MLT & Other Learning Theories

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Music Learning Theory (MLT) is among the most well-known and popular theories utilized in music education (Gordon, 2012). It is a theory about how we learn music, not an actual teaching method with teaching techniques and materials. Gordon believes that we learn music in the same way we learn a new language. By using MLT, babies, children, adolescents, and adults can learn and interact with music just as they would interact with language. MLT's two central ideas are Audiation and Sequencing.

Audiation is not only perception or inner hearing, but hearing and understanding music in your mind (Gordon, 2012). It is similar to thinking in language, like understanding a sentence in your mind without hearing it out loud. Audiation involves prediction, in that you can process musical sounds, make sense of them through your experiences, and make a prediction as to where the music is going to go.

Aptitude is something that everyone is born with (Gordon, 2012). We teach children to audiate by providing knowledge and opportunities to do so. Audiation is thinking and assigning meaning to music in our mind. We can audiate music that we are currently listening to, music that we have heard in the past, or music that we have not heard, but are instead reading via music notation. When we listen to music and assign meaning to it based on previous experiences, we are audiating. When we read a piece of music, and assign meaning to it based on previous experiences, we are audiating.

Just as spoken language existed before written language, so did the aural tradition of music exist before it was written down in notational form (Gordon, 2012). It is important for students to learn audiation, read music notation and study music in the proper sequence, to give meaning to what they are hearing and reading. Gordon suggests that a wind player who does not

audiate is able to push down the appropriate keys on their instrument in response to seeing a note on the staff, but they have no idea if what they are playing is correct. The player may be unable to tune their instrument, let alone play in tune throughout the range of their instrument, if they are unable to audiate. Students who do not audiate rhythm patterns and beat functions may resort to counting, perhaps unsteadily and imprecisely, leading to performance of incorrect rhythms.

Audiation is a key to student motivation at all levels of music learning, yet many methods present it out of order or omit it entirely (Gordon, 2012). Instrumental methods fall into this category as well, many of which are based on reading, memorization, and imitation first. Methods like this can catch a student's interest at first, but it can quickly wane if that student does not experience success in learning. Audiation allows students to appreciate and give meaning to music through understanding.

Gordon (2012) accurately compares reading music notation to language structure. While letters of the alphabet are important, we do not tend to look at them individually when reading a passage, as each one individually has little meaning. The words have meaning and provide context when we read. In music, individual pitches and rhythmic values are important, but are by themselves meaningless and have no context. We get meaning from tonal patterns and rhythmic patterns. Just as we read words (groups of letters) to gain meaning and intent, we read tonal patterns and rhythmic patterns (groups of pitch and rhythm values) to find meaning and make music in musical passages.

Notational audiation is audiating written music notation (Gordon, 2012). It is different from decoding notation, as decoding is simply reading individual written notes and symbols, and not the larger patterns and context that make it more musical. Audiation is taking written notes

and making music out of them. Gordon states that notation and theory are often taught to students in place of audiation, and that was my experience as a public school student and undergraduate student.

Imitation and audiation tend to be interchanged but are not interchangeable (Gordon, 2012). Imitation, or inner hearing, is a product of rote learning, whereas audiation is a process of learning by understanding. Gordon explains that imitation is learning through someone else's ears, where audiation is learning through your own ears (or eyes). Imitation is superficial and temporary, whereas audiation is never forgotten, and is continuously applicable to new music and musical experiences. The process of audiation involves listening, playing, reading, composing, and improvising music while at the same time focusing on key and tonality, meter and rhythmic patterns, and tempo.

There are eight types of audiation, which are not hierarchical, though some of the types serve to prepare for other types (Gordon, 2012).

Type 1: Listening to Familiar or Unfamiliar Music: This is the most common type of audiation, where the listener focuses on essential pitches and essential durations that contribute to essential patterns and provide meaning to the music.

Type 2: Reading Familiar or Unfamiliar Music: Reading a score silently, performing a piece of music from sight, or conducting from a full score before hearing the music.

Type 3: Writing Familiar or Unfamiliar Music from Dictation: We audiate what we have first aurally perceived, then we create a visual representation of that audiation via music notation.

Type 4: Recalling and Performing Familiar Music from Memory: This includes recalling familiar patterns vocally/instrumentally, conducting something that we hear in our head, or just silently reflecting on a piece we have heard before.

Type 5: Recalling and Writing Familiar Music from Memory: This also involves notational audiation, where we write familiar patterns in familiar music we recall through audiation. Where Type 4 culminates in a performance, Type 5 is finalized in a written format.

