. Utilizing the backward design process can help instructors distinguish among outcomes, assessments, and activities in their course planning, and enable them to create a richer variety of learning experiences. Accordingly, the backward design process can promote the development of a diverse range of learning activities suited to unique students, needs, and resources.

In this article, we invite you to engage in reimagining these courses—and curricula—backward.[1] We will adapt the process of backward design to aural skills instruction, both considering the unique needs of our field and drawing on broader pedagogy research. In the course of this process, we hope you will consider your goals, imagine appropriate assessments to determine whether students are meeting those

1 While our language will often imply that the reader is actively designing and teaching an aural skills course, we acknowledge that this will not be true for all. Fortunately, backward design has benefits for any type of course.

goals, and only then plan what to do in the classroom. In some cases, this may lead back to a course that emphasizes oft-used activities like dictation or sight singing. But for others, it may lead to new visions of what aural skills classes might be.

2. Formulating Outcomes

The first step in the backward design process is to identify the outcomes (results) we intend for students to achieve. In aural skills courses, identifying outcomes invites a necessary focus on what students can *do* by the end of a course or curriculum, rather than on a list of content goals that the course will "cover" (Gawboy 2013). What endpoints are students working towards? What skills will they need as musicians? As Stan Kleppinger notes, we want to ensure that our outcomes "contribut[e] to the mapping of students' minds so that they'll habitually engage with music in specific, productive ways" (Kleppinger 2017, 160). Wiggins and McTighe emphasize the importance of this kind of understanding in skills-based courses: "[T]he learner should come to understand the skill's *underlying concepts*, why the skill is important and what it helps accomplish, what *strategies and techniques* maximize its effectiveness, and *when* to use them" (2005, 133, emphasis original).

What is an outcome? While pedagogical literature is quite varied on these issues, the terms "outcome," "objective," and "goal" have often been used to clarify the scale at which they apply (see, for example, Carnegie Mellon University, Eberly Center; n.d.). Outcomes typically refer to long-term achievements: skills that students build over the course of a semester or curriculum. Objectives tend to be smaller-scale accomplishments, such as those met within a unit or course module. Goals can describe all of the above, from endpoints of a single activity in class to achievements over a longer span of time. In this article, we will use terms such as "course outcomes" or "curricular outcomes" to illustrate a larger scope. The terms "objectives" and "goals" will also be used interchangeably with outcomes, with recognition that they can have more specific designations in other contexts. Sample aural-skills outcomes are shown in Example 3.

Sample Outcomes:

Students will be able to:

- Identify by ear structural boundaries within a single work or movement.
- Improvise a stylistically appropriate rhythmic layer along with a given audio track.
- Predict and describe textural changes in a non-score representation of music (such as a spectrogram or a piano roll view in a DAW).
- Hear and describe the tonal function of a chromatic harmony in an aural example and sing its expected resolution.
- Improvise a bass line to a given diatonic melody.
- Add a harmonizing line to an existing musical texture.
- Improvise a satisfying melody.
- Create a cover version or arrangement of a popular song.
- Sing through a melody at sight; then sing the melody again with embellishments.
- Identify errors and improvements in a series of rehearsals or practice sessions.
- Describe/identify by ear instruments heard in an ensemble.
- Conduct along with an aural example containing changing meters.

Example 3

Examples of outcomes in aural skills courses.

JOIN THE PROCESS: Consider a skills-based course that you teach, coordinate, or would like to teach, and draft the outcomes you hope students will reach at the end. While doing so, consider how your aural-skills curriculum might prepare students for their future musical lives (i.e., after their coursework has finished). What essential skills should your graduates, or students completing your course, be able to demonstrate? To keep the focus on students, we suggest that you start each outcome with the phrase, "Students will be able to . . ."

Prioritizing Outcomes

When drafting outcomes, it is helpful to ask: "What do I want my students to be able to do six months after my course has finished?" Thinking in terms of this scale encourages instructors to accept that there is rarely enough time in a single semester for students to make meaningful progress towards a large number of learning goals. Due to the need for repetition and spaced practice to cement learning, some research suggests that instructors should only focus on a small number of learning outcomes each semester to ensure that students will be able to remember and retain the information (Nuthall 2007). Indeed, NYU's Center for Teaching and Learning (n.d.) recommends having only 3–5 outcomes for a semester-long course. While there are differences between skill- and knowledge-based courses, it is not realistic for many students to focus and make significant progress on dozens of aural skills outcomes

during a single semester. Because only so much learning is possible in a limited time, instructors must prioritize outcomes.

