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Developing Aural Skills: It's Not Just A Game

Deborah Rifkin and Diane Urista

Recent developments in aural skills training have led to alternative approaches that depart from traditional sight-singing and dictation exercises.¹ In this spirit, we developed game playing as an effective strategy for use in our classrooms at Oberlin College Conservatory. We find that game playing fosters good musicianship, while cultivating a positive interactive classroom that is conducive to learning.

We turned to game playing because of our dissatisfaction with traditional dictation exercises. Although dictation can be helpful in promoting some skills, it has disadvantages. More than other activities, dictations can create a debilitating anxiety that impedes learning, especially for the weaker students in the class. Failure to make progress at the beginning of a dictation exercise can overwhelm any possibility of further constructive listening. In addition, if your classroom contains a mix of students with and without perfect pitch, dictation can polarize the class. The students with pitch become bored, while the other students become anxious, even resentful.

We find dictation effective only if the student possesses certain skills—skills that don't necessarily develop by simply taking more dictation. In his seminal book, *Aural Skills Acquisition*, Gary Karpinski identifies four conceptual stages of melodic dictation: hearing, remembering, understanding, and notation.² In traditional

¹ Kate Covington, "An Alternative Approach to Aural Skills Pedagogy," *Journal of Music Theory Pedagogy* 6 (1992): 5-18; Kate Covington and Charles Lord, "Epistemology and Procedure in Aural Training: In Search of a Unification of Music Cognitive Theory with Its Applications," *Music Theory Spectrum* 16, no. 2 (1994): 159-170; Steven Laitz, "Paths to Musicianship," in *Musicianship in the 21st Century: Issues, Trends and Possibilities*, ed. Sam Leong (Sydney: Australian Music Centre, 2003), 130-150. Steve Larson, "'Integrated Music Learning' and Improvisation: Teaching Musicianship and Theory through 'Menus, Maps, and Models,'" *College Music Symposium* 35 (1995): 76-90; Peter Silberman, "Post-Tonal Improvisation in the Aural Skills Classroom," *Music Theory Online* 9, no. 2 (2003); and Diane Urista, "Beyond Words: The Moving Body as a Tool for Musical Understanding," *Music Theory Online* 9, no. 3 (2003).

² Gary Karpinski, *Aural Skills Acquisition* (Oxford: Oxford University Press, 2000), 64-92; see also Karpinski, "A Model for Music Perception and its Implications in Melodic Dictation," *Journal of Music Theory Pedagogy* 4 (1990): 191-230.

dictation practice, skills are usually assessed solely in terms of the final stage—notation. Errors in a student’s finished exercise will indicate the existence of a problem, but won’t necessarily reveal the source of the problem or its solution.

Our gaming strategy addresses some of these problems by developing and assessing skills from the middle stages of Karpinski’s model, namely remembering and understanding. This allows instructors to identify where problems occur, and to prescribe appropriate remedies. Furthermore, game playing provides a stimulating and cooperative environment that integrates the class through social interaction and active learning.³ Rather than working in isolation—the usual dictation setting—students work together on a specific skill, group improvisation, or compositional task. Instead of regarding mistakes merely as wrong answers, the mistakes themselves become integral to the learning process. In short, game playing allows students to contribute according to their abilities and to progress at their own pace.

Researchers in other disciplines use game playing to model the essential structures of their subjects. In music, game playing provides insights into human perception and how the mind processes musical stimuli, topics that are among the most complex and elusive problems for aural skills teachers. In this article we present six games with far-reaching ramifications for the development of musicianship skills, including:

- building short- and long-term memory capabilities
- recognizing and becoming fluent with scale-degree functions, modulating techniques, phrase structures and conventions of notation
- improving tonic retention, relative pitch, concentration, and improvisation skills

We organize our discussion into three general sections, according to games that focus on I) scale degree function, II) modulation, and III) phrase structure.

³ Please see Appendix A

SECTION I: GAMES THAT FOCUS ON SCALE-DEGREE FUNCTION

1. Name That Scale Degree

Our first game, "Name That Scale Degree," develops relative pitch and sensitivity to scale-degree function. In particular, it teaches students to recognize the function of pitches by their positions in the tonal hierarchy.⁴ Students begin the game by standing or sitting in a semi-circle, so as to see and hear each another. They learn by rote the characteristic resolution patterns for each scale degree, which are shown in Example 1a.