Type 6: Creating or Improvising Unfamiliar Music while Performing or in Silence: This type of audiation occurs in silence or in performance.

Type 7: Reading and Creating or Improvising Unfamiliar Music: This type of audiation is like Type 6, but it involves notational audiation.

Type 8: Writing and Creating or Improvising Unfamiliar Music: This involves notational audiation. While Type 7 is finalized in reading, Type 8 is finalized in writing.

There are six stages of audiation, and they are sequential. One stage serves to ready the listener for the next stage (Gordon, 2012).

Stage 1: Momentary Retention: In this stage, we retain short passages of notes and rhythms that we immediately heard. This is done without meaning, and is technically not audiation, but imitation. This is a needed stage for the meaning that will be given to the sound in Stage 2.

Stage 2: Imitating and Audiating Tonal Patterns and Rhythm Patterns and Recognizing and Identifying a Tonal Center and Macrobeats: This stage begins with listening and identifying pitch and durations, identifying tonal center(s) and macrobeats by imitation (Stage 1). Then, through audiation, the sounds are organized into essential pitches and durations, and essential tonal patterns and rhythm patterns, based on the tonal center(s) and macrobeats previously identified.

Stage 3: Establishing Objective or Subjective Tonality and Meter: Stages 1 and 2 help to establish tonality and meter. If the tonality and meter are agreed upon, they are objective. If

there is not a consensus on tonality or meter, they are subjective. Stages 1 through 3 can happen very quickly, seemingly simultaneously.

Stage 4: Retaining in Audiation Tonal Patterns and Rhythm Patterns That Have Been Organized: In Stage 4, we recognize and identify sequence, repetition, form, style, timbre, and dynamics to the musical components identified and organized in the first three stages. Stages 1 through 4 function in a cyclical process, as we continue to refine tonality and meter.

Stage 5: Recalling Tonal Patterns and Rhythm Patterns Organized and Audiated in Other Music: As our experiences and vocabulary grow, we function in Stage 5 more effectively. In this stage, we recall tonal patterns and rhythm patterns we have audiated from other music and compare them to the music we are audiating in stages 1 through 4.

Stage 6: Anticipating and Predicting Tonal Patterns and Rhythm Patterns: As we participate in the first five stages, we begin to better anticipate and predict what we will hear next in the music, regarding essential tonal patterns and essential rhythm patterns. Anticipation refers to foretelling what will happen next in *familiar* music, while prediction refers to foretelling what will happen next in *unfamiliar* music. The better we anticipate and predict, the better we understand the music we are hearing.

As for practical application of audiation techniques in the classroom, singing is perhaps the most important and easiest to implement. Gordon and Kodaly were firm believers that singing should not only supplement, but also come before, instrumental instruction (Liperote, 2006). Established musicians agree that sight-singing, the ability to sing music that is seen but only heard mentally, is a valuable skill for singers and instrumentalists alike (Hiatt & Cross, 2006). Dalby (1999) believes that the instrument should be an extension of the mind's inner audiation instrument. Singing is the perfect way to develop that skill, as it improves melodic and

harmonic intonation as well as phrasing. Through singing, students will also discover the flow of breath necessary to produce a good tone and/or to reach a particular pitch, and feel the distances between the intervals, such as the stretch for a high note or reach for a low one (Garner, 2009).

A simple way to include audiation is to play a phrase or chord at the piano, have the students sing it, and then have them play it on their instruments. Following this easy three-step process, intonation can be significantly improved (Dalby, 1999). Gordon called this a "continual reciprocal aural-oral process" as he too emphasized the importance of repeated listening to, then singing and chanting tonal and rhythmic patterns (Hiatt & Cross 2006).

Another easy idea to address audiation is the addition of scales and arpeggios to rehearsals. Hiatt and Cross posit that, in additional to being essential technical exercises, scales and arpeggios also help introduce audiation (2006).

A note about the difference between music aptitude and music achievement (Gordon, 2012). Music Aptitude is a measure of ability to do something, and so a person's music aptitude is the capacity for that person to learn and understand music. Most people have an average music aptitude, with very few having a high or low aptitude, meaning that most people can learn and understand music, and perform at a high level. MLT approaches students individually, accounting for all music aptitudes. Students with high music aptitude are not bored, while those with low musical aptitude are not frustrated.

Music Achievement is the measure of what has already been learned in music (Gordon, 2012). While there is a misconception that one is either born with musical ability or not, studies show that music aptitude is distributed quite normally among people. It follows the traditional Bell curve. No person is without some level of musical aptitude, which means everyone is musical to some extent. Every child is born with a certain musical aptitude, and a child's

musical environment can affect their music aptitude until about age nine (with the most critical time being between birth and eighteen months), so neither nature nor nurture are solely responsible for a person's music aptitude.