It is also helpful for students to know which outcomes instructors think are most important. An undifferentiated list can give the impression that each outcome is equally important, and a long list of outcomes may imply that none are important. Taking the time to clarify our priorities from a list of outcomes communicates what the essential takeaways from the course should be. Wiggins and McTighe encourage instructors to focus on the "big ideas" that are foundational to the course, such as the value of a set of skills, and the strategies and contexts of when and where to use them (2005, 70–78). Prioritizing outcomes and making that precedence transparent to students creates a shared understanding that can focus students' attention where it is needed most, and where it will best serve them in the long run. (For more on the value of transparency, see Winkelmes n.d.)

JOIN THE PROCESS:. Take your list of outcomes from the previous prompt and prioritize the top three. You can still retain the other outcomes, but this should clarify which you consider to be most important, and how you should allocate time and attention.

Evaluating and Revising Outcomes

Once an outcome has been drafted, it is important to consider multiple factors that might lead to revisions and improvements. One helpful framework for these considerations is the SMART acronym (Doran, Miller, and Cunningham 1981), which invites us to evaluate the extent to which our outcomes are specific, measurable, achievable, relevant, and time bound (Example 4; we focus on four of these here, and M—measurable—will be addressed below in the Assessments section). First, an outcome should be specific (S) and focus on one skill or ability (as opposed to multiple). It is also helpful to specify the musical materials students will grapple with. When considering whether outcomes are achievable (A), it could be helpful to think about three students who have completed the course and what skill levels they attained, perhaps envisioning a high-achieving student, a low-achieving student, and one in the middle. Is the outcome a realistic endpoint for all of those students? Were they all able to successfully complete the aural-skills sequence? It is also important to assess the relationship between outcomes and students' goals, thereby considering the relevance of the outcomes (R). We might ask ourselves if students are aware of our larger outcomes, the contexts in which they are useful, the values they represent, and whether or not the outcomes are relevant to students' future aspirations. Lastly, we should consider the time-bound (T) aspect of this outcome. While this traditionally

has to do with deadlines, in an aural skills context we can re-interpret this to consider the aspects of fluency and time in relation to the outcome (e.g., how long it takes a student to conceptualize a melody, or how many playings of a stimulus they need in order to do so).

SMART Framework	Application Questions
Specific	Does the outcome state a specific, narrow goal with action words? Does it involve a single skill or multiple skills combined? Are there particular repertoires or contexts you want students to focus on?
Measurable	Can you track students' progress in relation to the outcome? How will you know when the outcome is accomplished?
Achievable	Is the outcome too easy or difficult for your students?
Relevant	How can the outcome play a role in students' lives and futures as musicians? Does the outcome align with your pedagogical and musical values?
Time bound	At what point in the semester should students achieve the outcome? In a situation where fluency is necessary, what amount of time (or number of playings) should it take to accomplish the outcome?

Example 4
The SMART Framework (Doran, Miller, and Cunningham 1981) as applied to aural skills courses.

As an example, we will evaluate and revise an initial draft of a second-year aural-skills outcome related to two-voice dictation, something like: "Students will be able to successfully dictate outer voices of a chromatic SATB texture." Although this formulation of the outcome could be said to address the component skills needed to complete a two-part dictation, the specificity (S) could be improved to avoid teaching that is too diffuse and unclear to students. It also centers around an activity and does not clarify the relevance (R) or larger objective. The outcome could be revised to be specifically aimed to develop attentional focus: "Students will be able to focus on a single voice within a chromatic multi-voiced texture." To direct the outcome towards aural understanding of chromatic voice leading, it might be revised to, "Students can illustrate and explain the contrapuntal relationship between outer voices within a chromatic texture." Finally, if the intended outcome is to develop students' understanding of harmonic function, it could be revised to, "Students will be able to describe the harmonic implications of outer voices within a short musical passage containing chromatic chord functions." While the differences in each of these formulations may seem small, they emphasize distinct endpoints and impact how we approach assessment and instruction.

An initial draft of another outcome could be: "Students will be able to identify errors when hearing a performance." Although this is a great goal overall, it is ambiguous about both the types of errors and the contexts of those errors. We could break down this broad objective into something more specific by revising it to: "In one or two listenings, students will be able to identify simple pitch and intonation errors when comparing the score and performance of a short passage in two voices (such as the first four bars of a menuet)." This revision references the number of hearings, thus making it time-bound (T), and makes it more specific (S) with regard to the types of errors and musical materials students might hear. This outcome might also strike students as more relevant (R) than typical dictation tasks, as many musical careers involve diagnosing and articulating errors in real time.

Instructors going through this outcome revision process may discover tensions among components of the SMART acronym. For example, the specificity of this revised outcome (short passage, two voices, etc.) is in tension with a desire for relevance (broad applicability to any musical situation). One strategy for managing this tension is to first write an outcome that emphasizes broad applicability, then make it more specific and closer to an assessment. Another tension between components could be wanting students to quickly complete a listening activity with fewer playings (time-based), but realizing that they need more hearings to be successful (achievable). Time to fluency for any outcome could also depend on the student body at an institution. Tension between competing values is common, and instructors often have to find the best balance for their students. These kinds of conflicts are also why prescriptive goals for all music curricula do not make much sense, and why instructors, who meet and work with students regularly, are often in the best position to find the ideal balance of these competing factors.