Example 1 consists of two musical staves, A and B, illustrating resolution patterns for scale degrees. Staff A (Major mode) shows scale degrees 1 through 7 with their respective resolution patterns. Staff B (Minor mode) shows scale degrees 1 through 7 with their respective resolution patterns, including arrows indicating the direction of resolution for degrees 6 and 7.

Example 1: Resolution patterns for "Name That Scale Degree," major and minor modes

Notice that each degree of the scale is elaborated by a melodic figure that returns to tonic. After a few hearings, students sing the entire collection of seven patterns on scale-degree numbers.⁵ These patterns become an internalized framework used throughout the aural-skills curriculum.⁶



Students are now ready to identify and sing individual scale degrees. First, they sing the seven-bar resolution pattern, after which the teacher recites a scale degree number. The students must sing back the specified scale degree with its associated melodic figure.

⁴ "Name that Scale Degree" is based on a compilation of ideas derived from different sources. In particular, see Bruce Arnold, *Complete One Note Method* (New York, NY: Muse-Eek Publishing Co., 1995); Bruce Benward and Timothy J. Kolosick, *Instructor's edition to Ear Training: A Technique for Listening*, 5th ed. (Dubuque: Brown and Benchmark, 1995). We are also indebted to Klaus Sinfelt and Stephan Eckart for sharing their ideas with us.

⁵ The instructor is free to use other systems, such as moveable do. Although we use scale degree numbers, solmization syllables can also be used in all of the games presented here.

⁶ Our discussion focuses on the major-mode pattern shown in Example 1a. The minor mode shown in Example 1b can be introduced at a later stage.

For example, if the teacher says $\hat{2}$, then the student sings back the pattern shown in m. 2 of Example 1a. If the teacher calls out $\hat{5}$, then the student sings back the pattern in m. 5, and so forth. Example 2 illustrates two beginning rounds of "Name that Scale Degree."

Teacher says "2"	Student(s) sing:	 (or re - do)
Teacher says "5"	Student(s) sing:	 (or sol - do - sol - do)

Example 2: Beginning Rounds of "Name That Scale Degree"

Singing scale degrees with their resolution patterns teaches students to gauge not only the distance, but, more importantly, to feel the sensation of each tone's relationship to tonic.⁷ We encourage students to inflect each resolution pattern with subtle differences in timing and dynamics to express these unique relationships. We also recommend that they gesture the expressive character of these patterns with their hands to engage the kinesthetic response. Students practice (often over several classes) until they are fluent at finding and singing any scale degree with its associated melodic figure. As they progress, they are asked to identify scale degrees at an increased rate.

When students have become fluent with this stage of the game, they can be challenged further. In a slightly more difficult version, students sing back scale degrees without their accompanying resolution patterns. For example, if the teacher requests $\hat{3}$, then students sing only that scale degree and not the melodic figure of a descending third. This strategy accelerates the pace and develops an instant recognition of a tone's position in the tonal hierarchy. Students soon realize that some scale degrees are harder to identify

⁷ For an excellent explanation on the importance of training students to understand tonal function see Michael Rogers, *Teaching Approaches in Music Theory* (Carbondale: Southern Illinois University Press, 2004), and "Review of 'To Doh or Not to Doh,'" *Journal of Music Theory Pedagogy* 14 (2000): 15-25.

than others. For example, $\hat{6}$ and $\hat{4}$ are more difficult to recognize than the tonic or the leading tone. Similarly, students might have trouble moving from $\hat{7}$ to $\hat{3}$. From this experience, they discover varying degrees of stability and instability and inherent harmonic implications among the tones of the tonal hierarchy. The goal is to reproduce rapidly any scale degree at random, accurately and in a steady tempo.

Thus far, students have identified pitches without notation. To incorporate notation, the teacher may now indicate the scale degree by pointing to it on the board (instead of reciting it). When the game is played in this manner, students begin to associate tonal functions with both aural and visual cues. This association is crucial, because reading music is not only about recognizing letter names on a page, but also comprehending tonal function and responding musically to that function while performing.⁸

In another variation of the game, the teacher asks students to identify scale degrees. The teacher plays a key-defining progression to establish tonic, followed by a single pitch. The student responds with the scale degree number or syllable. For example, the teacher plays the progression to define the key of C major, followed by the pitch G3; the students respond by singing "5" to indicate the fifth scale degree. Eventually, the teacher can increase the number of pitches identified in the exercise.

