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Harmonic Improvisation Readiness: What it is and How it is Taught

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As we all know, some members of the Music Educators National Conference have developed a series of music content standards that they recommend be adapted in schools across the country. Whether you do or do not agree with the standards and the philosophy that led to their incorporation, the fact is that the nine standards are currently in vogue. I do not believe that they should be ignored, but rather, that an attempt should be made to make the best possible use of them. There is no doubt in my mind that before the standards were articulated, curriculums that take individual musical differences into account should have been established upon which the standards are based, and concurrently, teachers should have received guidance in how to further develop their own musicianship and to acquire the necessary concepts that relate to related teaching/learning processes. Then, in a natural manner, methods of measurement and evaluation would sequentially follow, without our being forced to resort to the apologetic notion of assessment.

To make my ideas clear, I have chosen to talk about a section of the third standard: Improvising melodies, variations, and accompaniments. Because of the overwhelming and complicated nature of the standard, it would seem impossible to deal with all three parts in a comprehensive manner. Thus, given time constraints, I will focus only on improvising a melody.

The Nature of Improvisation

Improvisation comes from, the Latin *improvisus*, which means not provided or not foreseen. It follows, then, that musical improvisation, in the strictest sense, has to do with the spontaneous creation of music, vocally and instrumentally. Neither improvisation nor creativity, however, can be taught. Just as a vocabulary of words, not thinking, can be taught, all a teacher can do is provide students with the necessary readiness to teach themselves how to improvise and create. That readiness consists of acquiring a vocabulary of tonal patterns, rhythm patterns, and harmonic patterns as they relate to temporal relationships in music. There is a difference between rhythm patterns, such as those used in chanting, and what are called time patterns. A rhythm pattern may include syncopation and eighth and sixteenth notes, all performed on the same pitch, whereas a time pattern includes only fundamental longer and shorter durations in association with various pitches that, together, typically function as roots of chords in harmonic progressions.

Improvisation and creativity are on a continuum, because all improvisation to some extent involves creativity, and all creativity to some extent involves improvisation. And, it should not be assumed that performance is the only mode of improvisation. That is, because of our different backgrounds and varying degrees of music aptitude, we necessarily improvise when we casually listen to music, when we listen seriously as in audiation, and, of course, when we read music notation. I hope you can begin to grasp why I feel that the standards can be, at best, only provisionally acknowledged.

Improvisation, which is our primary concern here, may take place in three ways. First, one may perform a variation of a melody without giving attention to the underlying existent or implied harmony. Often, particularly with musically immature instrumentalists performing in a jazz style, their melodic improvisation is guided by chord symbols, although they are not able to audiate the harmony that the symbols represent. For example,

when playing in C and a G7 is seen, they are usually instructed to perform fragments of or an entire Mixolydian scale, but they may not be aware aurally of the relation of that chord to the tonic of the keyality or to the resting tone of the tonality of the music. They tend to repeat what others play, if not what they, themselves, have played only moments ago. They quote themselves over and over again. Second, musicians may perform a melody over a series of harmonic patterns, otherwise called harmonic pattern progressions. In the vernacular, they are referred to simply as “the changes.” The harmonic patterns, themselves, provide the basis for the improvisation, and the improvisation may or may not be a variation of an established melody. Persons who “sing in harmony” by improvising a second part are, of course, also are consciously or unconsciously aware of the underlying harmonic patterns. Third, musicians may improvise chords to an old or new melody, the emphasis being on the vertical structure of individual chords rather than on the horizontal relations among chords. The latter is largely what was done during the Baroque, which is in contrast to current practice. Specifically, when improvising chords from a figured base, it was the chords that were improvised, not a melody, whereas in jazz, for example, a melody is improvised with unique tonal and rhythm interaction, based upon a series of established harmonic patterns.

The first method requires memorization and imitation. Knowledge of music theory and knowing how to read notation are helpful, if not necessary. The second and third methods require audiation, the ability to hear and to comprehend music for which the sound is not physically present or may never have been physically present. Audiation is to music what thought is to language. It is for those reasons that I believe improvisation, if it is to be worthwhile, is best learned by engaging in the second and third methods. It must be understood, however, that the vertical structure of chords (or triads), that is, of the individual pitches that make up chords, is irrelevant to the syntax of harmonic patterns. When chords are taught as independent functions, the emphasis is on theory and the rules of part-writing. When chords are taught in linear fashion, as collectively constituting one or more harmonic patterns, the emphasis is on musical syntax. Whether a chord is in root position or inversion is unrelated to the syntax of the harmonic pattern to which it belongs or to the chord itself.