Finally, we want to acknowledge the different levels of agency instructors might have. Even in contexts where you are given a list of required outcomes for a course by your department or supervising faculty, you can communicate to students how outcomes might have long-term relevance. Curricular outcomes can also go beyond the specific course outcomes for a given semester, and allow one to study the continuity of outcomes across multiple semesters. When possible, we recommend starting with curricular outcomes and working down to the course level, perhaps even starting by designing endpoints for the final semester and working backward to the first semester of aural skills. Writing down curricular outcomes offers the opportunity to communicate goals for students, and our own pedagogical values.

JOIN THE PROCESS: Return to the outcomes that you drafted and prioritized from above, and use the SMART framework to evaluate and revise the most important ones.

3. Designing Assessments

When designing an assessment for a given outcome, a useful first step is to ask, "What does success in this outcome look or sound like in the 'real world'?" That is, once a musician has achieved this outcome, what does it allow them to do? These questions are important when designing outcomes in the first place, but they can be easy to forget. If we do not create assessments with real-world outcomes in mind, students may have a hard time understanding the relevance of what they are being asked to do. Real-world outcomes may inspire us and our students to invent more interesting and engaging assessments, while simultaneously allowing us to address what we really care about.

Many real-world outcomes can be adapted into what Wiggins and McTighe call "authentic assessments" (2005, 153–154). Authentic assessments place skills and knowledge within a realistic context, which can help students see how the skills assist them as practitioners. For example, the outcome, "Students can focus on a single voice within a multi-voiced texture," has many practical applications that musicians use regularly, including identifying errors in an ensemble performance, finding a starting pitch, creating a transcription or arrangement from a recording, and improvising with a partner. Many of these applications can be adapted into assessments. For example, while listening to a multi-voiced stimulus, a student could focus on a single voice to identify errors, transcribe it, sing it back, mirror its contour, describe the timbre, answer questions about it, sing the starting pitch, and improvise variations.

To the extent that we create a close connection between desired outcome and method of assessment, we are more likely to assess what we truly care about. For example, many instructors use harmonic dictation to assess whether students can focus on individual voices within a multivoiced texture. Yet harmonic dictation mixes in other skills and knowledge, including fluency in notation, behavior of chord functions, and bass-chord connections. It may also not feel like a real-world application, particularly when hearings are limited, students cannot make any sounds, and the atmosphere is tense, which could lead to lower student buy-in and engagement. Implementing an assessment that looks more like one's desired real-world application, such as identifying errors in an ensemble's performance, critiquing the intonation of an inner voice, or singing harmony alongside a given melody, can help make sure that we are testing, and thus encouraging, the most relevant skill(s). That

said, real-world applications often bring together multiple skills, so it is important to appropriately scaffold student preparation to ensure that an assessment focuses primarily on the desired skill.

This dichotomy between real-world contexts and typical assessments can seem stark if we only think of tests or quizzes when we hear "assessment." Assessments don't have to be a test; they can be low stakes, and take many forms (self-reflection, online quiz, group activity, etc.). Indeed, the term can refer to anything that collects information to measure student progress in relation to a given outcome. Assessment literature often differentiates between formal vs. informal settings, where formal assessments are typically standardized activities in a controlled environment (such as a test), and informal assessments are more individualized and less prescribed. Informal assessments could range from hearing students sing a cappella, to observing as they work out harmonies from a pop song before class. Taken in this broader sense, any observation that allows an instructor (or a student) to make a judgement in relation to an outcome could be considered an assessment, even when such an activity is not graded.[2] Therefore, we encourage readers to decouple assessment (i.e., gathering evidence and giving feedback) from grading (see Kohn 2015).

Informal contexts can be as beneficial to an instructor as typical formal assessments. For example, we could experiment with allowing informal classwork to count as a grade (e.g., "Great job today, Mary! I can count that as your arpeggiation grade for this unit."). Especially in introductory aural skills courses, it can save time and lower stress levels to allow graded assessments to take place in informal contexts if it benefits the student. Some high-performing students likely don't need individual appointments if you already have ample evidence of their ability to achieve an outcome. This allows you to spend time with students who require more help.

JOIN THE PROCESS: Return to an outcome you constructed in Section 2 and brainstorm a list of ways that success in this outcome manifests in different musical pursuits. Consider which genres of music, ensembles, instruments, and careers are most relevant to your students. Then imagine how students might show evidence of meeting this outcome. Strive to consider possibilities outside of the traditional assessment methods, with students showing evidence of achieving outcomes in many ways, from creative projects to skillful demonstrations. For now, focus on what these assessments would look like in an ideal situation without worrying about practicality or logistics, such as grading or class size.