⁸ Michael Rogers so eloquently puts it, "The crux of sightsinging is not labeling systems per se (how to name the notes when singing), ... but rather hearing systems (The mental processing and organization of one's thinking to accurately "find" and, more importantly, "to feel" pitches while singing)." (Rogers 2000, 15). We have noticed students who practice this game perform with much greater awareness to scale degree function.

To this point we have focused on pitches near middle C; eventually we venture to more extreme registers. This often becomes a moment of revelation for students who marvel at their newly found ability to identify any scale degree within the span of several octaves. Focusing on scale degrees in extreme registers helps students to hear pitches outside the more limited range of their own instrument. This skill is particularly useful for those who are studying conducting, which requires the ability to recognize scale degrees quickly in any register.⁹ The goal is for students to identify scale degrees within any register without having the key-defining progression replayed.

“Name that Scale Degree” enables students to experience the full “personality” of tones in a more active, visceral manner compared to traditional dictation exercises. Students discover on their own the characteristics of tones as described by Zuckerkandl and other theorists.¹⁰ Students with perfect pitch initially may have difficulty perceiving the innate character of a tone because they are accustomed to identifying pitches only by name. This game compels students to learn the function of pitches. By function we mean the resolution tendencies of scale degrees, akin to what Zuckerkandl refers to as their “dynamic qualities.”¹¹

“Name that Scale Degree” also fosters a student’s ability to retain tonic. Inexperienced students require the repetition of the resolution pattern or key-defining progression to maintain a sense of tonic. As they gain experience, students identify a series of scale degrees without depending upon repetitions, because the point of reference (the tonic) is now internalized. Eventually, they learn to recognize scale degrees for extended periods of time. This game imprints a mental point of reference, a compass that positions them spatially within the tonal hierarchy.

⁹ The teacher also can play the key-defining progression followed by melodic and harmonic intervals, and ask students to sing the interval with scale-degrees followed by the name of the interval. For example, the teacher plays the progression, followed by melodic figure d-f. The students sing “2-4” or “re-fa” followed by the words “minor third.” Intervals can be taught within and apart from tonal contexts. Our gaming approach is consistent with established pedagogical techniques insofar as it recognizes that identical intervals in different tonal contexts are perceived differently. After interval recognition, the focus shifts to the recognition of trichords. In the second semester we introduce all twelve pitches, a strategy that serves as an introduction to chromaticism.

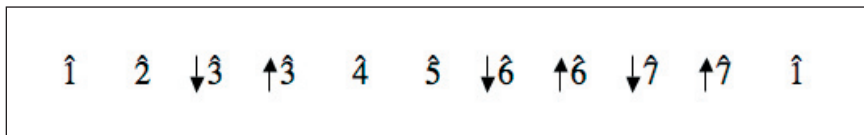
¹⁰ Victor Zuckerkandl, *Sound and Symbol*, trans. Willard R Trask (Princeton: Princeton University Press, 1973); Wallace Berry, *Structural Functions in Music* (Englewood Cliffs: Prentice-Hall, 1976); Arnold Schoenberg, *Harmonielehre* (Wien: Universal Edition, 2001, c1922).

¹¹ Zuckerkandl, *Sound and Symbol*, 11-31.

In summary, this game promotes two vital aspects of musicianship: 1) the ability to retain one's tonal bearings; and 2) the recognition of long-range melodic associations.¹² Playing the game facilitates an effective experience of tonic retention. In our gaming philosophy, we emphasize experience and instant reactions as key components because they promote skills through active learning.

2. Growing Melody

Our second game, "Growing Melody," develops the ability to remember pitches as scale-degrees more broadly within melodies and to transfer pitches from short- to long-term memory.¹³ The teacher begins by providing a list of scale degrees; Example 3 shows a possible collection. The arrows indicate raised and lowered inflections of scale degrees in the major and minor modes.¹⁴ A teacher can also choose a collection that emphasizes a new harmony or technique. For example, the collection in Example 3 features modal mixture. Similarly, a collection may emphasize $\sharp 4$ when students are first learning about modulation to the dominant.



