BANNASCH, DEREK JAMES. D.M.A. Applications of Edwin Gordon's Music Learning Theory to the Applied Bassoon Curriculum. (2024)
Directed by Michael J. Burns. 47 pp.

This project was intended to provide applied bassoon teachers with an overview of the foundational concepts of Edwin Gordon's Music Learning Theory and to provide examples of how these concepts can be used to supplement bassoon instruction using the *Practical Method for Bassoon* by Julius Weissenborn. The following questions were addressed in this study: What are the foundational and most important concepts in MLT with which applied bassoon teachers need to be familiar? How do these concepts relate to music learning in general and the bassoon in particular? What are some examples of MLT-based methods and techniques that can be used to supplement traditional bassoon instruction? The primary concepts discussed were audiation, music aptitude, sequential instruction, and tonal and rhythm pattern instruction. Examples of supplemental methods and techniques included rote songs and bass lines, movement activities, tonal and rhythm pattern instruction, and improvisation activities.

APPLICATIONS OF EDWIN GORDON'S MUSIC LEARNING THEORY

TO THE APPLIED BASSOON CURRICULUM

by

Derek James Bannasch

A Dissertation
Submitted to
the Faculty of The Graduate School at
The University of North Carolina at
Greensboro in Partial Fulfillment
of the Requirements for the Degree
Doctor of Musical Arts

Greensboro

2024

Approved by

Dr. Michael J. Burns

Committee Chair

APPROVAL PAGE

This dissertation written by Derek J. Bannasch has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair

Dr. Michael Burns

Committee Member

Dr. Tami Draves

Committee Member

Dr. Steven Stusek

February 20, 2024

Date of Acceptance by Committee

February 20, 2024

Date of Final Oral Examination

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CHAPTER I: INTRODUCTION

Edwin Elias Gordon (1927-2015) was an American musician, educator, researcher, and psychologist of music learning who ranks as one of the most important figures in late 20th and early 21st century music teaching and learning. Using the research and writings of Gordon, multiple generations of music educators have been able to base their curricula around the well-researched concepts of music aptitude, audiation, whole-part-whole instruction, and the skill learning sequence for both tonal and rhythm skills. Gordon has also synthesized these and other of his ideas into a comprehensive explanation for how persons learn music called, appropriately enough, Music Learning Theory (MLT).

It is important to note that MLT is a theory of learning, and is neither a method nor a curriculum. Gordon (2017, p.7) himself is very clear on this, writing "Let me explain to you today that there is no Gordon Method. There is only an explanation of how we learn music in a sequential way; and sequential learning is not a method." Instead, he defines a method as…

> … the order in which sequential objectives are introduced in a curriculum to accomplish a comprehensive objective, a goal. (2012, p. 28)

To accomplish these objectives, several methods have been written and published that incorporate MLT into various classroom settings. Examples of this include *Jump Right In: The Music Curriculum* (Taggart, et al. 2000), for kindergarten through eighth grade general music classes; *Jump Right In: The Instrumental Series* (Grunow, et al. 2021) for beginning recorder, woodwinds, brass, strings, and percussion classes; *Music Play* (Valerio, et al. 2000) for pre-school aged children; and *Music Moves for Piano* (Lowe, 2018) for beginning piano instruction. Each of these methods contain songs, chants, patterns, and activities; but most importantly, they

contain a curriculum that is logical, sequential, and thoroughly grounded in research into the psychology of music learning.

In comparison, method books for the bassoon are not rooted in MLT or any other kind of psychology. Instead, they are based on their author's ideas about which notes on the bassoon should be learned first. Such texts as the *Rubank Elementary Method*, (Skornika, 1989), the *Primary Handbook for Bassoon* (Polonchak, 1993), and the venerable *Practical Method for the Bassoon* (Weissenborn, 1887/1995) introduce notes one at a time and the earliest exercises involve long, sustained notes. There are no singing or movement activities, no tonal or rhythm patterns, no improvisation activities, and they all require some prior familiarity with music notation, even in the earliest lessons. Even newer revisions of the Weissenborn text such as Doug Spaniol's *The New Weissenborn Method* (2010) and Frank Morelli's *The First Complete Weissenborn* (2019) follow this traditional, executive skills-based approach.