Refining Assessments Using the PRIME Framework

While truly authentic assessments are a wonderful ideal and a useful starting point, they must often be adapted to individual educational contexts. Example 5a lists

2 For some inspiring examples of creative assessments, including student self-assessment ideas, see Angelo and Zakrajsek 2024.

considerations we have found important in designing assessments that are as authentic as possible, while incorporating effective learning methods, integrating with curriculum, and remaining manageable. We refer to this helpful list as the PRIME framework, and use it to model best practices when refining assessments in aural skills courses.

PRIME framework	**Explanation**
Purpose (Formative vs. Summative)	Formative assessments are designed primarily to foster learning by providing robust feedback to the student. Summative assignments are designed primarily to evaluate student achievement at a specific point in the semester and should focus on appropriate levels of accomplishment in relation to an outcome (Dixson and Worrell 2016).
Resources	In adapting real-world activities to classroom assessments, adjustments often need to be made to accommodate available resources and constraints, including instructor/student time, space, and materials. How can the essential elements of the real-world activity be preserved when making such adaptations?
Inviting Student Creativity	Can students be assessed in a way that invites their creativity through improvisation, arranging, designing new approaches, etc.?
Multiple Paths to Demonstrating Success	Many outcomes could be demonstrated in different ways: for example, through transcription, playback, or improvisation. Is it appropriate to allow students to choose how they will demonstrate their learning (Iverson 2020, Tobin 2018)? Do all students need to achieve the same level or should you allow differentiation, where students can show different levels of mastery (Tomlinson 2014)?
Enabling Practice	Is it clear how students can practice for the assessment, and whether they will be able to accurately evaluate their success during their practice? If not, what guidance or tools might be beneficial?

Example 5a
The PRIME framework for improving assessments in aural skills courses.

This framework helps us envision numerous possibilities for assessment. Suppose an instructor is evaluating students' ability to follow a single voice in a multi-voice texture by asking them to hum along with the clarinet line of a wind ensemble recording. Example 5b applies the Prime framework to this assessment. When weighing these criteria, instructors must consider their unique student body and institutional goals. For example, if a sizable portion of students are music education majors, it might be appropriate to expect a high level of consistent achievement, since this skill is important for success in that career field. On the other hand, if one's desired outcome is for students to be able to sing along with inner voices in order to encourage more sophisticated listening habits among a diverse range of liberal arts students, it might be appropriate to award credit for simply engaging in the activity and submitting a reflection.

PRIME framework	Refining the Assessment
Purpose (Formative vs. Summative)	If this assessment occurs early in the learning process, it could be treated as formative by asking students to form small groups outside of class, test each other on different excerpts, discuss what each person found difficult and how to improve, and upload a personal reflection to an online assignment. As a summative assessment, it could be graded in individual appointments, using an established grading rubric.
Resources	Resource constraints include instructor/TA time, especially if individual hearings are involved. Another consideration would be finding sufficient examples of appropriate difficulty for assessments (and also practice).
Inviting Student Creativity	A creative opportunity for students to demonstrate this skill might be to have them sing or play back a decorated version of the line or improvise an alternative line that preserves the essential harmonies of the passage.
Multiple Paths to Demonstrating Success	Students might be allowed to choose whether they are more comfortable transcribing the line, humming it back, or playing it back on their primary instrument.
Enabling Practice	Similar excerpts (say, from other movements of the same piece) might be recommended to help students practice.

Example 5b
Using the PRIME framework to refine the assessment, "Students can hum along with the clarinet line of a wind ensemble recording."

JOIN THE PROCESS: Return to the ideal assessments you drafted above. Keeping in mind the purpose of the assignment and the resources you have (time, space, etc.), revise these assessments using the PRIME framework to balance practicality with creativity and flexibility.

Ensuring Validity and Reliability of Assessments

Once you administer an assessment, it is often useful to evaluate the quality of evidence it provides. We recommend considering the two lenses of validity and reliability when evaluating the effectiveness of a given assessment.[3] Validity has to do with whether the assessment measures what you want to measure (i.e., evidence about students meeting a specific outcome). Because of the scaffolded nature of developing aural skills, it is important to ensure that students have all of the necessary component skills to demonstrate what you are asking them to do. For example, if

3 Both of these measures have statistical tests associated with them, but they can also be used in a broader sense as we do here (National Research Council 2014).

students fail a chord-identification quiz because they misunderstand the difference between the bass and the root, the assessment is an invalid measurement of their ability to identify chords due to the confounding conceptual confusion.[4] In another illustration of this disconnect, Karpinski gives an example of a melodic dictation response where a student seems to have written every note correctly except the last one, but other markings indicate that the student heard every scale degree except the last one *incorrectly*—and then wrote them in the wrong clef, canceling out one error with another (2000, 62–63). We want to design assessments that actually test what we think they're testing, perhaps by utilizing varied assessment modalities.