Example 3: Collection of Scale Degrees for "Growing Melody"

¹² According to cognition studies, untrained listeners in particular are unaware of large-scale key relationships and have limited abilities to retain tonic. See Nicholas Cook, "The Perception of Large-Scale tonal Closure," *Music Perception* 5, 197-205; and Elizabeth Marvin and Alexander Brinkman, "The Effect of Modulation and Formal Manipulation on Perception of tonic Closure by Expert Listeners," *Music Perception* 16, 389-407. One of the benefits of this game is that it stretches students' perceptual capabilities and trains them to retain tonic over extended periods of time.

¹³ In contrast to "Name that Scale Degree," an exercise in which the location of scale degrees within the tonal hierarchy are illuminated through isolation, in our subsequent games students integrate their newly acquired scale degree knowledge into larger melodic contexts. We recommend that students begin this process immediately, so that they experience the way in which scale degrees react with one another in actual musical settings.

¹⁴ Showing chromatic inflections with arrows works better than using accidentals because arrows are generalized for any key.

The teacher establishes tonic and provides an opening incipit (usually 3-5 notes long), which all students sing on scale degrees. Each student then takes a turn singing the previous melodic incipit on a neutral syllable while adding an additional pitch.¹⁵ For example, the first player recites the opening incipit and adds a pitch. The next student recites the first player's melody plus an additional pitch. Play continues until everyone has added a pitch or until the majority of students can no longer remember the melody.

In the spirit of game playing, students contribute to the melody according to their own abilities. Students who struggle tend to repeat pitches, or provide stepwise connections, which can create boring, repetitive melodies. Following the students' responses, the teacher might invite constructive criticism of less musical melodies, encouraging discussion as to how they could be improved. On the other hand, more confident students may challenge their peers and show off by introducing difficult leaps, motivic repetitions, registral shifts, or deceptive resolutions of tendency tones.

A primary challenge of this game is the ability to retain a series of melodic pitches for an extended period of time. Students are encouraged to conceptualize each pitch as a scale degree, and to trace the course of the melody through the scale-degree diagram provided on the board (see Example 3). This sound-to-symbol conversion is one method of transferring pitches from short- to long-term memory. The teacher can help the memorization process by using the hand to outline the melodic contour with each repetition. For students who are not adept at quick conversion of pitches to scale degrees, contour can be an intermediary memory aid. Inevitably some students have trouble remembering the tune as it increases in length. When this happens, they may request a review of the melody from others in the class. At this point, it is useful to discuss the characteristics that make the melody hard to remember. Is there an awkward interval? Are there too many repeated notes? Is the melody uninteresting and without direction?

Not infrequently, students will sing a pitch that is not part of the game's collection. Instead of regarding these extraneous pitches as mistakes (as one would in a conventional dictation exercise), the instructor uses them as an opportunity for group identification and

¹⁵ The student sings on a neutral syllable so that the rest of the class remains engaged by determining scale degrees as tones are sung. We use this method in some of the other games described later in the article.

discussion. This process is one of the advantages of gaming versus dictation. In a dictation exercise, students work alone under pressure to arrive at the correct answer. In gaming, students work together while developing individual skills. Doing so creates a classroom atmosphere in which all responses, those expected and unexpected, are seen as an integral part of the learning process. One student's "mistake" provides an opportunity for everyone to benefit.

This game increases a student's ability to remember longer melodies. According to George Miller's seminal article, an average person can retain five to nine discrete items in short-term memory.¹⁶ To remember longer melodies, students must learn to group patterns of pitches. Conceptualization of a melody in terms of scale degrees encourages students to group pitches according to tonal functions.¹⁷ After each student has sung in turn, or memory has failed him or her, the class sings the melody with scale degrees and then notates it.

At this point it can be helpful to analyze the finished tune, which provides an opportunity to remark on ways in which the melody follows or challenges tonal conventions. For example, are there melodic continuations that are contrary to normative resolution patterns? (Is there an interval of an augmented-second between $\hat{7}$ and $\hat{6}$, or a lowered $\hat{7}$ moving up to $\hat{1}$?) Are there multiple highpoints? Are there motivic relationships?¹⁸ This activity allows students to gain valuable insights about processing melodic events. For instance, students recognize that stepwise motion is easy to sing and can promote direction, whereas leaps produce melodic tension, harmonic implications, and registral shifts. In addition, they learn to perceive melodies not merely as a consecutive string of individual pitches, but as building blocks of melodic figures—arpeggiations, neighboring figures, and decorative chromatics. As

¹⁶ George Miller, "The Magical Number Seven, Plus or Minus 2: Some Limits on Our Capacity for Processing Information," *Psychological Review* 63 (1956): 81-97.

