Taking A Look at Music Learning Theory An Introduction

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TAKING A LOOK AT MUSIC LEARNING THEORY

AN INTRODUCTION

by Edwin E. Gordon

To many persons, learning music is a mystery. It is, in fact, a process that is both simple and complex. I have devoted many years to the study of how we learn when we learn music and have formulated a theory about the process. I hope that this Music Learning Theory will provide a basis on which music educators can plan and provide effective instruction.

To a certain extent, Music Learning Theory is concerned with *what* students learn. I believe that the basis for all music activity, and therefore music learning, should be audiation—thinking in sound. It is only when we can audiate that we can comprehend and enjoy the vast amount of music that is available in our world. More important, Music Learning Theory is concerned with *how* students learn. My research has indicated that there is a very clear series of steps through which music learning proceeds. If we are to be successful as teachers, we must follow that sequence in our teaching.

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Consider how you learned language—we follow a similar path when we learn music. Tracing the steps taken in developing language skills will guide you in understanding Music Learning Theory.

Moments after you were born, you began to listen to many persons around you, adults and children alike, speak your language. After absorbing what you heard for some months, you began to engage in speech babble. For about a year, as you were developing a listening vocabulary and becoming acculturated to your environment, you were exploring speech sounds. The more words you heard and the more of them you committed to your listening vocabulary, the better you were able to learn to communicate through language.

Sometime around the age of one you began to speak words and to develop your speaking vocabulary. Without the readiness that your listening vocabulary provided, the development of your speaking vocabulary would have been limited. The primary reason being that we learn to speak first those words that we have heard spoken by others, words that are already in our listening vocabularies. The development of the listening vocabulary, therefore, is a necessary readiness for the development of the speaking vocabulary. Not only is the number of words that we hear important, but perhaps even more important is the quality of the words. The greater variety of

words we hear, the better, because it gives us the opportunity to make more comparisons, and comparisons are important in learning, because we learn what something is mainly by learning what it is not.

After a few years, you attended school. Think of how fortunate you were to have had those early years to develop your listening and speaking vocabularies before you entered school. During those years, as you continued to speak, you learned to listen better. As you continued to listen, you learned to speak better. Probably to this day your listening vocabulary is larger than your speaking vocabulary. Nonetheless, both vocabularies provided the readiness for you to formally learn to read in school. You had five or so years of preparation, in terms of listening and speaking readiness, for learning to read. Consider the reading readiness liability you would have brought to school without the informal and formal guidance provided for you at home.

Now consider the musical liability that the typical child brings to kindergarten. We tend to pretend that children in kindergarten have the same readiness to participate in music as they do in language. They don't. Although children are bombarded with music from birth, hardly any of it is directed toward them personally in the way that speech from parents, siblings, family, and friends is directed to young children. Very seldom are young children invited to respond to the music they hear or encouraged to engage in "musical conversations." It is therefore very important that the instruction provided in general music classes be designed to compensate for the lack of opportunities to develop tonal and rhythm vocabularies and an understanding of musical syntax.

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Ideally, young children should be given the opportunity to develop a listening vocabulary in music moments after birth. But what is a listening vocabulary in music and how is it developed? In speech, you were exposed to words. In music, therefore, a child should be exposed to tonal patterns and rhythm patterns. Words are the smallest units of meaning in language—tonal patterns and rhythm patterns are the smallest units of meaning in music. A child, for example, does not initially learn to comprehend the alphabet or a poem, but learns first to comprehend words. Likewise, in music, a child should not be taught the letter names and time-value names of notes; he or she should learn to comprehend tonal patterns and rhythm patterns.

Therefore, tonal patterns and rhythm patterns constitute the beginning listening vocabulary in music. How do children acquire such vocabularies? Continue to think about language. A child does not hear only one word repeated—a child hears many words in many sentences; that is, a child develops a listening vocabulary within a syntax—the syntax of a word as it is used to convey thoughts. In music, a child ideally hears tonal patterns within a syntax, that is, in relationship to a tonality, such as major and minor. Also, a child ideally hears rhythm patterns within a syntax, or in other words, in relationship to a meter such as duple and triple. As a result, a child develops a vocabulary of tonal patterns in association with the development of a sense of tonality, and a vocabulary of rhythm patterns in association with the development of a sense of meter. So a child should be sung to and chanted to in a variety of tonalities and meters and should hear all forms and types of recorded and media (television and radio) music. Major and duple alone do not offer sufficient variety.

