

1-1-2000

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Recommended Citation

Devore, Richard and Lorenz, Ralph (2000) "Teaching Ear Training Using Medieval and Renaissance Music," *Journal of Music Theory Pedagogy*: Vol. 14, Article 7.

Available at: <https://digitalcollections.lipscomb.edu/jmtp/vol14/iss1/7>

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Teaching Ear Training Using Medieval and Renaissance Music¹

Richard Devore & Ralph Lorenz

Most commercially available aural skills materials intended for use in undergraduate core curricula focus almost entirely on the study of tonal and/or twentieth-century techniques and literature. This approach, however, neglects the huge body of Medieval and Renaissance literature that provides the foundation for later Western music. Students do study this repertoire in college music curricula, of course, but often systematic study is limited to their music literature and music history coursework, with only sporadic exposure in written music theory classes (most often to sixteenth-century counterpoint) and ensembles.² They consequently never receive systematic aural or analytical training in music written before about 1650. Such an approach is sometimes dictated by time limitations within a four-year curriculum. However, in some cases it may be tacitly supported by music theory instructors who are not accustomed to incorporating aural study of Medieval and Renaissance literature in their curriculum. This situation may at least par-

¹This paper was first presented as part of a poster session at the annual meeting of Music Theory Midwest, Butler University, Indianapolis, IN, 15 May 1999.

²A few theory and ear training textbooks have emphasized the study of this repertoire. Theory textbooks that use a chronological historical approach include John Baur, *Music Theory through Literature*, 2 vols. (Englewood Cliffs, NJ: Prentice-Hall, 1985); and Paul Cooper, *Perspectives in Music Theory: An Historical-Analytical Approach* (New York: Dodd, Mead & Company, 1975). We use the first volume of Baur for our second-year classes; although out of print, it is available directly from the author. Skills textbooks that have used this approach include Richard P. DeLone, *Literature and Materials for Sight-singing* (New York: Holt, Rinehart and Winston, 1981); and Gary E. Wittlich and Lee Humphries, *Ear Training: An Approach through Music Literature* (New York: Harcourt Brace Jovanovich, 1974).

tially be a result of the emphasis placed on tonal and twentieth-century music in the training they experienced as undergraduate music majors and as future music theory faculty.

A fundamental premise of our approach to theory instruction is that undergraduate music majors need to learn about all historical styles of Western music from both a theoretical and an aural perspective. To this end, we have designed and adopted a core curriculum that incorporates ten weeks of Medieval and Renaissance music into our third-semester class, titled "Music Theory to 1750." This class, like all of our core theory classes, uses an integrated approach in which the teaching of written and aural skills is correlated. Students concurrently analyze, compose, take dictation, sing, and play keyboard exercises dealing with one topic.³ Students are introduced to modal music after they have received two semesters of aural and written training dealing with tonal music and have refined basic concepts of sight singing, dictation, composition, and analysis.

Waiting until the third semester to begin this study raises some questions about the curriculum. For example, what material must be omitted to make room for this approach? How do students handle a return to highly chromatic materials in the fourth semester? Our experience has shown that the higher level of maturity that students possess in their second year of study enhances their receptivity to this approach, as first-year students generally enter college with a fairly narrow view of music literature. After having built a foundation of basic theoretical materials, students are better prepared to comprehend modal materials in the context of historical development. Spiral learning is encouraged because concepts that are common to both modal and tonal music, such as non-harmonic tones, are reinforced from a new perspective.⁴ The Medieval and Renais-

³The issue of integrated vs. separated classes is dealt with at length in Michael R. Rogers' book, *Teaching Approaches in Music Theory: An Overview of Pedagogical Philosophies* (Carbondale: Southern Illinois University Press, 1984).