¹⁷ See Karpinski's discussion on the benefits of chunking, which he explains not only develops melodic memory, but teaches listeners to think "analytically, functionally, and structurally." Gary S. Karpinski, *Aural Skills Acquisition: The Development of Listening, Reading, and Performing Skills in College-Level Musicians* (New York: Oxford University Press, 2000), 73-77. Potter also discovered that successful dictation takers used chunking as a strategy to remember melodies. Gary Potter, "Identifying Successful Dictation Strategies," *Journal of Music Theory Pedagogy* 4 (1990): 63-71.

¹⁸ For comparison purposes, the nonconventional resolutions could be substituted with more conventional ones. We also recommend adding expressive marks to the melody. Students could also add an accompanying bass line or harmonic progression.

students gain experience, the teacher can set more parameters for the melody, such as requiring scale degrees that invoke a particular chromatic harmony, or motivic parallelisms between antecedent and consequent phrases. With guidance, students can become more adept at improvising musically well-crafted melodies involving motivic relationships, harmonic structure, and overall shape and balance.¹⁹

SECTION II: GAMES THAT FOCUS ON MODULATION

Modulation is one of the more elusive concepts for students to grasp aurally. Students usually understand the written concept for modulation long before they can produce a melody that modulates. In our classes, we focus on two main strategies for hearing modulations. The first involves the comparison of beginning and ending tonics. The skills involved include: 1) the retention of tonic during key change interference, and 2) the determination of the interval between old and new tonics. In general, this method emphasizes a fixed-do, or an absolute pitch system.

The second strategy focuses on how absolute pitches change function in the process of modulating from one key to another. For example, the leading tone in the home key becomes stable $\hat{3}$ in the dominant key; this process of functional transformation explains pivot events and applies also to chromatic alterations. In contrast to the first strategy, this technique emphasizes a moveable-do or relative pitch system. Whereas the first strategy facilitates nonadjacent, long-term memory associations, the second develops moment-to-moment processing of events. We present two games that promote both strategies of hearing and interpreting modulations.

3. One-Note Wonder

The game “One-Note Wonder” focuses on modulation through a pivot pitch. The teacher provides a “wondrous” pitch that, over the course of the game, will be interpreted randomly as one of the seven possible scale-degrees ($\hat{1}$, $\hat{2}$, $\hat{3}$, $\hat{4}$, $\hat{5}$, $\hat{6}$, $\hat{7}$). The first student randomly assigns any scale degree to the “wondrous” pitch, thus establishing its function in the tonal hierarchy. Then, the student sings the pitch in the resolution pattern (See Example 1) for that scale degree and

¹⁹ This game can also be useful for teaching atonal melodies.

concludes with a short melodic figure that confirms the new tonic. For instance, if the wondrous pitch is G4, the student may choose to hear and sing it as $\hat{5}$ (Example 4a), meaning that G now functions as the dominant of C major; the melodic continuation (which is improvised) confirms the new tonic.

student 1 student 2

A $\hat{5}$ $\hat{1}$ $\hat{5}$ $\hat{1}$ $\hat{1}$ $\hat{2}$ $\hat{1}$ $\hat{7}$ $\hat{1}$ **B** $\hat{7}$ $\hat{1}$ $\hat{1}$ $\hat{2}$ $\hat{1}$ $\hat{7}$ $\hat{1}$

C major A \flat Major

resolution pattern confirms new tonic resolution pattern confirms new tonic

student 3 student 4

C $\hat{4}$ $\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{1}$ $\hat{2}$ $\hat{1}$ $\hat{7}$ $\hat{1}$ **D** $\hat{4}$ $\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{1}$ $\hat{2}$ $\hat{1}$ $\hat{7}$ $\hat{1}$

D minor D major

resolution pattern confirms new tonic resolution pattern confirms new tonic

Example 4: "One-Note Wonder"

The next student may choose $\hat{7}$ (Example 4b), in which G now functions as the leading tone of A-flat major. As students sing and interpret the "wondrous pitch" in turn, they hear the diverse keys within which a single pitch can function. Example 5 indicates the keys and some of the possible responses for any given pitch (Example 5 assumes G as the starting tone).