Reliability, on the other hand, measures whether the assessment gives you a repeatable result. Good, reliable assessments can give you consistent results and should typically be in line with information from other assessments (e.g., performance in class, homework). Even if an assessment is reliable in measuring an outcome, it is often helpful for other assessments related to that outcome to confirm successful achievement. Because reliability can be influenced by many factors outside of the assessment itself, from students' mental or physical states to lack of consistency among graders, it is often helpful to have multiple pieces of evidence as opposed to expecting any single assessment to measure whether an outcome has been met.

JOIN THE PROCESS: Think back to the assessments you have drafted. While it is often helpful to examine validity and reliability *after* giving an assessment, one can still consider these aspects of an assessment in advance to predict its effectiveness. Consider ways in which your chosen assessments might not capture what you are hoping to measure. Will you be able to discriminate between a student who is not yet ready to pass the outcome and one who hasn't mastered one or more necessary precursor skills?

Providing Feedback and Grades

From a student-learning perspective, the most important use of assessment is for feedback (Clark and Talbert 2023). Any communication given to a student about how they are doing can serve as valuable feedback—whether saying "nice job" as you walk around a classroom, going over answers and asking students to check their work, or returning an assessment with a grade. Feedback lets students know how they are doing in relation to a particular outcome, and it is worth considering what kind of feedback would be most helpful for a student to receive at a given point in the semester. The feedback you provide can influence students' work, especially in regard to motivation and engagement in class.

4 One solution to this situation would be to treat the assessment as formative, giving credit for engaging with the assessment and giving focused feedback, then later get a more accurate summative assessment by inviting that same group to take another quiz.

When we wish to add a grade as part of the feedback process, creative assessments inspired by the backward design approach may take us beyond the deceptively objective "one point per pitch, one point per beat" approach.[5] Instead we might explore alternative systems, including standards-based grading, contract grading, and collaborative grading (also called "ungrading"; see Clark and Talbert 2023, Orvek 2024). Although these evaluation approaches might be initially unfamiliar for both instructors and students, they can be useful models for exploring options and examining assumptions about grading that are often taken for granted. That said, many goals can be achieved through relatively common methods, including weighting different parts of an assessment to emphasize the most important objective(s), using a rubric that identifies criteria for success, and grading pass/fail based on essential components. Peer and/or self evaluation (which encourages reflection and metacognition) can also be an important aspect of learning, particularly if creativity or the development of a growth mindset is an important aspect of the outcome (Ferenc 2017).

As an example, consider possible approaches to assessing the outcome, "Students will be able to focus on a single voice in a multi-voice texture." If we ask students to hum or play back a line as our assessment method, we could set a clearly defined threshold of achievement that will constitute passing and treat the activity as binary (pass/not-pass). If we are not concerned with a specific level of achievement and just want to encourage engagement with this skill, we could ask students to do it on their own—perhaps in a homework assignment—and grade a self-reflection largely on completion. Even if we use a traditional method of assessment such as dictation or transcription, we may want to consider the messages sent by our feedback: grading "per pitch" and "per rhythm" focuses students on a standard of perfection, while grading on completion (is there sufficient evidence that the student was able to follow the line?) may help them focus on the primary goal without the stress of trying to be perfect. Alternatively, heavily weighting more prominent parts of the line, such as beginning and ending pitches, will help students focus on the foundation of the skill rather than perfection.

5 It is worth noting that even such seemingly objective approaches to grading are not always as objective as they might seem. Kleppinger gives the example of a class that has been focusing on distinguishing pre-dominant chords taking a five-chord harmonic dictation with a single pre-dominant. As he points out, if the chords are equally weighted in grading, "Students can thus earn a score of 80% without demonstrating achievement (or even awareness) of the new skill this exercise purports to quantify" (2017, 156–157).

Some of the most authentic methods of assessment, particularly those that look a lot like what musicians do outside of music schools, may make defining success more difficult and will require some grading creativity. For example, one of the authors has asked their students to hold short rehearsals in small ensembles using real music. Students took short turns conducting sections they had prepared; when not conducting, they sight read in the ensemble. This activity brought together sight reading, conducting, and error detection, and helped students make connections outside the classroom. At the same time, it was impossible to predict how many errors would be made and of what sort, and difficult to balance the different components of the activity in the grade. In the end, the grade was split among participation, self-evaluation, and instructor observation, based on carefully defined criteria. Defining these methods, and using rubrics when appropriate, will help students go into an assessment more confidently and focus their attention on its most important components.

