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AN INTRODUCTION**TO E. GORDON'S "MUSIC LEARNING THEORY"****Basic questions of cognitive psychology of music**

What is the musical mind/intelligence?

What does "thinking (in) music" mean?

How do we learn music?

How can we teach music?

What should we teach?

Why should we teach it?

When should we sequentially teach it?

Audiation

Audiation is more than

aural perception

reception of sound through the ears (but sound itself is not music)

recognition

identification of a piece of music

memorization

linear recalling of sound information (or, in instrumental music, to remember fingerings)

imitation

a reactive response to what has been heard, a superficial foreground perception (like using tracing paper to draw a picture)

Audiation

Audiation is the foundation of musicianship.

It takes place when we hear and comprehend music for which the sound is no longer or may never have been present.

Audiation is the cognitive process by which the brain gives musical meaning to sounds.

It is an active response, a deep background conception of music.

We give meaning to music by audiating the syntax of the music (i.e. tonality and meter)

When we audiate we recall from memory and at the same time we anticipate or predict the music that will come next (like visualizing and then drawing a picture).

Audiation is a multistage, multidimensional, circular process.

An analogy with language

Language	Music
Speech	Performance
Thought	Audiation

Audiation is the musical equivalent of thinking in language.

When we listen to someone speak we must retain in memory their vocal sounds long enough to recognize and give meaning to the words the sounds represent.

Likewise, when listening to music we are at any given moment organizing in audiation sounds that we have recently heard.

We also anticipate or predict, based on our familiarity with that music and the tonal and rhythmic conventions of the music being heard, what will come next.

Music is not a language. It has no words or grammar. It has only syntax, which is the orderly arrangement of sounds.

Types of Audiation

The types of audiation are not hierarchical.

Some of the types, however, serve as readinesses for others.

Type 1 Listening to familiar or unfamiliar music

Type 2 Reading familiar or unfamiliar music

Type 3 Writing familiar or unfamiliar music from dictation

Type 4 Recalling and performing familiar music from memory

Type 5 Recalling and writing familiar music from memory

Type 6 Creating and improvising unfamiliar music

Type 7 Creating and improvising unfamiliar music while reading

Type 8 Creating and improvising unfamiliar music while writing

Stages of Audiation

the process through which we give syntactical meaning to music (referred to type 1, listening)

Momentary retention

Imitating and audiating tonal patterns and rhythm patterns

Organizing through audiation the essential pitches and durations

Recognizing and identifying a tonal center and macrobeats

Consciously retaining in audiation tonal patterns and rhythm patterns that have been organized

Assessing and possibly restructuring the musical essentials (cyclical process that goes on throughout the sequence of stages)

Recognizing and identifying - in addition to tonality, keyality, meter and tempo – sequence, repetition, form, style, timbre, dynamics and other relevant factors in order to give further meaning to music

Recalling tonal patterns and rhythm patterns organized and audiated in other pieces of music (established vocabulary), comparing their similarities to and differences from the essential patterns in the music that we are presently audiating

Anticipating and predicting tonal and rhythm patterns (based on the perception of the essential tonal and rhythm patterns that are currently audiated, as well as those from other pieces of music heard before)

Syntactical organization of music

Tonal / rhythm patterns	Foreground	Surface structure
essential pitches / durations	Middle ground	Deep structure
Tonality / Meter	Background	

Tonal syntax is determined by the relation of pitches and patterns to a resting tone in a tonality.
 Rhythm syntax is determined by the relation of durations and patterns to macrobeats and microbeats in a meter.

Syntax cannot be taken from music:
 Syntax must be given to music through audiation.

Music Learning Theory

is the outline of logical, fundamental principles for understanding music learning
 is an explanation of how students of all ages learn music
 is concerned specifically with the tonal and rhythm dimensions of music
 offers a specific description of the ways in which the types and stages of audiation ideally occur

MLT addresses the process, not the product, of learning

thus it reveals information about how music might best be sequentially taught
 provides teachers a comprehensive and sequential method for teaching essential audiation skills

"Because of the open-ended nature of the paradigm, Music Learning Theory lays the groundwork for a myriad of teaching and learning settings" (C.Azzara)

Methodology

Central Principles of Music Learning Theory

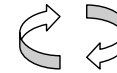
- Sequence
- Whole/Part/Whole = Context/Content/Context
- Focus on patterns as basic units of meaning in music
- Contrast
- Context
- Movement as a foundation for rhythm awareness

Learning Sequence Activities (use of patterns)

the pattern is the basic unit of meaning in music
 just as the word is the basic unit of meaning in language

Patterns are the "part" part of the Whole/Part/Whole curriculum
 5 – 10 min. per class period in tonal and rhythm pattern instruction
 The focus is on the tonal and rhythm patterns that make up music literature
 Patterns help students bring greater understanding to classroom and performance activities

Context "whole" classroom and performance activities <i>songs, chants, pieces of music</i>	Content "part" learning sequence activities <i>patterns</i>
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The more tonal and rhythm patterns students have in their listening and performing vocabularies, the better able they will be to audiate, that is, to conceptualize from and to form generalizations about the music they are hearing or producing.

Music learning sequences

skill learning sequence	tonal content learning sequence rhythm content learning sequence
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At any given time during learning sequence activities, a level of skill learning sequence is being combined with a level of either tonal content learning sequence or rhythm content learning sequence.

Each level serves as a readiness for achieving the next higher level of tonal content.