⁴This design attempts to address criticisms of curricula that begin study of early music and/or species counterpoint in the freshman year. One criticism is that freshmen need basics of tonal theory in order to function well in ensembles and applied instruction.

sance music unit in the theory sequence is taught at the same time as the analogous unit in the students' music history sequence, "Music History to 1750." Students thus study the modal repertoire simultaneously from analytical, aural, compositional, and historical standpoints. This "immersion" approach encourages students to gain maximum familiarity with what to many of them is an unfamiliar repertoire. As we have a fifth-semester theory and history course that covers music since 1900, we find that we are still able to include all or most of the materials that are normally covered in the core theory curriculum.

These early music examples can also be used as supplemental training materials in a traditional tonal-based curriculum. It is not necessary for the instructor to be an expert in Medieval and Renaissance music; most of the pitch and rhythmic concepts are familiar from work with tonal materials. For example, beginning harmonic dictation with organum allows the instructor to focus on the perfect intervals used in early organum, then later to move to the greater variety of intervals heard in subsequent organum. Throughout this article we provide background information and suggestions on how to use the examples. These excerpts have generally been selected from accessible and standard sources of early music. We have avoided highly chromatic works such as the madrigals of Gesualdo and Marenzio, because the harmonic idiom therein is too far removed from functional tonality for success within our limited amount of time. In cases where the overall mode is unclear, we suggest using the clearest possible frame of reference for the pitch center.⁵

A chronological approach to modal ear training and sight singing beginning with Gregorian chant and continuing to the early seventeenth century offers many inherent pedagogical advantages and allows the instructor to present materials in a pedagogically and musically effective sequence. This sequence will be illustrated in the musical examples below. Modal music is also adaptable to many different types of solfege systems. It can be sung in the historically correct fashion, using hexachords and mutation, and even making use of the Guidonian hand. It can also be taught as traditional *do-*

⁵For instance, see our discussion of the mode in Example 9.

based movable-*do*, with chromatic inflections for the various scale degrees. In the latter system, for example, Dorian (first) mode becomes *do re me fa sol la te do*, while Lydian (fifth) mode becomes *do re mi fi sol la ti do*. This approach can be used in a non-historical way to emphasize the difference between the “minorish” and “majorish” modes and to exploit the students’ familiarity with tonal solfege. Example 1 demonstrates solmization for all of the modes using the movable-*do* (minor *do*) approach.⁶ Finally, a fixed-*do* approach can be used, with each mode beginning on a different syllable. In this system, nontransposed Dorian becomes *re mi fa sol la ti do re*, while Lydian becomes *fa sol la ti do re mi fa*.⁷

If desired, other skills can be taught as well. For example, *musica ficta* as performed or not performed in recordings can lead to musical debates and excellent “error detection” practice. Following are descriptions of some of the examples we use for ear training exercises. They are organized in chronological fashion. Note that in multi-voice textures we often make individual voices easier for students to hear by separating them an octave more than in the original score.

A) Chant dictation and singing.⁸ We start work with Gregorian chant, allowing some time for a basic introduction to the modal system. Here the emphasis is on melodic intervals, with no rhythmic

⁶Medieval theory was based on the eight-mode system, shown here as modes I-VIII. The sixteenth-century theorist Heinrich Glarean (*Dodecachordon*, 1547) recognized the growing need for a twelve-mode system, adding the authentic and plagal versions of Aeolian and Ionian (Modes IX-XII).

⁷For further discussion on the merits of various solfege systems applied to this repertoire, see Rosemary Killam, “Solmization with the Guidonian Hand: A Historical Introduction to Modal Counterpoint,” *Journal of Music Theory Pedagogy* 2 (1988): 251-74; and Ralph Lorenz, “Canon as a Pedagogical Tool: Applications from Sixteenth-Century Wittenberg,” *Indiana Theory Review* 16 (1995): 87-91.

⁸Cue notes given in the examples are reproduced at 100% size, while notes students are to dictate are reproduced at 75% size in the answer keys shown here. We would like to thank William Post, Stephen Stanziano, and James Leatherbarrow for their assistance in notating these examples.