Tonal, Rhythm, and Harmonic Patterns

Fundamental to improvisation is the audiation of tonal patterns and rhythm patterns. Just as words are the smallest units of meaning in language, tonal patterns and rhythm patterns are the smallest units of meaning in music. Words are combined into sentences that have more complex meaning than the words themselves. Similarly, individual tonal patterns are combined into a series and individual rhythm patterns are combined into a series, and then the series of tonal patterns and the series of rhythm patterns are combined into melodic patterns. The result is comprehensive musical meaning. Music comes into being.

Students first acquire a vocabulary of tonal patterns and rhythm patterns and then are introduced at an early age to improvisation using tonal patterns and rhythm patterns. While audiating and vocally performing tonal patterns and rhythm patterns, students learn to use movable “do” syllables with a “la” based minor, “re” based Dorian, and so on, and rhythm syllables based on beat functions, such as macrobeats and microbeats, and their divisions and elongations. They also learn to associate names, such as major and minor and tonic and dominant, with the patterns. Because audiation is the mainstay of this type of education, it becomes fundamental to all musical understanding and, thus, knowledge pertaining to music theory and notation is not necessary.

Soon after students are able to imitate patterns, they are encouraged to respond to the teacher's pattern or patterns in major or minor tonality or in duple or triple meter by performing a different pattern or patterns. For example, the teacher may sing the tonic pattern "mi so do" and ask a student to respond by vocally improvising another major tonic pattern (which might be, depending on the student's choice, "so do mi") or a major dominant pattern (which might be "so fa re ti.") Or, the teacher may chant the duple macro/microbeat pattern "du de du" and ask a student to respond by improvising in chant another duple macro/microbeat pattern (which might be "du du de.") The students are always made aware of the tonality or meter (context) in which they are improvising patterns (content), and it is hoped that by the teacher using only arpeggiated tonal patterns based on harmonic functions, they are gradually developing a preliminary understanding of the sound and names of harmonic patterns. As a result of learning to improvise using tonal patterns without rhythm and to improvise rhythm patterns without variable pitches, they soon are able to combine tonal patterns and rhythm patterns in their improvisations in typical musical activities.

Until recently, students have not been taught to improvise tonal patterns superimposed on actual harmonic patterns in learning sequence activities, because there was no research to indicate which harmonic patterns should be learned first. That is, although there has been ample research (1) to determine the relative difficulty levels of tonal patterns in the various tonalities of major, harmonic minor, Dorian, Mixolydian, and so on, and of rhythm patterns in usual and unusual meters, the study of the relative difficulty levels of harmonic patterns had not been undertaken. For example, depending on background and experience, it might make sense to one teacher to teach improvisation using harmonic patterns in major before harmonic minor tonality and the specific harmonic pattern I V7 I, but another teacher may think that improvisation is best taught by using the harmonic pattern I IV I before I V7 I in harmonic minor tonality. Such beliefs are typically a matter of prejudice or opinion, not fact. To assist teachers in teaching improvisation with objectivity, research was undertaken to establish a taxonomy of the more widely used harmonic patterns and then to identify the relative audiation difficulty levels among them. That research culminated in the development and validation of the *Harmonic Improvisation Readiness Record* and the *Rhythm Improvisation Readiness Record*. (2)

Description of the Tests

The *Harmonic Improvisation Readiness Record* is a 17 minute recorded group test of 43 harmonic patterns performed in various tonalities, all in the same uncomplicated rhythm. The directions for taking the test along with practice exercises are on the recording. Students are asked to listen to pairs of harmonic patterns and to mark on an answer sheet whether the two harmonic patterns in each pair sound the same or do not sound the same. The *Rhythm Improvisation Readiness Record* is a 20 minute recorded group test of 40 pairs of rhythm patterns, each pair performed with the same simple melodic line. The directions for taking the test along with practice exercises are on the recording. Students are asked to listen to pairs of patterns and to mark on an answer sheet whether the two patterns in each pair sound the same or do not sound the same. If the two patterns do not sound the same, it is because one of the durations on a given pitch in the second pattern is longer or shorter than it is in the first pattern. The patterns for both tests were programmed on an Apple Macintosh computer and performed by a professional musician on a Yamaha DX-7 synthesizer.