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Just as a young child begins to imitate speech patterns, he or she will begin to imitate tonal and rhythm patterns. Children should be consistently encouraged to do so, for chanting, singing, and rhythmic movement represent the

"speaking vocabulary" in music. And finally, those same tonal patterns and rhythm patterns are read and written when the child begins to engage in the performance and creative aspects of music.

Comprehending Music

All of this is the development of audiation, which is fundamental to all musicianship and, of course, to Music Learning Theory. In simple terms, audiation is to music what thinking is to language. It is the ability to hear and *to comprehend* music for which the sound is not physically present (as in recall), is no longer physically present (as in listening), or may never have been physically present (as in creativity and improvisation).

Notice that I have emphasized the word "comprehension." A child who is audiating is doing much more than imitating or hearing internally the tonal and rhythm patterns, just as a child who organizes a sentence and asks a question is doing much more than imitating and hearing internally the words. Audiation, like thinking, requires syntax.

If a child is taught only to imitate or memorize what someone else says, I doubt that the child's parents or teachers would be very happy. Yet, many teachers continue to foster such behavior in music education, and parents have learned to accept it as a worthy goal. Instruction based on Music Learning Theory takes a very different approach and improves both the vocal and instrumental music education of children and students of all ages, preschool through college, in both group and private instruction.

Music Learning Theory is a detailed explanation of how we learn music. It is not a theory of teaching; it is a music *learning* theory that is concerned primarily with what a student learns; in what sequence learning occurs; and why a concept is being learned. Music Learning Theory outlines a sequence of readinesses for learning music. It explains what students need to know as a readiness at a particular level of learning in order to proceed to a more advanced level. Students proceed from level to level. Each level, when achieved, incorporates all lower levels and becomes, in turn, a readiness for the next higher level, and the sequential process continues. Thus you can understand why Music Learning Theory, in its practical application, is referred to as "Music Learning Sequence."

Let me explain more about sequencing. Consider what a student needs to know as readiness in order to learn how to read music notation. By reading, I mean to bring audiation to notation, that is, to hear what is seen in notation before it is performed on an instrument. By reading, I do not mean to attempt to take meaning from notation, which is in reality to decode what is seen so that the correct fingers can be used to operate a music instrument. Yes, it is possible to fake one's way tonally through notation, but not rhythmically. There are no valves, keys, or frets to assist one in decoding rhythm. Perhaps that is why string players who don't audiate have questionable intonation, and why we, as a culture, are more deficient rhythmically than tonally.

Audiation versus Imitation and Memorization

Think of a familiar piece of music:

- Are you aware, for example, of its tonality and meter?
- Does it include any modulations?
- Are you familiar with its underlying chord progressions?
- Can you perform it in a style other than one with which you are familiar?
- Can you improvise a variation on the melody?
- Can you perform it in another keyality (while a *key* is a key signature seen in notation, *keyality* is heard in audiation), tonality, or meter without the aid of notation?

If you answer yes to those questions, and more like them, you are audiating to some extent. If you answer no, the chances are that you imitate or memorize what you perform. If that is the case, think about the way you were or are being taught, and also, think about the way you are teaching. Do you wish that you had been taught to audiate? Do you think you should teach your students how to audiate?

Interpreting Notation

Students should acquire a listening and a singing/chanting vocabulary of tonal and rhythm

Levels of Learning
Music Learning Sequence

Discrimination Learning

1. Aural/Oral—Echoing tonal and rhythm patterns using neutral syllables
2. Verbal Association—Echoing tonal and rhythm patterns with specific syllables
3. Partial Synthesis—Performing musical phrases with syllables
4. Symbolic Association—Reading and writing notation for rhythm and tonal patterns previously performed by rote
5. Composite Synthesis—Reading and writing notation for musical phrases previously performed by rote as well as new phrases consisting of familiar patterns.