Example 1

Movable-Do Solmization for the Modes

black noteheads represent the finals of the modes

<p>Mode I (Dorian)</p> <p>do re me fa sol la te do</p>	<p>Mode II (Hypodorian)</p> <p>sol la te do re me fa sol</p>
<p>Mode III (Phrygian)</p> <p>do ra me fa sol le te do</p>	<p>Mode IV (Hypophrygian)</p> <p>sol le te do ra me fa sol</p>
<p>Mode V (Lydian)</p> <p>do re mi fi sol la ti do</p>	<p>Mode VI (Hypolydian)</p> <p>sol la ti do re mi fi sol</p>
<p>Mode VII (Mixolydian)</p> <p>do re mi fa sol la te do</p>	<p>Mode VIII (Hypomixolydian)</p> <p>sol la te do re mi fa sol</p>
<p>Mode IX (Aeolian)</p> <p>do re me fa sol le te do</p>	<p>Mode X (Hypoaolian)</p> <p>sol le te do re me fa sol</p>
<p>Mode XI (Ionian)</p> <p>do re mi fa sol la ti do</p>	<p>Mode XII (Hypoionian)</p> <p>sol la ti do re mi fa sol</p>

complexity. The primary type of motion is stepwise, with occasional skips. Such skips are often used motivically within a melody and tend to be characteristic of the given mode. The emphasis on stepwise motion makes the initial singing easier for most students. Melodic formulas associated with the different modes are easily demonstrated and learned. For example, the half step above and whole step below the final⁹ in the third and fourth mode authentic/plagal¹⁰ pair (Phrygian) contrasts audibly with the whole step above and below the final used as a cadence formula in the first and second mode pair (Dorian). The characteristic sound of each modal pair can be taught through these distinctive cadential formulas. Example 2 is in Mode II, or Hypodorian, because of the final and the range (or ambitus) used in the melody.¹¹ This example places much emphasis on the reciting tone,¹² F, and the third section features a characteristic leap down from D to A, into the plagal register a fourth below the final.

B) Free organum (ninth century).¹³ The note-against-note style of free organum provides a logical step into multi-voice texture. We usually provide one voice in dictation, so students now have harmonic intervals as clues in their listening. This step begins our study of consonance and dissonance in harmonic intervals, which can easily be tied to the intervallic classification system of the Medieval theorist John of Garland (and other theorists).¹⁴ The pedagogical

⁹The final is the Medieval equivalent of tonic; it was generally the ending note of a chant composition.

¹⁰Authentic modes feature the range (or ambitus) of an octave above the final plus the step below the final. Plagal modes feature the octave range that starts a fourth below the final and extends a fifth above.

¹¹This Kyrie is from Mass IX, *Liber usualis*.

¹²The reciting tone, also known as the dominant or *repercussio*, is a mode-specific pitch that was used on a repeated basis during declamatory portions of text, especially in the formulas used for the singing of psalms.

¹³Archibald T. Davison and Willi Apel classify this example as a "freer type" of parallel organum, in *Historical Anthology of Music*, vol. 1, *Oriental, Medieval and Renaissance Music*, rev. ed. (Cambridge: Harvard University Press, 1977), 217. The excerpt is taken from p. 22.

¹⁴More information on Medieval systems of interval classification can be found in Richard L. Crocker, "Discant, Counterpoint, and Harmony," *Journal of the American Musicological Society* 15 (1962): 1-21.

Example 2

Kyrie, Mass IX, Liber usualis



emphasis is on both the linear and the horizontal aspects of the music. Our frame of reference for Example 3 is E Phrygian. This example affords the opportunity to contrast oblique motion (gradually moving from a unison out to a perfect fourth, then contracting back to a unison) with parallel motion (parallel fourths near the end of the excerpt).

C) St. Martial organum (twelfth century).¹⁵ Organum from St. Martial is melismatic, introducing greater rhythmic independence between voices. Students are to add black note heads in the upper (organal) part against the given tenor. This style still features predominantly stepwise motion and simple rhythmic movement. We use “cue” notes in such examples to reinforce musical patterns and logical divisions in the music. Here the cue notes outline the sequential pattern used. Students should be encouraged to use recognition of the sequential pattern to help with their dictation. Other examples might emphasize different prominent melodic or harmonic features found in the music. Example 4 should be heard as E Phrygian.