Teaching Harmonic Improvisation

Results on the *Harmonic Improvisation Readiness Record* and the *Rhythm Improvisation Readiness Record* must be used in combination to evaluate a student's

readiness for engaging in improvisation activities. Each serves a unique role, but the results of the *Rhythm Improvisation Readiness Record* would have only limited meaning without the information that the *Harmonic Improvisation Readiness Record* provides.

As with tonal patterns and rhythm patterns, it is important to know the relative difficulty levels of harmonic patterns for at least two very important reasons. First, when it is known that one harmonic pattern is easier to audiate than another, improvisation can be structured in terms of sequential learning, in that learning the simpler forms the foundation for learning the complex. Second, when harmonic patterns are classified as being easy, moderately difficult, or difficult to audiate, students' individual musical differences can be taken into account. That is, instruction can be adapted to the individual musical needs of students without making students feel vain or inferior. Students who are known to have higher levels of improvisational readiness may be appropriately moved ahead to improvising melodies over more difficult harmonic patterns as soon as they have dealt successfully with easy harmonic patterns while students who are known to have lower levels of improvisational readiness are still learning to improvise melodies over easy harmonic patterns. Neither boredom on the part of more-promising students nor frustration on the part of less-promising students occurs, and all the while substantial learning with favorable attitudes of success is taking place without slighting or favoring any student. Embarrassment and apology on the one hand and boasting on the other become unnecessary and are without incident.

Responses to time patterns and harmonic patterns are equally important in determining a student's readiness to learn to improvise. Specifically, to hear chord changes in a harmonic pattern is one thing but to know when those changes take place within a harmonic pattern in terms of macrobeats and/or microbeats requires a different skill. There are persons who can differentiate among chord changes in a harmonic pattern but make the changes at the wrong time when they are dealing with the harmonic patterns in the improvisation of actual music. They react rather than act. As a result, teachers may think that a student is experiencing difficulty in audiating chord changes when in reality the difficulty is one of temporal understanding. Thus, it is important to know whether a student has harmonic readiness, temporal readiness, both, or neither when teaching improvisation.

Results on HIRR or RIRR should never be used to deprive any student from participating in music activities. Whether they receive high, average, or low scores on one or both tests, students should be offered types of instruction and opportunities in music that best suit their individual musical needs.

Instruction for Students with Typical Readiness

To begin their improvisation experience, students should learn to audiate and perform hundreds of simple tunes in various tonalities and meters tunes, that is, without using notation. Next, students should develop a vocabulary of rhythm patterns in all meters, emphasizing duple and triple. The rhythm patterns should not be combined with tonal patterns, although they are performed with inflections, as in speech. A vocabulary of rhythm patterns is developed by the teacher establishing a meter, then chanting rhythm patterns, and then asking students to repeat the rhythm patterns in chant. Macro/microbeat patterns and division (of microbeats) patterns should be introduced before elongation (of microbeats and macrobeats), rest, and upbeat patterns.

Given a vocabulary of rhythm patterns, perhaps six or more in duple meter and a similar number in triple meter, students may now respond to a pattern the teacher chants by chanting a different rhythm pattern in the same meter. Neutral syllables may be used for this purpose, but rhythm syllables, particularly those used in a music learning theory

curriculum, are recommended. Call and response is an excellent technique with rhythm patterns as well as with tonal patterns.

Once students become proficient improvising with rhythm patterns, the same type of procedure may be used for establishing a tonality, developing a vocabulary of tonal patterns, and using them in improvisation. All pitches in the tonal patterns should be of equal length, that is, tonal patterns should be performed without rhythm just as rhythm patterns are performed without variable pitch. Only major tonic patterns (all arrangements of "do mi so") and dominant-seventh patterns (all arrangements of "so ti re fa") and harmonic minor tonic patterns (all arrangements of "la do mi") and dominant-seventh-patterns (all arrangements "mi si ti re") are used initially. Later, major subdominant patterns (all arrangements of "fa la do") and harmonic minor subdominant patterns (all arrangements of "re fa la") may be combined with other tonal patterns. Neutral syllables may be used for this purpose, but tonal syllables, particularly those used in a music learning theory curriculum which are movable "do" syllables with a "do" based major and "la" based minor, are recommended.

It is important that only arpeggiated tonal patterns be used until students have developed a sense of tonality and harmonic structure. The singing of arpeggiated patterns provides the foundation for audiating tonic, dominant-seventh, and subdominant harmony in major and harmonic minor tonalities. Only later should nonharmonic tones, such as passing tones, be included in the tonal patterns the teacher and students sing. The adding of nonharmonic tones facilitates the use of melodic patterns, the combining of tonal patterns and rhythm patterns in improvisation. As a variation, the teacher may ask students to remain silent after hearing a pattern the teacher has performed and to audiate, not perform, a response.