Compounding the problem is that most applied bassoon teachers have little, if any, familiarity with Gordon or MLT, especially those without a music education background, i.e., persons with degrees in bassoon performance only. Such persons will often become frustrated with young students who have difficulties with rhythms, tempo, and intonation; all the while lacking a knowledge of how to address these problems beyond traditional techniques such as the use of a tuner or writing numbers below the staff to show the students how to "count" the rhythms on the page. Also, while MLT has well-established methods for pre-school, elementary, and beginning band and orchestra, as discussed above, there is currently no method available for applied woodwind and brass instruments, let alone bassoon specific. There are few resources available, even for curious applied teachers.

Research Purpose and Questions

The purpose of this paper is to provide applied bassoon teachers with an overview of the important concepts in Gordon's research and to provide suggestions for how these concepts can be incorporated into traditional bassoon applied texts, specifically the *Practical Method* of Weissenborn. This paper will seek to answer the following questions:

1. What are the foundational and most important concepts in MLT with which applied bassoon teachers need to be familiar?
2. How do those concepts relate to music learning in general, and to the bassoon, in particular?
3. What are some examples of MLT-based methods and techniques that can be used to supplement traditional bassoon instruction, such as the *Practical Method* of Weissenborn?

Justification

Lacking any training in learning theory or pedagogy in general, most applied bassoon teachers teach students the same way that they were taught – usually the traditional methods mentioned above. Such teaching overly intellectualizes music, for example counting rhythms involves more math skills than it does rhythm audiation, just as identifying lines and spaces on a staff involves more symbol decoding than it does tonal audiation. This teaching is also profoundly unmusical – most beginning bassoon texts begin with whole notes and whole rests rather than actual songs or tunes.

This paper will address the knowledge gap in applied bassoon teacher training by introducing them to the basics of a well-researched approach to music teaching and learning and provide them with examples of how they can use it to supplement their teaching.

Definition of Terms

Audiation: the ability to hear and comprehend music, whether or not the music is actually present. Audiation is to music as thought is to language.

Audiation Skills: The types of instrumental skills associated with what goes on inside the brain, e.g. beat competency, pattern recognition, identifying tonality and meter, anticipation of what might come next in a song or chant, and improvisation.

Executive Skills: The types of instrumental skills associated with playing the instrument itself. There are executive skills common to all wind instruments, e.g. posture, hand position, embouchure, breathing, articulation, and fingerings; and executive skills particular to the bassoon, e.g. flicking, voicing, reed adjustment, and more.

Meter: The quality of music determined by how the macrobeats are divided. Gordon used the terms *duple meter*: two microbeats for every macrobeat; *triple meter*: three microbeats for every macrobeat; *unusual paired meter*: a pair of two macrobeats, one of which is in duple and the other in triple; and *unusual unpaired meter*: a group of three macrobeats where two are in duple and one is in triple. MLT advocates selecting music in as many meters as possible.

Music Aptitude: The potential of an individual to learn and develop musical skill. Music aptitude is both innate and affected by musical experiences in early childhood. There are many types of music aptitude, but tonal aptitude and rhythm aptitude are the two primaries.

Music Learning Theory: A comprehensive psychological theory to explain how persons acquire musical skills.

Patterns: Short groups of musical pitches/rhythms that form the building blocks of music. Patterns are to music as words are to language. MLT uses tonal patterns, which are performed without rhythm; and rhythm patterns, which are performed without pitch.

Tonality: The quality of music determined by which pitch is the resting tone/tonic. Gordon used a DO-based major tonality, a LA-based minor tonality, a RE-based Dorian tonality, and so on. MLT advocates selecting music in as many tonalities as possible.

Whole-Part-Whole: A principle of musical curriculum development where music is introduced first without explanation, then broken down into its components – tonal and rhythm patterns, and then put back together so the student experiences the whole with understanding.