Skill learning sequence

	DISCRIMINATION LEARNING	INFERENCE LEARNING		
		Generalization →	Creativity / Improvisation	Theoretical Understanding
Aural – Oral	imitation of patterns with neutral syllables		invention of patterns with neutral syllable	
Verbal Association	imitation of (familiar) patterns with tonal and rhythm syllables	"Oral dictation"	invention of patterns with tonal / rhythm syllables	
Symbolic Association	reading / writing of (familiar) patterns	Sight reading / Writing from dictation	reading / writing of unfamiliar patterns	

Tonal Content Learning Sequence

Tonal learning is facilitated by development of a sense of tonality and a vocabulary of tonal patterns.

Most tonal patterns are arpeggios on basic functions of a tonality.

Tonalities are all tonal systems – major, minor, other systems evolved from the church modes - that share the characteristic of being audiated in relation to a resting tone.

Keyality refers to the pitch center (A or Bb, for example), or tonic, in a piece of music.

Tonalities, sequenced primarily according to familiarity, are:

- major (do) harmonic minor (la)
- mixolydian (so) dorian (re)
- lydian (fa) phrygian (mi)
- aeolian (la)
- locrian (ti)
- other modes (altered phrygian, ...)

Tonal solfege

The “**moveable do**” tonal solfege system

- is economic: eight solfege syllables suffice for defining and naming all basic tonalities (+ si/sü)
- maintains the internal logic of interval relationships
- is the best suited system for developing audiation of various tonalities

The system used by Gordon may be considered an extension of Kodaly's system.

It may be defined a modal solmisation system.

Rhythm Content Learning Sequence

Rhythm learning is facilitated by development of a sense of meter and a vocabulary of rhythm patterns.

Rhythm patterns are rhythm motives / cells basing on a defined meter

Elements of rhythm

In order to establish rhythm syntax all three following elements must be audiated at the same time:

Macrobeats are those beats that one arbitrarily feels to be the longest

Macrobeats may be divided into either two or three **microbeats** of equal duration

Melodic Rhythm is the ongoing series of rhythm patterns in a piece of music.

Meters are defined according to the ways in which macrobeats are grouped and divided into microbeats.

It is important to define meters on the basis of audiation, not notation.

Examples of meters may be: Dude dude, Dudadi dudadi, Dude dude dudadi

Meter classification	Divisions in microbeats		
	duple meter	triple meter	irregular meter
1 macrobeat	▭	▭▭	
2 macrobeats	▭▭	▭▭▭	▭▭▭ ▭▭▭
3 macrobeats	▭▭▭	▭▭▭▭▭	▭▭▭▭▭ ▭▭▭▭▭ and others
4 macrobeats	▭▭▭▭	▭▭▭▭▭▭	▭▭▭▭▭▭ and others
5 macrobeats	▭▭▭▭▭	▭▭▭▭▭▭▭▭	▭▭▭▭▭▭▭▭ and others

In rhythm instruction a proper **content learning sequence** may be so articulated:

macrobeat/microbeat patterns

in usual duple meter (dude dude dude dude)

and usual triple meter (dudadi dudadi dudadi dudadi)

division patterns, elongation patterns, rest patterns, and tie patterns

that is, patterns with subdivisions: dukadeka, duka daka dika

other meters

without and with subdivisions (dudadi dudadi dude, dudadi dude dude, dude dudadi, ...)

Rhythm solfege

The “beat function” rhythm solfege system developed by Edwin E. Gordon and others is based on how rhythm is audiated, not notated

is very comprehensive, accounting unambiguously for virtually any rhythm

using a limited set of syllables it helps to audiate and distinguish between different patterns, functions, and meters.

Andrea Sangiorgio simplified it to combinations of the following elements:

Du
Du de **Du da di**
Duka deka **Duka daka dika**

(for a triplet in a duple meter the *d* changes to *b*: for example, in 4/4 dude dude *dubabi du*)

Using Tonal Patterns and Rhythm Patterns During Classroom Activities

The practice of patterns takes only five to ten minutes of each music class period. The remainder of the class is spent doing classroom activities.

Learning sequence activities provide students with skills and knowledge that enable them to bring greater understanding to the music they study in classroom activities.

By isolating the tonal and rhythm patterns that constitute a musical work, teachers help students comprehend how musical parts fit together to form musical wholes.

The number of possible ways to refer to tonal and rhythm patterns while teaching in different contexts – instrumental music, orchestra, choir, elementary general music, Orff, Kodaly... - is virtually limitless.

An example: Learning a rote song

The teacher establishes tonality and meter ("tune-up")

The students have to be actively involved in the listening process by adding a new task to each repetition. The students:

- Just listen to the song (unaccompanied).
- Move to macrobeats and/or microbeats while listening.
- Audiate the resting tone while listening. Sing the resting tone after teacher finishes singing the song.
- Audiate the song.
- Sing the song or a fragment of the song without accompaniment.
- Sing the song with accompaniment.
- Alternate the learning of the melody with the singing/chanting of tonal patterns or rhythm patterns relating to the tonality and meter of the song
- Alternate silence (thinking) and music (singing and thinking)

If the group has difficulty singing a part of the song the teacher isolates the troublesome segment and repeats as necessary. Continues to establish tonality and meter of the song through tonal and rhythm patterns.

The teacher sings for students, not with them. The students need to internalize the song through audiation.

The song first, then the words. The students can better focus on the musical aspects of the song. Bass lines. Through singing the root melodies, the students grasp the "big picture" in music and understand how their part relates to others in the overall musical texture.

Music aptitude – Music achievement**Music aptitude**

is the potential to achieve in music

is normally distributed among the population at birth

may concern different aspects (rhythm, tonal aptitude...)

is developmental, that is, the quality of a child's music environment affects the level of a child's music aptitude (until 9 years).

Music aptitude is a product of both innate potential and environmental influences.

Music achievement

Music achievement is accomplishment in music, the measure of what a student has already learned in music.

What a student can do is the result of the interaction between his aptitude and the opportunities offered by the environment.

Basic methodological principle:

Teach to individual differences