Inference Learning

Generalization
aural/oral verbal symbolic

Creativity/Improvisation
aural/oral symbolic

Theoretical Understanding
aural/oral verbal symbolic

patterns before engaging in music reading. That is, students should be able to audiate what is being read. How else might a student know if a mistake is being made? Unfortunately, many students, regardless of age and background, are unable to audiate what they see in notation because they have, at best, only limited listening and singing/chanting tonal- and rhythm-pattern vocabularies. To make matters worse, many cannot sing even the resting tone or distinguish in movement between macrobeats and microbeats in music. With such limited ability, it is not possible to perform with good intonation, consistent tempo, or appropriate meter. To perform musically, for example, is to audiate a rest, not to "count" it.

What I am attempting to explain is that in terms of Music Learning Theory, levels of learning, such as listening, performing, reading, writing, theory, creativity, improvisation, and so on, are often taught out of sequence. Some of the most important levels are even taught backwards. Worse yet, they are frequently all taught at once, none serving as a readiness for another. Instrumental instruction often begins by reading notation. That is, students are asked to interpret notation without first learning through listening to audiate a resting tone and the macrobeats and microbeats in the tonality and meter of the notated music. They are erroneously taught music theory in order to learn to read notation, and audiation is almost totally ignored. Moreover, very few are able to sing tonal patterns and rhythm patterns. Most students are taught instrumental technique, the names of lines and spaces, the time value names of notes, the principles of rhythm and melody, tone quality, the recognition of mistakes, and more, all at the same time. Because it is so difficult for students to produce a good tone quality without first having had the opportunity of audiating it, it is not surprising that many discontinue participation in beginning instrumental music. How can instruction in breathing and posture be a viable excuse for a student who has not been given the opportunity to hear examples of good tone quality and time to absorb it?

Consider the teaching of creativity and improvisation. Can a student be expected to create and improvise without having an audiation vocabulary of tonal and rhythm patterns in different tonalities and meters? Just as persons need to have words in their vocabulary to say something, students need to have tonal patterns and rhythm patterns in their vocabularies to express themselves musically. Creativity and improvisation cannot take place in a vacuum—the vacuum being a lack of readiness.

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I must emphasize that in Music Learning Theory, tonal patterns and rhythm patterns are not taught as drill or apart from music itself. The beauty of Music Learning Theory is in how easily it coordinates with and quickly becomes part of the making of music. At the first level of learning sequence activities (aural/oral) tonal- and rhythm-pattern

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vocabularies are developed in a musical context. At the next level (verbal association) tonal and rhythm solfège are introduced. Next, in partial synthesis, tonal patterns and rhythm patterns are put together in musical phrases as students learn to audiate tonalities and meters and musically intelligent listening takes place. The fourth and fifth levels—symbolic association and composite synthesis—incorporate the reading and writing of familiar patterns in notation.

Given the readiness that the previous five levels of discrimination learning provide, inference learning is undertaken next. In generalization, the basic level of inference learning, students learn to make judgments and draw conclusions about music by applying knowledge of the familiar to the unfamiliar. They are able to listen to unfamiliar music and identify, for example, its tonality and meter. They are able to sight-read unfamiliar music because they have already learned to read familiar music at the symbolic association and composite synthesis levels of learning. It is unrealistic to expect students to sight-read unless they have the readiness to do so in terms of already being able to read familiar music.

Then comes perhaps the most gratifying level of all: creativity and improvisation. Students do not have to be fooled into thinking that they are creating and improvising. They know that they are able to create and improvise because of the direct experience that comes about by having participated in the previous levels of learning. They have vocabularies to work with.

Give special attention to the fact that among the levels of Music Learning Theory, notation is never taught first.

The final level is theoretical understanding, often referred to as music theory. It is actually the least important, which is why it comes last in the learning sequence hierarchy. Think of the number of fine musicians who have little or no understanding of music theory and notation. Think, too, of the number of highly educated musicians who, although they may know music theory and notation, are seriously limited in their musicianship as a result of their limited audiation. They can imitate, memorize, and take directions, but they cannot create or improvise. They have been, and are, deprived.