Limitations

As with any study, there are limitations to what will be presented in this paper. First is that the body of literature on MLT and its applications is vast, comprising dozens of books, hundreds of journal articles, and several method books. This study will focus on the particular texts that will be of salient interest to applied bassoon teachers. Fortunately, Gordon's books each contain extensive bibliographies to which persons interested in learning more about MLT and its applications can turn. Also, the website of the Gordon Institute for Music Learning (GIML) contains resources and an electronic archive of its journal, *The GIML Audea* on its website. Those interested in learning more will have no shortage of additional resources.

This paper will only include examples of MLT-based activities that could be used in conjunction with the Weissenborn *Practical Method.* These examples are meant to suggest the types of activities that a teacher could use or develop. Creating an entire supplemental curriculum for each lesson of the Weissenborn text or a completely independent method, akin to

what Lowe has done for piano, would be a very beneficial resource for bassoon teachers and is an interest of mine for a future project, but it will not occur within the present study.

Suggestions will focus on beginning bassoon instruction, hence the use of the Weissenborn text. While MLT-based activities would be beneficial to high school- or college-aged students and is an interesting topic, it will not be discussed in this paper. Readers who teach students of these ages are encouraged to extrapolate suggestions to age and skill appropriate levels.

CHAPTER II: THE KEY CONCEPTS OF MUSIC LEARNING THEORY

As one might expect from a comprehensive theory of music learning, MLT consists of many topics. Some topics, while immensely interesting, are not particularly relevant to applied bassoon instruction. For instance, preparatory audiation, the musical thinking of infants and toddlers (Gordon, 2001; Valerio, et al., 2000) is a fascinating topic, but not of immediate concern to bassoon lessons, which typically begin in late elementary or middle school. This survey of the literature will cover the topics of particular importance to instrumental music and which will form the basis of the discussion and exercises created to supplement beginning bassoon instruction

Audiation

Central to Gordon's research and writings is the idea that although music is not a language, it shares a similar function and is learned in a similar way (2012, p. 5). The function of language is to communicate our thoughts and the function of music is to communicate our musical thoughts, which Gordon has named *audiation*:

> Language is the result of the need to communicate. Speech is the way we communicate. Thought is what we have communicated. Music, performance, and audiation have parallel meanings. Music is the result of a need to communicate. Performance is how the communication takes place. Audiation is what is communicated (2012, pp. 4-5).

The notion of audiation as musical thinking is echoed by Grunow and Azzara, who note, "To audiate is to hear and to comprehend music internally even in the absence of actual sound. Audiation is to music as thought is to language" (2021, p. 2). Lowe agrees, writing:

> Audiation means, in the simplest terms, hearing music in the mind with understanding, whether or not the sound is physically present. Students of music should learn to audiate

because music is both an aural art and a performance art. Audiation is fundamental for developing comprehensive music literacy. The ear and the mind must be musically trained before the eyes can read music notation and the ear can listen to music with understanding (2004, p. v).

Types of Audiation

Gordon notes that while "It would be difficult, if not impossible, to describe all of the ways and combinations of ways in which musicians audiate" (2012, p. 6), he does describe eight types of audiation (pp. 13-17). The types are not necessarily sequential, although some do serve as prerequisites for others:

1. Listening to familiar and unfamiliar music: when we audiate while listening, we can identify important elements of the music such as tonality, meter, harmony, and structure.
2. Reading familiar and unfamiliar music: to be able to hear what is in the notation before the sound is performed out loud.
3. Writing familiar and unfamiliar music from dictation: being able to identify familiar and unfamiliar music and patterns and put it into notation.
4. Recalling and performing familiar music from memory: this is different from rote memorization because comprehension of the elements of the music is present.
5. Recalling and writing familiar music from memory: a similar process to above, but this time translating one's audiation into notation, rather than performance.
6. Creating and improvising unfamiliar music while performing or in silence: the ability to recall familiar patterns and spontaneously perform them in unfamiliar orders, leading to improvisation with specific musical context.

7. Creating and improvising unfamiliar music while reading: the ability to recall familiar patterns and perform them while simultaneously reading, e.g. chord symbols or figured bass.
8. Creating and improvising unfamiliar music while writing: the conversion into notation of the music created in numbers six and seven above.