A Major-mode keys that use the given pitch

B Minor-mode keys that use the given pitch

C Some chromatic pivots

Example 5 illustrates three methods of identifying keys for a given pitch (G):

- A Major-mode keys:** Shows G major (scale degree 1), F major (scale degree 2), Eb Major (scale degree 3), and D major (scale degree 4) in the first line. The second line shows C major (scale degree 5), Bb major (scale degree 6), and Ab major (scale degree 7).
- B Minor-mode keys:** Shows G minor (scale degree 1), F minor (scale degree 2), E minor (scale degree 3), and D minor (scale degree 4) in the first line. The second line shows C minor (scale degree 5), B minor (scale degree 6), and A minor (scale degree 7).
- C Some chromatic pivots:** Shows Db Major (scale degree #4) and F# minor (scale degree b2).

Example 5: Possible Keys for a Given Pitch (G as the starting tone)

When first playing the game, it is useful to have students interpret the wondrous pitch as one of the possible scale degrees in a major scale (Example 5a). Then the same process is repeated with the wondrous pitch functioning as a scale degree in a minor scale (Example 5b). The next step allows students to interpret the “wondrous pitch” in either the major or minor scale. More advanced students can interpret the given pitch not as a diatonic tone, but as a chromatic inflection (Example 5c). This game teaches modulation through a pivot pitch, as students learn to adjust quickly to the change of scale-degree function involved in moving from one key to another. This exercise also heightens an awareness of the half step and whole step relationships within the major and minor scales.

4. Tonal Gateways

Compared to “One-Note Wonder,” which focuses on identifying pivot tones, “Tonal Gateways” models (in three steps) the entire process of moving from one key to another. We make the allusion to a “gateway” because a pivot tone can suggest various tonal goals or paths. Through a process of cooperative learning students learn to compose and recognize modulating melodies.

Composing Modulating Melodies

The object is to compose a melody that modulates to a new key using the three steps underlying most modulations:

- 1) Establish the home key.
- 2) Determine a “tonal gateway” that leads to the new key.
- 3) Establish the new key.

The teacher asks a student to choose a clef, meter, starting key and a final key. The instructor then labels three broad areas on the board that correspond to the modulatory process outlined above. The teacher directs individual students to improvise a short melodic pattern (on a neutral syllable) to establish the home key, the new key, and the modulatory “tonal gateway.”²⁰ Each step usually comprises two or three measures. The entire class then sings back the improvised pattern for each step using scale-degrees, after which the teacher or student writes the improvised pattern in the appropriate area indicated on the board.

Students soon realize that some patterns work better than others as modulatory idioms: an arpeggiation of the tonic triad often works best to establish the home key; the introduction of the new leading tone serves as part of the gateway that leads from the tonic; a concluding melodic pattern (3-2-1-2-1) establishes the new key through a cadential idiom. Through trial and error students discover, for example, which scale degrees are necessary for modulation and the considerations of pacing and rhythm that provide a smooth and logical modulation.

²⁰ The student uses a neutral syllable so that the rest of the class remains active by determining the scale degrees of the melody as they hear it.

Identifying Modulating Melodies

After understanding the process of modulation through group composition, students are ready to identify aurally modulating melodies. This activity reverses the process so that, instead of composing modulating melodies, students must hear and recognize them.

The teacher begins by playing a modulating melody and asks students to remember the original tonic. When the melody is finished, students sing the new tonic followed by the old tonic, which enables them to determine whether the new key is either closely- or distantly-related to the home key. Using short melodies facilitates this comparison because the two tonics are temporally proximate. More advanced students can be challenged with longer melodies.²¹

Next, students explain the modulation in terms of its three phases by answering the following questions. Which part establishes the first tonic? Which confirms the new tonic? Where does the pivot occur and what pitches have been altered to establish the new key? To answer these questions, students must rely on both aural and theoretical knowledge.

After students determine the three phases, the teacher presents a new melody that begins like the first, but modulates to a different key. In other words, the home key region remains the same, but the tonal gateway and new key differ. Hearing tonal gateways to different keys teaches students to differentiate between close and distant relationships. In short, comparing brief modulating melodies helps students determine different stages of a modulation and the structural relationships between keys.

SECTION III: GAMES THAT FOCUS ON PHRASE STRUCTURE

Whereas the previous two sections describe games that focus on scale degree function, tonic retention, and aspects of melody and modulation, we now present games that address the formal issue of phrase structure.²²

²¹ Klonoski also offers some excellent distraction exercises to help students retain tonic in the midst of a key change. See Edward Klonoski, "Teaching Pitch Internalization Processes," *Journal of Music Theory Pedagogy* 12 (1998): 81-96.