¹⁵*Laude jocunda*, adapted from Richard H. Hoppin, ed., *Anthology of Medieval Music* (New York: W. W. Norton, 1978), 42.

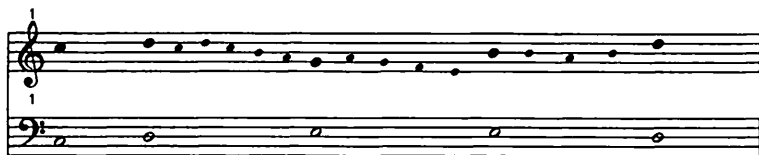
Example 3

Musica enchiriadis, free organum



Example 4

St. Martial melismatic organum



D) Notre Dame clausula (twelfth century).¹⁶ The Notre Dame style adds rhythm patterns from the six rhythmic modes, with the upper voice (the duplum) displaying more activity (although the tenor also moves faster than before). These rhythmic modes, illustrated in Example 5, provide a well-organized and relatively simple entry into the processes involved in the notation of rhythmic patterns. Note that the modal rhythms can be taught as groupings or patterns rather than as individual rhythmic values.

Example 5

Mode I (trochaic)	↑			↓	
Mode II (iambic)	↓		↑		
Mode III (dactylic)	↑			↓	↑
Mode IV (anapestic)	↓		↑		↑
Mode V (spondaic)	↑				↑
Mode VI (tribrachiic)	↓	↓	↓		

¹⁶*Alleluia: Nativitas*, adapted from *ibid.*, 50.

In the exercise shown in Example 6, students are to complete the upper part against the given tenor. We work on hearing the vertical perfect intervals at the beginnings and endings of phrases, emphasized in this particular section that is known as a clausula.¹⁷ In this transcription, the “downbeats” of most measures also feature perfect intervals. Use of clausulae avoids the extremely long-held notes in the tenor found in most organum from Notre Dame. We interpret this example as being F Lydian, ending on an intermediate cadence on C.

Example 6

Notre Dame organum, clausula section

¹⁷A clausula is a section of Notre Dame organum in which the tenor moves more quickly than in the non-clausula sections, and incorporates patterns from the system of rhythmic modes much like the upper voices.

E) Machaut, *Je ne cuit pas* (fourteenth century).¹⁸ This Machaut example introduces syncopation and the use of *musica ficta*. In addition, the melodic inflections of the lines create considerable chromaticism. Students are again asked to notate the upper voice against the given tenor. As mentioned earlier, separating the parts by playing them one octave farther apart than notated simplifies the texture in this example by avoiding voice crossing. Our solfege is based on A Phrygian.¹⁹ Students can better deal with the chromaticism in this example if they understand the logic behind its use. For example, the F-sharp in m. 4 is used to create the standard cadential pattern of a major sixth expanding out to an octave, while the F-natural in m. 5 is necessary to form a perfect interval against the tenor's B-flat.

F) Dufay, Benedictus from *Missa Se la face ay pale* (fifteenth century).²⁰ Our eartraining drill now includes the identification of non-harmonic tones, which in this example include passing tones, suspensions, and anticipations. We also work on hearing and labeling cadential motion such as the under-third (or escape tone) figure at the cadence. Students transcribe the upper voice, label the vertical intervals, and circle and label dissonances.²¹ Thirds and sixths (the imperfect consonances) are now emphasized as harmonic intervals, in contrast to the earlier examples. The mode in this excerpt is F Lydian, ending with an intermediate cadence on C.

G) Binchois, *De plus en plus* (fifteenth century).²² This Binchois example continues our study of fifteenth-century music. It empha-

¹⁸Adapted from *Guillaume de Machaut: Musikalische Werke*, ed. Friedrich Ludwig, vol. 1, *Balladen, Rondeaux und Virelais* (Leipzig: Breitkopf & Härtel, 1954), 12.