When students are ready, and using the same techniques described earlier, the class may be divided into three groups to sing and then, if appropriate, to perform on their instruments tonic, dominant-seventh, and subdominant chords in three parts. For the I IV V7 I harmonic progression in major tonality, students performing the top part sing and play "so la so so;" the middle part, "mi fa fa mi;" and the bottom part, "do do ti do" in a comfortable keyality. Beginning with I V7 I and I IV I harmonic patterns, the class listens to, sings, and performs instrumentally the chords over a predetermined number of sustained macrobeats as individual students vocally and instrumentally improvise.

The same procedure should be followed using harmonic progressions that include I IV V7 I in harmonic minor tonality before any additional chords are taught in major tonality. Students performing the top part sing "mi fa mi mi;" the middle part, "do re re do;" and the bottom part, "la la si la."

Remember, when teaching to students' individual musical differences as a group, all students, of course, may not be engaged in the same activity. Depending on their levels of accomplishment, some students, for example, may be chanting rhythm patterns and some may be singing chord roots as others are performing instrumentally. Others may be involved in moving their bodies as they use and respond to the same harmonic patterns. And, perhaps most important, students with different levels of harmonic improvisation readiness may improvise melodies based on easy harmonic patterns while others improvise melodies based on moderately difficult and difficult harmonic patterns, all singing and playing in the same tonality and meter. What is most important is that all students are taught at the same time and are actively engaged in some type of harmonic improvisation readiness, if not harmonic improvisation itself. Students learn best from other more advanced students without the more advanced students making any sacrifice at all, and there is the possibility that the superior students may unconsciously learn what not to do.

Instruction for Students with Superior Readiness

Regardless of their superior readiness for learning harmonic improvisation, students at this level of development can enhance their skills by continuing to participate in activities suggested for students with lower levels of readiness. Among these activities are those that emphasize listening, movement, and singing.

In addition, students should improvise instrumentally simple melodic patterns and extended melodies over harmonic progressions that include harmonic patterns that are easy to audiate. The use of nonharmonic tones in improvisation should be encouraged. It is a good idea to continually remind students to audiate what they are going to play before they play it, and to err on the side of playing fewer rather than too many notes. Occasionally, as a way of checking and emphasizing the importance of audiation, students should be asked to sing or chant what they intend to play just before they play it.

As illustrated with chord symbols in the chart below, easy harmonic patterns include the subdominant and dominant-seventh relationships to the tonic in major and harmonic minor tonalities, and the subdominant relationship to the tonic in Dorian tonality. Also, whereas the submediant relationship to the tonic may be in both major and harmonic minor tonalities, going back and forth in so-called relative major and minor should be taught only when major tonality is initially established. No other harmonic patterns or tonalities should be taught at this stage of student development, particularly those that include a supertonic chord. Next, those easy harmonic patterns should be combined with one another in all possible ways to create harmonic progressions. For example, I IV V7 I, I V7 IV I, I IV I V7 I, V7 I IV I, and so on.

With that accomplished, students should improvise using the harmonic patterns that are moderately difficult to audiate, following the same procedures already described. At this time, harmonic patterns that include submediant-seventh, leading-tone seventh, and subtonic-seventh relationships to the tonic in major tonality should be introduced. Also, harmonic patterns in major tonality with all three diminished relationships to the tonic are appropriate, as are the harmonic patterns in Phrygian, Lydian, Mixolydian, Aeolian, and Locrian tonalities that are easier to audiate than difficult harmonic patterns in major and harmonic minor tonalities. Going back and forth in so-called parallel major and minor also may be taught when harmonic minor tonality is initially established. The use of harmonic patterns including supertonic relationships to the tonic must still be delayed. As soon as possible, all combinations of harmonic patterns that are easy and moderately difficult to audiate should be combined to create harmonic progressions.

Finally, students may begin to improvise using harmonic patterns that are difficult to audiate and then combine them with harmonic patterns that are easy and moderately difficult to audiate. After students become facile with these harmonic progressions (series of harmonic patterns), they can be exposed to other harmonic patterns in major tonality that include the supertonic-seventh and mediant-seventh relationships to the tonic, and the remaining patterns in tonalities other than major and harmonic minor are appropriate at this time. Now, going back and forth in so-called relative major and minor can be taught after establishing harmonic minor tonality, and going back and forth in so-called parallel major and minor can be taught after establishing major tonality.