²² We use William Caplin's terminology to describe phrase structure. See *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven* (New York: Oxford University Press, 1998), 9-12, 35-70.

5. Measure-by-Measure

In "Measure-By-Measure" each student improvises a melodic fragment that can function logically within a given phrase structure such as a period or a sentence. The goal is to teach students about phrase structures by improvising them. The teacher begins with a diagram of a phrase that serves as the basis of the exercise, such as the compound period shown in Example 6a.²³ The teacher then provides the class with the basic idea (bi) of the antecedent phrase (Example 6b). Students are asked to improvise a melodic fragment that is part of the given model. Each student takes a turn

The diagram illustrates the 'Measure-by-Measure' exercise. Part A shows a compound period structure with two phrases, 'a' and 'a'', each consisting of a 'basic idea' followed by a 'continuation...cadence'. The first phrase is labeled 'HC' (Half Cadence) and the second 'PAC' (Perfect Cadence). Part B shows the 'beginning incipit provided by teacher' in musical notation. Part C shows a 'transcription of a game' where seven students improvise fragments: 'given basic idea', 'student 1', 'student 2', 'student 3', 'student 4', 'student 5', 'student 6', and 'student 7'. The first three fragments end with 'HC' and the last four with 'PAC'.

Example 6: "Measure by Measure"

²³ A compound period is a formation in which both the antecedent and the consequent phrases are themselves sentences. See Caplin, *Classical Form*, 65-68.

improvising two measures on a neutral syllable until the form (in this case, a compound period) is completed.

In "Measure-by-Measure," students do not repeat the melody from the beginning (as in "Growing Melody"), but instead improvise a melodic pattern continuing from the one improvised by the previous student. Example 6c shows a transcription of a game performed by students who had never played "Measure-By-Measure." In this case they were able to create an antecedent phrase ending with a half cadence, followed by a parallel consequent phrase concluding with a perfect authentic cadence. Improvisation, therefore, leads them to consider not only the scale-degree functions of their melody, but also the harmonic implications of their choices. A student, for instance, must choose $\hat{5}$, $\hat{7}$, or $\hat{2}$ as the ending pitch of the first phrase, tones that imply dominant harmony. In addition, students must keep track of how their pattern functions in the overall phrase structure. The fourth student, therefore, had to reiterate the opening basic idea in m. 9 to create the beginning of a parallel consequent in a 16-bar parallel period (Example 6c).

When the entire phrase structure is completed, the class sings the resultant melody with scale degrees. In order to sing the entire period, students need to memorize the phrases as they are improvised. After playing the game several times, students notice that certain parts of the formal structure are easier to remember than others. For instance, beginnings and endings of phrases are easier to recall than the middle measures.²⁴ The continuations in mm. 5 and 13, for instance, are more difficult to remember than phrase beginnings. This realization results in a discussion about how memory works. At first, students may assume that memory is linear—an assumption reinforced by traditional dictation methods, which involve notating a series of successive events. In playing this game students not only learn to recognize and develop nonlinear memory skills, they also become sensitive to the ways in which they memorize. Armed with this knowledge, students can focus attention on the parts of the phrase that are hardest to remember—in this case, the middle.

²⁴ Psychological literature refers to this phenomenon as the "primacy" and "recency" effects. For the effects of this phenomenon in music, see Linda A. Roberts, "Modality and Suffix Effects in Memory for Melodic and Harmonic Musical Materials," *Cognitive Psychology* 18 (1986): 123-57.

After singing the phrase on scale degrees, most students internalize the information required for notation. In other words, they determine the scale degrees, commit the melody to long-term memory, and conceptualize the melody in terms of its phrase structure. The teacher can vary the game by asking students to notate the melody in another key or clef. In traditional dictation, students tend to rush to the notation phase, assuming that they have to fill a blank sheet of paper. Unfortunately, such focus on notation eliminates several cognitive processes.²⁵ When students begin with the notation phase, omitting these intermediate steps, they often conceptualize melodies as successions of intervals, leading to the familiar “off-by-one” mistake. “Measure-By Measure” encourages a mental processing of a melody based on tonal functions and phrase structure, not on interval successions.²⁶

²⁵ Karpinski, *Aural Skills Acquisition*, 62-64.