¹⁹During this time period the normal modal system could also be transposed up by the interval of a perfect fourth. Thus, D Dorian becomes G Dorian, E Phrygian becomes A Phrygian, and so on. Each of these transpositions adds one flat to the mode.

²⁰Adapted from Richard L. Crocker, *A History of Musical Style* (New York: McGraw-Hill Book Company, 1966; reprint, New York: Dover Publications, 1986), 150.

²¹Compound intervals are reduced to within an octave in our labels.

²²Adapted from Davison and Apel, 74.

Example 7

Machaut: Je ne cuit pas

Musical notation for Example 7, Machaut: Je ne cuit pas, measures 1-5. The piece is in 3/4 time. The right hand (treble clef) plays a melody of eighth and quarter notes. The left hand (bass clef) plays a bass line with dotted rhythms and rests.

Musical notation for Example 7, Machaut: Je ne cuit pas, measures 6-10. The right hand continues the melodic line with some chromaticism. The left hand provides harmonic support with sustained notes and rhythmic patterns.

Example 8

Dufay: Missa Se la face ay pale- Benedictus

Musical notation for Example 8, Dufay: Missa Se la face ay pale- Benedictus, measures 1-3. The piece is in 2/4 time. Fingerings are indicated below the notes: 8, 3, 4, 5, (SUS) 6, 5, 3.

Musical notation for Example 8, Dufay: Missa Se la face ay pale- Benedictus, measures 4-7. Fingerings are indicated below the notes: 3, 6, 5, 4, 6, (SUS) 7, 6, 5, 8.

sizes escape tones as well as a passing tone, and it also uses thirds and sixths as harmonic intervals. Students complete the upper voice against the given voice. The final cadence again features under-third motion. Although the entire composition ends with a final on D, we recommend that this excerpt be sung and heard in C Ionian because of the temporary emphasis on C. The ending cadence on G, often called a tonal cadence, can be compared to the half cadence found in tonal music. Instructional strategies that could be used here include pointing out the arpeggiation of the C major triad in the second measure of the upper voice, and the use of sequence in the third measure.

H) Josquin, Kyrie from *Missa Pange Lingua* (sixteenth century).²³ This Josquin example incorporates dictation within a points-of-imitation style, involving a new type of skill in making cognitive and aural comparisons between the voices. Students are to complete the bassus. Differences between real and tonal imitation are introduced at this point.²⁴ Dictation using points of imitation also reinforces the written concepts taught in sixteenth-century counterpoint. Once students understand how the technique of imitation works, they can anticipate what the following voice will do. The excerpt cadences on C, within a framework of E Phrygian.

In addition to various types of dictation, singing, and error-detection exercises, we also utilize play-and-sing examples in which students are to sing one voice from a multi-voice texture and realize the remaining voices on the keyboard.²⁵ Play-and-sing exercises encourage students to practice the aural and physical coordination of multiple parts. We begin with two fairly simple lines and gradually increase the complexity, eventually adding a third

²³Adapted from Mary H. Wennerstrom, *Anthology of Musical Structure & Style* (Englewood Cliffs, NJ: Prentice-Hall, 1983), 28.

²⁴Real imitation preserves exact intervallic structure. This Josquin example features tonal imitation, since the opening interval of a minor second (E to F) is answered as a major second (A to B). Students should be encouraged to hear this difference.

²⁵For a modern use of play-and-sing exercises, see Sol Berkowitz, Gabriel Fontrier, and Leo Kraft, *A New Approach to Sight Singing*, 4th ed. (New York: W. W. Norton, 1997), 141- 233.

Example 9

De plus en plus

Binchois

1
8 6 3 2 5 ET 3 5 8 8 3 2 8 8 3 2 8 ET

Example 10

Kyrie, from Missa Pange Lingua

Josquin

1
5 5 3 6 8 3 2 8 3 3 3 3 8 7 5 7 6 8 PT PT (SUS)

Example 11

Deo confitemini/Domino

Musical notation for measures 1-4. The piece is in 4/4 time. The melody (treble clef) consists of quarter notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The bass line (bass clef) consists of quarter notes: C3, F2, G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4.