It is well to remember when teaching instrumental improvisation that the practicing of scales contributes little to the art of improvisation, even for students who are excellent technicians. Performing scales develops instrumental technique, and that is important for transferring to an instrument what is being audiated. The development of audiation, however, must always precede the acquisition of instrumental technique if improvisation,

not imitation, repetition, and memorization, is to flourish. Perhaps least forgiving is to tell students that they need to learn a “blues scale” to engage in jazz improvisation. In actuality, there is no blues scale, there is only a blues style, and that is best developed through listening and audiation, not by practicing a nonexistent scale that is to become a boring perpetual melody intended to serve as an excuse for not being able to audiate and improvise.

Harmonic Pattern Difficulty Levels

Easy

Major:	C G7 C / C F C / C a C / C f C /
Harmonic Minor	c G7 c / c f c / c A b c /
Dorian	c F c /

Moderately Difficult

Major:	C e C / C B7 C / C A7 C / C Bb7 C / C E C / C A b C / C A C / C Cdim C / C C#dim C / C Ddim C /
Harmonic Minor:	c C c /
Phrygian:	c D b c /
Lydian:	C D C / C G C /
Mixolydian:	C B b C /
Aeolian:	c g c / c B b c /
Locrian:	Cdim b b Cdim / Cdim e b Cdim /

Difficult

Major:	C d C / C D7 C / C E7 C / C D7 C / C Bb7 C / C c C /
Harmonic Minor:	c d c / c E b c /
Dorian:	c B b c /
Phrygian:	c b b c /
Mixolydian:	C g C /

A Few Final Important Words

It has been discovered that good intonation is a result of primarily performing every pitch according to its vertical relation to the resting tone of the tonality and to the tonic of the keyality being audiated, and only secondarily, linearly, to the pitch that precedes or follows it. That is, audiation is *circular*, not linear. The same principle holds true for audiating the *sonance* of harmonic patterns. The only commanding harmonic patterns are those that include the resting tone or tonic. Thus, familiar harmonic progressions, such as I IV V7 I, and retrogressions, are not considered, because it is the audiation of each chord in relation to the tonic chord that provides the basis for audiating harmonic patterns. To be able to audiate the harmonic patterns I IV I and I V7 I is generic for audiating, for example, the harmonic progressions I IV V7 I and I V7 IV I. That is, it is not necessary to learn all harmonic progressions in which the same chords are found in different orders. By easily learning to audiate the relation of each chord to the tonic chord is all that is necessary for developing skill in audiating all of the chords regardless of their order in a harmonic progression. Using this concept, the teaching of improvisation becomes attractive because of its simplicity.

Please look at the answer sheets you received. I will demonstrate both the *Harmonic Improvisation Readiness Record* and the *Rhythm Improvisation Readiness Record* by playing the directions and practice exercises on the CD. Questions are welcome.

Footnotes

1. Edwin E. Gordon, "Toward the Development of a Taxonomy of Tonal and Rhythm Patterns: Evidence of Difficulty Level and Growth Rate," *Experimental Research in the Psychology of Music: Studies in the Psychology of Music*, 9 (1974), 39-232; Edwin Gordon, *Tonal and Rhythm Patterns: An Objective Analysis*. Albany: State University of New York Press, 1976; and Edwin E. Gordon, *A Factor Analytic Description of Tonal and Rhythm Patterns and Objective Evidence of Pattern Difficulty Level and Growth Rate*. Chicago: GIA, 1978.

2. Edwin E. Gordon, *Harmonic Improvisation Readiness Record and Rhythm Improvisation Readiness Record*. Chicago: GIA, 1998. In addition to the information provided in the test manual, data from four of my more recent studies may be found in the *GIML Monograph Series*, Number 3. 1) "Delving More Deeply into the Nature of Music Aptitudes and the Relevance of Music Aptitudes to Improvisation," 2) "An Investigation of the Background Necessary for Learning to Improvise: The Relation Among Questions Constituting the Rhythm Improvisation Readiness Record, the Harmonic Improvisation Readiness Record, and the Advanced Measures of Music Audiation," 3) "A Comparison of Music Aptitude Tests and Students' Improvisation Readiness Based on Longitudinal Case Studies," and 4) "An Addendum to the First Three Papers of the Series: The Relation Among Scores on the Harmonic Improvisation Readiness Record, the Rhythm Improvisation Readiness Record, and the Complete Musical Aptitude Profile."