The second core part of MLT is sequence of learning (Gordon, 2012). Just as children experience a sequence of learning in acquiring a new language (listening, speaking, thinking/conversing, reading, and writing), there is a similar sequence of learning in music. Babies listen to songs before attempting to sing them. As they develop musical skills, they begin thinking in musical terms and conversing with others (audiation and improvising). Reading and writing in music should only happen after the first three stages are developed, starting with familiar melodies and rhythms before moving to unfamiliar melodies and rhythms.

MLT designates a sequence of learning, describing what a student should know at a given level to move to the next level (Gordon, 2012). As such, MLT is referred to as a music learning sequence in practical use. Gordon created a Skill Learning Sequence, which is divided into two categories: Discrimination Learning and Inference Learning.

Discrimination Learning, which provides the fundamentals necessary for inference learning, serves to build vocabulary of notes and rhythms and is typically taught by rote via call and response (Gordon, 2012). Students are taught, and they learn, even though they might not know why they are learning the material. Being taught to sing by imitation is an example of discrimination learning, as is learning to sing a passage by memorizing it.

There are five levels of Discrimination Learning from most basic to most advanced are Aural/Oral, Verbal Association, Partial Synthesis, Symbolic Association, and Composite Synthesis (Gordon, 2012). The Aural/Oral level involves listening, imitation, and developing audiation skills (students perform tonal and rhythm patterns on neutral syllables). The Verbal

Association level adds meaning through tonal and rhythm solfege (students attach names – do, re, mi – to the patterns learned in the Aural level). At the Partial Synthesis level, tonal patterns and rhythm patterns are incorporated into a series (students can internally recognize familiar tonal and rhythmic patterns, which helps them listen to music at a higher level of engagement). The Symbolic Association level includes adding reading and writing notation (students visually associate musical symbols with what they have already experienced aurally). The Composite Synthesis level occurs when students audiate tonality or meter while reading and writing patterns (students can give language to notes and rhythms).

In Inference Learning, students apply the information they acquired in Discrimination Learning to identify, create, and improvise new patterns (Gordon, 2012). During this stage, the teacher guides the student through the process of learning, and the student determines what they actually learn. Inference Learning consists of the following levels from most basic to most advanced: Generalization, Creativity/Improvisation, and Theoretical Understanding. Generalization is subdivided into aural, verbal, and symbolic sub-levels, and they are like their Discrimination Learning counterparts, except that the student can audiate unfamiliar notes and rhythms by comparing them to the familiar patterns they learned by rote. Those notes and rhythms they learned help them to create their own unique musical ideas in the Creativity/Improvisation level. Theoretical Understanding strengthens what was learned at the prior levels by adding proper terminology to musical concepts that the students already understand.

Other components of MLT include Tonal Learning Sequence, Rhythm Learning Sequence, Pattern Learning Sequence, and Whole/Part/Whole (Gordon, 2012). Tonal Learning Sequence emphasizes the importance of having a tonality sense to understand and appreciate

Western music, allowing students to understand, appreciate, and interpret all world music as well as polytonal and multitonal music more easily. Levels of tonal content learning sequence include major and harmonic minor tonalities (tonic, dominant, and subdominant functions), mixolydian tonality, Dorian, Lydian, Phrygian, Aeolian, Locrian, multitonal and mutikeyal, monotonal and monokeyal, and polytonal and polykeyal.

Rhythm Learning Sequence explains how rhythm organizes tonal patterns and enhances style and form in music (Gordon, 2012). Form includes beats, rhythm patterns, phrases, sections, and movements. Rhythm works in tandem with tone quality, melodic and harmonic implications, dynamics, and tempo to define style in music. Rhythm is defined by macrobeats, microbeats, and rhythm patterns, which are applied differently in usual and unusual meter.

In usual meter, macrobeats are larger and can be subjective (Gordon, 2012). Microbeats are shorter and a division of macrobeats. Macrobeats and microbeats underlie rhythm patterns and, when all three are utilized together, they cannot be individually distinguished and create a holistic approach to the piece.

Unusual meter occurs when macrobeats are of different lengths with a single measure (Gordon, 2012). Microbeats are divided unevenly into macrobeats in unusual meter, sometimes into two, three, or none. Rhythm patterns in unusually paired meter include two macrobeats, while rhythm patterns in unusual unpaired meter include three macrobeats.