Students should learn and grow over time, of course, and we should encourage this through our feedback and grading. It is especially important in aural skills courses not to reward students who can already do things and penalize those who can't. Formative assessment opportunities early in the course can identify students who need more help and practice. Saving summative assessments until later in the course or unit will ensure that students are not penalized for having less experience or learning more slowly than their peers. Resubmission and reassessment policies can also incentivize learning and growth. Some advice may be found in the literature on mastery learning (see, for example, Guskey 2022).

JOIN THE PROCESS: Consider the chosen outcome(s) and assessment(s) you have drafted thus far. Keeping in mind your goals (a specific level of achievement? improvement? engagement?), sketch out potential approaches to feedback and grading and think about whether and/or how they reflect your priorities. What are some ways to grade the assessment and provide feedback that will best improve your students' learning? Is it appropriate to allow resubmissions to encourage growth?

4. Creating learning activities

Backward design ends where many of us begin our class planning: deciding what we and our students need to learn, practice, and do to support the outcomes that we seek. In our experience, forward design can sometimes feel aimless ("I could do this dictation, or that transcription project, or maybe we should just practice our solfège…"). It fills up the class period with activities that can be productive, but do not necessarily lead to our most important goals. Backward design, on the other hand, gives clearer priorities. Since the goal of learning activities is to support student

success in assessments, classroom (and outside-of-class) activities should be directed specifically toward readiness for these. Teachers may balk at this apparent strategy of "teaching to the test"—but if the assessment we are preparing for is *authentic and meaningful*, and is aligned with an outcome that we truly care about, teaching to the assessment can become a good thing. Any misalignment is a sign that it's worth revisiting our outcomes and/or assessments.

The most effective learning activities capture student interest and are characterized by a balance of factors: clear intentions, appropriate scaffolding, flexibility and adaptability, opportunities for feedback and reflection, and applications to real-world experiences.[6] Aligning such learning activities with outcomes and assessments opens up significant room for creative approaches beyond the standard aural skills tasks of identification drills, dictation, and sight singing. We can therefore employ a wide range of aural skills activities, including in-class discussion, singing, playing, call-and-response, dancing, writing, acting, and nearly any other form of human expression and interaction, structured or unstructured.

For example, consider the outcome, assessment, and in-class activities presented in Example 6. A traditional in-class activity to emphasize this skill would be multi-voice dictation—as a learning activity, assessment, and outcome. Yet compared to multi-part dictation, the outcome stated in the example is more clearly relevant to the real-world experiences of members of a chamber group or ensemble directors, and the assessment and activity are more musically engaging. Assessing and practicing by performing lines on one's primary instrument also provides students with a useful feedback loop as they compare a recording with the sounds they are making. As such, these activities may support learning even if a more traditional assessment method, such as transcription of a designated line from a multi-voice texture, is desired.

6 See Wiggins and McTighe (2005, 197–226) for an introduction to the WHERETO framework–a set of considerations for designing learning activities.

Outcome	Students will be able to focus on a single voice within a multi-voiced texture.
Assessment	Students record themselves singing or playing back each line of a given three-voice recording.
Activity 1	Students gather in groups of three, choose an excerpt of three-part music, and listen. Each student selects one voice and practices singing or playing it on their instrument. The group assembles into a trio and performs for the class. The class listens to the original excerpt and the trio performance, then identifies which line was performed by each member of the group.
Activity 2	Groups of 3 or 4 students listen to a multi-voiced piece, with each student assigned to "transcribe" a certain line into silent gestures. The group performs their gestures together, and other class members identify which line is "played" by each student. Classmates could further discuss how and why certain gestures correspond to particular musical features of the line.

Example 6
Case study in designing in-class activities.

JOIN THE PROCESS: Identify an outcome and assessment you've designed and consider its component skills. Brainstorm real-world musical activities that utilize one or more of these skills. How might you adapt those activities to a classroom setting, either individually or in small groups, inside/outside of the classroom? What classroom activities will enable students to bridge learning activities with creating, listening, performing, or teaching music outside of class? How can you engage them in creative activities that enrich and focus their listening? Explore different modes of expression, as well as responses to and engagement with sounds, as you expand your repertoire of teaching activities.

Learning activities can engage with students' broader musical lives in meaningful ways. For example, many pedagogues agree that error detection is an important outcome of aural skills instruction—and fortunately, it is relevant to many activities students engage in. We could therefore consider the outcome, assessment, and learning activities in Example 7, which engage students' own musical practice, replicate a real-world scenario, and may even foster community engagement.