Stages of Audiation

Having described what audiation looks like, Gordon identifies six skill levels that he calls "stages of audiation" (2012, pp. 14-24). This is the learning process for developing audiation ability and unlike the types, "The stages of audiation are hierarchical and cumulative – each stage of audiation becomes the basis for and combines with the next higher stage of audiation" (Gronow et al. 2021, p. 23).

1. Being able to remember short series of pitches or durations that we heard only moments earlier.
2. The ability to silently imitate the pitches or durations heard and organize them into tonal (pitches) or rhythm (durations) patterns.
3. Having organized the patterns, we can now determine the objective tonality or meter of the music we have heard. We may also identify any tonal, metric, or tempo modulations that may occur in the music.
4. Having organized and categorized the patterns, we then retain them in our audiation for long-term memory.
5. Being able to recall and perform the patterns that we have stored, through audiation, in our memories.
6. Being able to anticipate and predict what will happen in unfamiliar music.

Thus, we can say that audiation is thinking in music. Persons who audiate can perform music with good rhythm and intonation, can listen to music while identifying and labeling its important elements, can improvise and compose new music that makes musical sense, and much more. Since this skill is critical to and is the foundation of all music making, it follows that music curricula, regardless of the age level or focus should be about developing students' audiation skills.

Music Aptitude

Teachers who base their curriculum on the development of audiation skills will soon realize that though they are teaching all their students the same things, some students acquire skills more quickly than others and/or at a higher level of skill than others. A teacher's first impulse might be to explain these differences in achievement to differences in work ethic – and certainly practice and work ethic are critical to success in music instruction – but there is something else at play here. All persons are born with varying degrees of potential for acquiring musical skills, which Gordon calls "music aptitude."

Simply defined, music aptitude is "a measure of a student's potential to learn music" (Gordon, 2012, p. 44), in other words, the potential to learn how to audiate. However, much like potential for math or basketball, potential is useless if the person is never given the opportunity to cultivate it. Gordon (1999, p. 43) writes:

> Specifically, all of us are born with the potential to develop our audiation, but to make use of that potential we must have an appropriate musical environment. Thus, how well we develop our audiation and are able to understand and enjoy music is in large part dependent upon how well we are taught music.

A few additional things about music aptitude should be noted. Music aptitude is normally distributed amongst populations, with two-thirds of persons falling within one standard deviation (SD) above or below the mean, one-sixth greater than one SD above, and one-sixth greater than one SD below (Grunow et al, 2021, p.10). Music aptitude is completely distinct from and is not highly correlated to intelligence quotient (IQ). Thus, even amongst a population exclusively of high IQ individuals or exclusively low IQ individuals, music aptitude will still be normally distributed (Gordon, 2012, p. 56). For some students, music might be one of the few subjects where they find success in school.

There are several different kinds of aptitude for music. MLT practitioners primarily talk about tonal aptitude and rhythm aptitude, but other aptitudes exist such as melodic, harmonic, tempo, meter, phrasing, balance, and style (Grunow et al., 2021, p. 10). A person with high aptitude in one area might have an average or low aptitude in another area or vice versa. No two persons have the exact same combination of music aptitudes, making it of exceptional importance for music teachers to treat each student as a unique individual. Gordon notes "More than two thousand years ago, Plato said there is nothing more devastating and unequal than the equal treatment of students with unequal aptitudes" (2012, p. 43). Adapting instruction to meet students' individual differences is a cornerstone of MLT.

As discussed, music aptitude is the potential to learn music and thus is distinct from music achievement, which can be defined as how well a student has learned what is taught. They are complementary, but not the same:

> A person is not born knowing how to compose music in a given style. That must be learned, and once learned, is considered music achievement. On the other hand, a person

is born with more or less potential or capacity to learn how to compose music in a given style, and that potential is what we consider to be music aptitude" (2012, p. 44).