Pattern Learning Sequence describes how students will acquire a vocabulary of tonal patterns and rhythm patterns built from their basic knowledge of aural/oral and verbal association (Gordon, 2012). Because the syllables used have clear connections to the patterns, they provide a foundation for audiating notes and rhythms.

The Whole/Part/Whole approach is a common way for teachers to organize content (Gordon, 2012). In a MLT curriculum, students learn music in three stages: whole, parts, and whole. The first stage introduces students to the whole, which takes a broader view or scope of the unit and includes context, tonality, and meter. In a musical rehearsal, this might involve an initial run-through of a piece or section. In the second, students focus in on specific parts or components including content, patterns, and skills. In the third and final stage, students incorporate components of the second stage into the whole, which includes context, tonality/meter, content, patterns, and skills.

Other Music Learning Theories

In addition to MLT, there are several other valuable learning theories, including Social Constructivism Educational Approaches, Zone of Proximal Development (ZPD), Gestalt Theory, Behaviorism, Piaget, and Bloom's Taxonomy.

While objectivism is the traditional and more passive approach to education, constructivism is at the opposite end of the spectrum in that it is an active form of learning (Education Encyclopedia, 2021). Constructivism focuses on the learning, thinking, and development of the learner with problem solving being the most important component. Students construct their own understanding by analyzing previous and current experiences.

American philosopher and educator John Dewey (1859–1952) believed that education required a more practical, problem-solving approach dealing with real world problems that have relatability and significance to learners (Education Encyclopedia, 2021). He contended that the most effective learning occurs in environments where students work together (i.e. social settings) discussing differing opinions, variables, and solutions.

American psychologist Jerome Bruner (1915-2016) argued that the true purpose of education occurs when an adult nurtures a child's thinking and problem-solving skills instead of simply presenting information (McLeod, 1970). Bruner believed that, instead of rote learning, teachers should provide information and allow the learners to organize and determine relationships on their own. Discovery learning is aided by the spiral curriculum, where advanced topics are introduced at a basic level, and then re-taught at progressively more advanced levels.

Italian physician and educator Maria Montessori (1870-1952) is best known for her contribution to educational philosophy (Irinyi, 2007). She believed that instead of creating lesson plans, the teacher should provide an environment in which learners can create their own opinions and questions through exploration and experimentation. Montessori believed that learning in a creative, thought-provoking environment would encourage exploring more deeply, questioning constructs, and retaining knowledge gained.

Russian psychologist Lev Vygotsky (1896–1934) is best known for his social constructivism idea of the Zone of Proximal Development (ZPD) which discusses how language and thought are utilized in society (Marsh & Ketterer, 2005). Vygotsky theorized that children would learn better in a learning environment with a competent teacher to help them though inconsistences and conceptions using communication rather than in a solo learning environment.

Gestalt Theory came about in the early twentieth century from the work of Max Wetheimer, Wolfgang Kohler, and Kurt Koffka (Chapman, 2018). The German word "gestalt" is defined as pattern, configuration, placed, or put together. The theory stresses that the sum is greater than its parts. The Gestalt theory posits that the human brain attempts to simplify complex images/designs by subconsciously arranging the parts into an organized system that

creates a whole. Simply put, our brains seek out structure/patterns to better understand our environment.

Behaviorism is the scientific study of behavior in a single individual rather than social groups or cultures (Graham, 2019). Behaviorism follows these claims: 1. Psychology is the science of behavior, 2. Behavior can be explained without making ultimate reference to mental events or to internal psychological processes, and 3. If, while in the course of theory development in psychology, mental terms/concepts are deployed in describing or explaining behavior, then either (a) these terms/concepts should be eliminated and replaced by behavioral terms or (b) they can and should be translated or paraphrased into behavioral concepts.

Jean Piaget, originally trained in biology and philosophy, studied the development of knowledge in an individual and a group while applying developmental and historical perspectives to existing knowledge (Huitt & Hummel, 2003). Piaget postulated that younger children's answers were different qualitatively not because they were not as smart, but because the older children's thought processes were different. Piaget identified 4 stages of cognitive development from infant on as: sensorimotor stage, pre-operational stage, concrete operational stage, and formal operational stage.

In 1956, Benjamin Bloom created Bloom's Taxonomy, which is a classification of learning outcomes and objectives that has proved helpful for many aspects of developing curriculum and assessments (Bloom, 1956). Bloom identifies six levels of cognitive development ranging from the most basic of recall to the most complex mental levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. They are typically arranged in a pyramidal design with knowledge having the widest base and attainability as the foundation, and evaluation as the narrowest on top due to its complexity.

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