Musical notation for measures 5-8. The melody (treble clef) consists of quarter notes: C4, D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The bass line (bass clef) consists of quarter notes: C3, F2, G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4.

Musical notation for measures 9-12. The melody (treble clef) consists of quarter notes: C4, D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The bass line (bass clef) consists of quarter notes: C3, F2, G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4.

Musical notation for measures 13-16. The melody (treble clef) consists of quarter notes: C4, D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The bass line (bass clef) consists of quarter notes: C3, F2, G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4.

Musical notation for measures 17-20. The melody (treble clef) consists of quarter notes: C4, D4, E4, F4, G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The bass line (bass clef) consists of quarter notes: C3, F2, G2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4.

part. With practice, our students can easily handle a three-part texture (such as Example 12) that is not overly contrapuntal. Rhythmic and intervallic complexities between the parts are presented in a systematic manner. We introduce these examples in class by playing one of the parts at the keyboard and having the students sing the other parts. We also have the students practice fingering the keyboard part while singing one of the voices. Example 11 (*Deo confitemini/Domino*²⁶) is a thirteenth-century motet in the style of clausula; the rhythm is derived from the rhythmic modes and incorporates basic isorhythm in the lower voice. For this example we ask students to sing the top voice with movable-*do* solfege in D Dorian while playing the bottom voice on the piano.

Example 12 (Busnoys, *Fortuna desperata*)²⁷ expands score performance to three voices. Students are asked to sing a voice of their choice and to play the other two voices on the piano. Sonorities now feature thirds, and cadences include octave-leap "tonal" types. Rhythmic complexity is kept to a minimum here so as to allow concentration on the harmonic aspects of the three-voice texture. We treat F as "*do*." Note that the tenor voice is to sound an octave lower than written.

Incorporating Medieval and Renaissance musical examples in a chronological order introduces pitch and rhythmic studies in a logical and pedagogically effective manner. The aural component of these studies reinforces the chronological written overview that students normally receive in music history but only occasionally encounter in music theory. This approach combines visual, aural, cognitive, and kinesthetic components of the learning process. Students who have completed this unit generally express a new understanding and genuine appreciation of early musical styles.

²⁶Anonymous, Motet 47 from *Las Huelgas Codex*, adapted from Baur, 54-55.

²⁷Adapted from Stephen Self, ed., *The Si Placet Repertoire of 1480-1530*, Recent Researches in the Music of the Renaissance, ed. James Haar, vol. 106 (Madison, WI: A-R Editions, 1996), 29-30.

Example 12

Busnoys: Fortuna desperata

The first system of musical notation consists of three staves. The top staff is labeled 'Superius' and uses a soprano clef. The middle staff is labeled 'Tenor' and uses an alto clef. The bottom staff is labeled 'Bassus' and uses a bass clef. The music is in a key with two flats (B-flat and E-flat) and a common time signature. The Superius part begins with a half note G4, followed by quarter notes A4, B4, and C5. The Tenor part begins with a half note G3, followed by quarter notes A3, B3, and C4. The Bassus part begins with a half note G2, followed by quarter notes A2, B2, and C3.

The second system of musical notation consists of three staves. The top staff is labeled 'S' and uses a soprano clef. The middle staff is labeled 'T' and uses an alto clef. The bottom staff is labeled 'B' and uses a bass clef. The music continues from the first system. The Soprano part has a half note G4, followed by quarter notes A4, B4, and C5. The Tenor part has a half note G3, followed by quarter notes A3, B3, and C4. The Bass part has a half note G2, followed by quarter notes A2, B2, and C3.

The third system of musical notation consists of three staves. The top staff is labeled 'S' and uses a soprano clef. The middle staff is labeled 'T' and uses an alto clef. The bottom staff is labeled 'B' and uses a bass clef. The music continues from the second system. The Soprano part has a half note G4, followed by quarter notes A4, B4, and C5. The Tenor part has a half note G3, followed by quarter notes A3, B3, and C4. The Bass part has a half note G2, followed by quarter notes A2, B2, and C3.