Be assured that Music Learning Theory does not require that the levels of Music Learning Theory are always taught in the same stepwise sequence. There are many possibilities for bridging among levels (that is, *temporary* skipping), and thus, it is not necessary always to move stepwise from level to level. Also, give special attention to the fact that among the levels of Music Learning Theory, notation is never taught first. Notation is not considered a readiness for audiation but, in dramatic contrast, audiation serves as the readiness for notation. And always remember, music theory comes last. Perhaps I should admit that I am not convinced that music theory, particularly the way it is currently being taught, need be taught at all.

There are persons who think Music Learning Theory is so concerned with audiation that it excludes music reading. It does not. In reality, Music Learning Theory naturally embraces music reading by emphasizing logograms, sometimes called logographs. Logograms are complete words. Languages that have logograms do not have an alphabet. Chinese is an example. In those languages, children learn to read words, not letters. That is what I think whole language is about. Music Learning Theory actually has much in common with whole language. In learning sequence activities, students learn to audiate and then to read the patterns that they audiate. They are not taught to read individual notes. That is why students of Music Learning Theory are such facile readers and why they enjoy what they are doing. In a sense, music reading teaches itself when audiation serves as a readiness.

It is essential to understand that notation can only teach you to remember what you can already audiate. That is the purpose of notation. To ask more of music notation is to be unrealistic, because music notation is one of the most abstract coding systems known to humankind. For example, think of jazz. It is not possible to notate the style of jazz. The style of jazz cannot be learned from notation. You must be able to audiate the style of jazz in order to read notation in a jazz style. In fact, the most important things about music cannot be notated, they can only be audiated. Notation, to be understood, must be transcended as a window to look through to embrace audiation on the other side.

Relating Music Aptitude

There remains one consideration that is fundamentally important to Music Learning Theory. It is music aptitude and how it relates to teaching to students' individual musical differences. All students do not have the same potential to achieve in music. Because we have a tendency to confuse aptitude (potential) with achievement (the realization of potential), we often assess students incorrectly. Although it is true that students with high achievement in music also have high aptitude, the reverse is not true. Approximately half the number of students who demonstrate below-average music achievement have average and above-average music aptitude. The majority of those students go through school with their potential in music unknown to their teachers. Because they may not have had the opportunity to achieve in music, they are often incorrectly believed to have low music aptitude. Unfortunately, music aptitude and music achievement are confused. For teachers to have the same expectations of all students is not only to perpetuate mediocrity, but to frustrate students with lower aptitudes and to bore those with higher aptitudes.

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A valid music aptitude test can give teachers a head start by revealing students' musical strengths and weaknesses so that instructional time immediately can be used to the fullest and best advantage. For example, some students may have low tonal aptitude and high rhythm aptitude and others may have high tonal aptitude and low rhythm aptitude. Rarely do we find students who are high or low in all music aptitudes. Objective tests can provide information for efficiently and appropriately adapting instruction to the musical strengths and weaknesses of each student.

Through my research I have discovered that there are identifiable difficulty levels for tonal and rhythm patterns. I urge teachers to use these levels as one way of structuring their teaching. All students are expected to learn the easy patterns, but while students with low music aptitude are given extra time to learn to audiate them, students with average and high music aptitudes are learning to audiate the moderately difficult patterns. In the same manner, students with average music aptitude are given extra time to learn to audiate moderately difficult patterns while students with high music aptitude are learning to audiate difficult patterns. Thus, through learning sequence activities, all students learn at the level at which they are capable. No students are denied the opportunity or prevented from learning to audiate and every student is exposed to all levels of Music Learning Theory. All students learn the same skills and all are exposed to a variety of tonalities and meters—the only difference being that some students acquire larger pattern vocabularies than others, just as students acquire varying language vocabularies.

I hope I have raised your curiosity to read further about Music Learning Theory and its practical application in your classroom using learning sequence activities. The following articles should help answer many of your specific, as well as general, questions. I wish you well in your very important work of being a teacher.