Outcome	Students will be able to detect and correct errors of pitch/intonation/rhythm.
Assessment	Students listen to a recording of a small ensemble rehearsal where mistakes are made while following along with a score. They write down three mistakes they would prioritize fixing if they were leading the rehearsal.
Activity 1	Students record themselves performing a short piece that is new to them early in the term, then again in a few weeks once they have learned it better. In class, they give a short presentation, indicating where and why they made mistakes in the earlier recording and playing the recording for the class. If time (or in a follow-up assignment), they play the later recording to compare and identify goals for future improvement.
Activity 2	Each student studies one page of a choral score before class, then has ten minutes to lead the rest of the class through sight reading it, using an instrument only to give starting pitches. Students are encouraged to use solfège, conducting, and other methods to get their "choir" to learn the music.
Activity 3	Students work with Music Education majors in practicum placements at local elementary, middle, or high schools. They attend a band, orchestra, or choir rehearsal (or are given access to a recording) and comment on perceived errors, perhaps even finding ways to work with the practicum teacher to develop their performances.

Example 7
Connecting learning activities to students' broader musical experiences.

Activities like these may be intimidating at first, as some require instructor creativity, student risk-taking, and materials that are not readily available in a textbook. Limitations on instructor autonomy and time may also make it impossible or impractical to realign a curriculum or even a single course towards meaningful assessments and exciting outcomes. Yet the rewards of even small changes can be great, particularly in terms of student buy-in and engagement—and perhaps instructor enthusiasm. Additional examples of engaging learning activities aligned with outcomes and assessments are given in Example 8.

Outcome	Students will be able to create music through improvisation or composition based on motivic development.
Assessment	Students will improvise a melody based on a given motive.
Activity	Listen to Andrea Datzman's soundtrack at the beginning of Disney/Pixar Studio's *Inside Out 2* (e.g., "Outside Intro" or "The Life of Riley"), with a focus on motivic development. Come up with a similar melodic/rhythmic motive, and then, given a backing track for harmonic direction, improvise a melodic line using that motive with either their instrument or their voice.

Example 8
Additional examples of engaging learning activities aligned with outcomes and assessments.

Outcome	Students will be able to follow harmonic progressions within a recording by ear.
Assessment	Given a recording of a short piece of music and 20 minutes to work, students will work out in a keyboard lab (or on guitars, etc.) how to play along with the piece in a way that matches 90% of the essential harmonic context of the original.
Activity	Split a class into small groups and pose the following scenario: A private student of yours learned to sing or play "The Lone Ranger" (Rossini, "Overture" to *William Tell*) melody by ear in G major, including the section that goes into minor. Your student would like you to accompany them during your lesson. If using a piano or guitar, what harmonies would you play? If using an instrument that cannot play multiple notes at one time, which individual notes, in combination with the melody, would be most useful in suggesting the full texture? What rhythmic pattern would you employ, and how would this rhythm interact with your harmonic rhythm? Come up with your accompaniment and perform it for the class.

Outcome	Students will be able to reflect on how aural skills are used, and which skills are most useful in their chosen career path.
Assessment	In groups defined by career goals, students analyze their interview with a professional, and reflect on which skills are most important and the contexts in which they are useful.
Activity	Students use an instructor-designed interview as a starting point to talk with a professional in their chosen field about how they use music reading, listening, and improvisation skills in their musical lives; what skills they learned in their own aural skills education that have been most helpful; and what aural skills have been useful that they did not learn in class.

Outcome	Students will be able to describe the timbres and textural roles of instruments in a performance.
Assessment	Students will take a listening quiz, where for each excerpt they list the instruments they hear, describe each instrument's role within the ensemble (bass, melody, middle voice/harmonic filler, beat, etc.), and indicate the most appropriate timbre descriptor from each of the following pairs: percussive/legato (attack), bright/dark, and pure/noisy.
Activity	Students are given a playlist of song excerpts (30-ish seconds each) with a mix of interesting timbres and are asked to come up with an a cappella cover version of one excerpt of their choice. As they work, the instructor engages them in conversation about their choices of vocal syllables to imitate the instruments and how these relate to aspects of timbre, particularly attack (beginning consonants) and sustain (vowels).

Example 8 (cont'd)

Additional examples of engaging learning activities aligned with outcomes and assessments.

Outcome	Students will be able to perceive, compare, and describe expressive nuances in performance (rubato, dynamics, articulation, vibrato, etc.).
Assessment	Students listen to recorded performances and make observations about shared approaches to expressive nuances, nuances that are unique to each performance, and reasons for those expressive choices.
Activity 1	Students listen to three recorded performances of the same excerpt (without a score), conducting along with the recordings to discover moments of tempo flexibility. Students then share similarities and differences between the three performances, as well as possible reasons for those rubato choices (phrases, dissonance, melodic contour, etc.).
Activity 2	Students record themselves performing a selected excerpt with two different approaches to expressive nuances (rhythmic clarity, phrasing, dynamics, timbre/color/tone etc.), then describe their reasons for each approach and for their preferred interpretation.