²⁶ One could use some of these suggested strategies, with traditional dictation exercises as well, to avoid the “just-get-the-notes-down” approach. See Karpinski, *Aural Skills Acquisition*, 82-88, and Rogers, *Teaching Approaches*, 100-119. Both of the foregoing authors voice deep concerns about a merely perceptual, versus analytical, approach to dictation.

6. The Terminator

Our final game, “The Terminator,” teaches phrase structure through group improvisation. Students are asked to “terminate” a period form by improvising a consequent phrase to a provided antecedent. To set the stage for the game, the teacher plays the antecedent phrase of a parallel period. Example 7 shows the beginning of Haydn’s, Piano Sonata No. 44.²⁷

A Antecedent provided by teacher
Haydn, Sonata No. 44 in G minor, Hob. XVI, mvt. 1, mm. 1-2

B Structural pitches and cadence of the antecedent phrase
G minor: HC

C An improvised consequent phrase
G minor: PAC

D Another improvised consequent phrase
B \flat Major: PAC

E Haydn's consequent (Sonata No. 44, mvt. 1, mm. 3-4)
G minor: PAC

Example 7: “The Terminator”

²⁷ This game works best if the students are unfamiliar with the given antecedent.

First, students memorize the phrase, and sing it on a neutral syllable. Next, students analyze the phrase in small groups, identifying structural pitches and the cadence. To confirm the group analysis, the class is asked to sing only the structural pitches of the phrase on scale degrees, as shown in 7b. Ideally, all of these tasks can be done aurally; if necessary, however, they can consult a notated version provided by the instructor.

The real fun begins when the teacher calls on a student to finish the parallel period. The class sings the opening measures of the antecedent, with or without variation; then a student improvises a consequent phrase ending with a perfect authentic cadence. Two improvised consequents are shown in Examples 7c and 7d. For each round of the game, the entire class sings the antecedent, and then a student improvises a consequent. After several turns, the teacher plays the composer's consequent (Example 7e) and facilitates a discussion comparing the different versions. For instance, a teacher may point out Haydn's use of the higher register, asking students to comment upon its effects on the shape of the phrase.

As shown in the transcriptions of student responses, one participant improvised a consequent that modulated (Example 7d). This could lead to a discussion on the comparative effects of modulating versus non-modulating periods. Interestingly, students sometimes prefer their own improvisations to that of the composer, and are keen to explain why their version is best! Although we've used a simple example to introduce the game, it is also effective to choose a more complicated period featuring cadential expansion, phrase overlap, or truncation. Through the process of comparison, these compositional processes inspire interesting discussions about normative phrase structure, expectations that are thwarted, transformed, or deferred, as well as symmetry. It is also advantageous to identify aspects of a phrase that are typical of a particular style, time, or composer.

In summary, "The Terminator" promotes an awareness of phrase structure by engaging students in the creative process itself. Students contribute at their own levels and develop an enriched analytical understanding based on the creative input of their peers.

CONCLUSION

At the beginning of this article we maintained that traditional dictation had disadvantages that presented problems in the aural skills classroom. Our experience reveals to us that game playing offers solutions to these problems and addresses far-reaching aspects of cognitive and aural learning in the aural skills classroom. The methods of these games are versatile, making them applicable to various teaching styles and situations. Game playing encourages an interactive classroom—students work at their own pace, learning from each others' ideas and mistakes in a stimulating, cooperative atmosphere that builds confidence. While the approach is intended to be fun, in some cases even funny, we have observed that students learn from this approach that aural skills are essential to good musicianship, and not just a game.

APPENDIX A: ACTIVE LEARNING LITERATURE

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APPENDIX B: SUMMARY OF THE GAMES

The Game	Aural Skills That the Game Promotes
Name That Scale Degree	Relative pitch, sensitivity to scale-degree function, tonic retention
Growing Melody	Scale-degree function in a melodic context, transfer of pitches from short- to long-term memory, concentration, notation
One-Note Wonder	Modulation through a pivot event, awareness of the numerous keys to which a pitch belongs
Tonal Gateways	Modulation in three phases, retention of tonic during key change interference, non-adjacent memory associations, awareness of the structural relationships between different keys
Measure by Measure	Structural understanding of phrase structure, sensitivity to scale-degree and harmonic function, long-term memory notation
The Terminator	Structural and stylistic understanding of phrase structure, sensitivity to scale-degree and harmonic function, long-term memory notation