Example 8 (cont'd)
Additional examples of engaging learning activities aligned with outcomes and assessments.

Regardless of the activities, an instructor must consider students' knowledge, skills, attitudes, and self-understandings. Some activities can unfold quickly, while others take many class periods and require significant scaffolding in order to bridge where students are at the beginning of a unit or course with the intended destination. In combination with consistently reminding students of the larger outcome, scaffolding also helps to ensure students' willingness to buy into various activities, to be vulnerable and try new things, and to learn and develop skills. As Jennifer Shafer England (2018) demonstrates, scaffolding is important both over the course of a semester and within a single class meeting. Because students learn at different speeds, providing scaffolding that is flexible, accessible, and encouraging to a variety of learners can improve the experience for all.

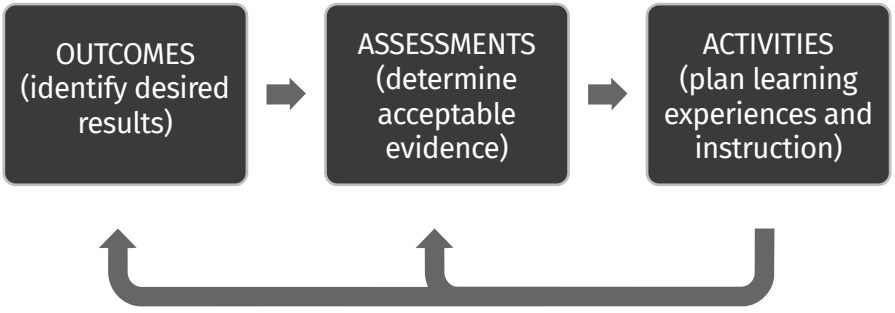
JOIN THE PROCESS: Consider the assessment you designed in the previous section that was based on an outcome you care about. What do students need to know, do, and practice to be successful in that assessment? Consider how you can support this success, both in class and through assignments. How can you create musically engaging activities centered around these skills? What prerequisite skills do you want to practice to ensure that students are ready for the assessment?

Conclusion

This article offers a path to implementing backward design principles in aural skills courses, and argues for an approach to course construction that begins with outcomes,

then assessments, then activities. We hope that engaging in this process will help instructors rethink aural skills instruction, and encourage them to teach differently from how they may have been taught. This may spur readers' imaginations to be more creative in course design and outcome creation, resulting in a significant impact on the instruction of collegiate music students. To facilitate this process, this link (https://docs.google.com/document/d/1WW-gStOE-nhO8qy59jhsdKIzacKsQtREBs2Pw__tEgg/edit?usp=sharing) provides a worksheet that contains all of the prompts from the "join the process" activities above.

While this article outlines the backward design process (creating outcomes, crafting assessments, and designing learning activities), we also note that this process can be more cyclical. While the flow from outcomes to assessments to activities works well, you may find it necessary to return and revise previous stages; sometimes, designing an activity helps us realize a better way of framing an outcome. You may also find yourself revising an assessment after developing some activities, and even revising outcomes after designing assessments. In Example 9, we have added left-facing arrows to the backwards design process from Example 2 to illustrate how thinking about one part of the process often impacts another. This cyclical process may also include reviewing your outcomes at the end of each semester, noting where students struggled (was each outcome Achievable?), and what might be improved when you teach the course again. Throughout, it is important to hold your pedagogical values and priorities at the fore and to consider how you can best engage your students on their musical pathways.



Example 9
Visualization of backward design, with added arrows suggesting the cyclical nature of the process.

Taking part in the backward design process may also lead to novel course outcomes. Indeed, an earlier version of this article was presented at the 2023 annual meeting of the Society for Music Theory, where workshop participants collaborated to create outcomes, assessments, and activities they would most like to implement in their aural skills courses.[7] The majority of the participant groups wrote outcomes that expressed a desire to teach students how to play with other musicians by ear in some way, with assessments including playing a missing instrumental part with a lab band, creating a new mix of a song given stems, and engaging with recordings by playing along, reproducing, or transcribing. Error detection was also a common theme, with groups writing outcomes such as, "Students will be able to correct errors within a multi-part texture," and "Students will be able to demonstrate critical listening skills by detecting and correcting errors between multiple musical stimuli." Many of these outcomes pointed to a more creative and varied set of activities than what is typically considered to be aural-skills work. Returning to the observation by Chenette, Davis, and Kleppinger (2022) that aural skills courses have largely remained consistent over the past few decades, we hope that engaging in the backward design process has the potential to unleash a creative flourishing of new approaches that would not only benefit our field, but also and more importantly, benefit our students.

7 Reference to the materials created by workshop participants has been approved by the Homewood Institutional Review Board at the Johns Hopkins University #HIRB00018432.

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