Making the distinction between aptitude and achievement and how they interact with one another is important to know. Grunow writes:

> High music achievement signifies the concurrent presence of high music aptitude, but low music achievement indicates nothing about music aptitude, one way or the other. Students who demonstrate low music achievement may simply not have been given an opportunity to achieve. Approximately half the high-aptitude students in a school – those between the 80th and 99th percentiles on a valid music aptitude test – demonstrate less-than-high music achievement. Unfortunately, because most music teachers have not identified the music aptitude levels of their students, large numbers of high-aptitude students are not encouraged to participate in school orchestras, bands, or choruses (2021, p. 9)

Music Aptitude Testing

Having now discussed what music aptitude is and what music aptitude isn't, it is beneficial to discuss how music aptitude is measured. Many music teachers believe that aptitude testing is unnecessary and that they can accurately predict which students show potential for music, but this is simply untrue since music aptitude is innate and cannot be measured by casual observations. The only way to accurately measure music aptitude is through the use of a valid music aptitude test (Grunow et al., 2021, p. 9).

Though music aptitude testing predates Gordon by several decades, earlier tests are of questionable validity and only interesting from a historic perspective. The gold-standard for music aptitude testing is Gordon's *Musical Aptitude Profile* (MAP), First published in 1965, the

MAP measures a person's potential across the seven different music aptitudes listed above by asking students to listen to two musical examples and identifying whether they are the same or different, which Gordon identifies as the most basic form of musical understanding. By focusing on same/different, Gordon removes as much of the effect of music instruction as possible, allowing the test to measure aptitude more accurately (Gordon, 1998).

While the MAP was found to yield a predictive validity coefficient of .75, and thus valid at predicting future success in music instruction (Gordon, 1967), its three-and-a-half-hour length to administer is daunting for teachers. Thus, Gordon designed three simpler tests and showed their validity by correlating their scores to the MAP. Two of these tests are for elementary school aged children and so will not be discussed here, but the *Advanced Measures of Music Audiation* (AMMA) is designed for the junior high, high school, and college-aged students who are the focus of this paper. Published in 1989, the AMMA takes approximately 20 minutes to administer and provides teachers with a measure of their students' tonal and rhythm aptitudes. It is not as detailed as the MAP, but is more user-friendly.

Critics of Gordon's work say that persons will use the knowledge of a student's music aptitude to discourage or even exclude them from participating in music activities. While there will always be persons who misuse test results, this is absolutely not Gordon's intention, as he makes abundantly clear:

> Regardless of a test's eminence, it may be misused to deny children opportunities or to stigmatize them as slow or disabled learners, incapable of meeting ordinary classroom demands. Regrettable as this is, there are more compelling reasons for administering tests than for not doing so. (2012, p. 55).

Furthermore, since there are no students with zero music aptitude, i.e., absolutely no potential for music learning, all students have a right to quality music instruction, just as all students have a right to math or language education, regardless of IQ (Grunow et al., 2021, p.10).

In the right hands, the data learned from music aptitude testing is of tremendous benefit to music teachers. Aptitude test scores allow them to identify, encourage, and challenge students with high aptitude; set realistic goals and expectations for low aptitude students, who might otherwise be overcome with frustration; adapt instruction to address student weaknesses and highlight their strengths; and many more applications. In all educational settings, but especially in the applied studio, each student is a unique individual and deserves instruction tailored to their own musical individuality.

Sequential Instruction

If the development of audiation skills is the end-goal of music instruction and music aptitude testing shows us what that end-goal might look like for each student, then sequential instruction is the road map for how we reach that goal. In this section, we will discuss two different sequences used by practitioners of MLT-based music curriculum: the four vocabularies and the Whole-Part-Whole approach to teaching.

The Four Vocabularies

As mentioned above, although music is not a language, it is learned in much the same way language is learned and one of the goals of language-learning is the development of vocabulary. For both music and language, the vocabularies are the same and developed in the same order: listen, speak, read, and write. Liperote (2006) writes:

> The most important of the four vocabularies is listening, because it establishes the foundation on which the others are built. In language, children listen for nearly a year

> before their speaking vocabulary begins to emerge. Ideally, they acquire a large listening and speaking vocabulary before being asked to read in a formal educational setting. In fact, it's estimated that the average child knows about 13,000 words by the time he or she is six years old. The transition to reading comes more naturally for children with rich listening and speaking vocabularies. Their familiarity with content and context enables them to not just pronounce the words they read, but also to comprehend the meaning. Just as listening to language prepares children to speak, listening and speaking prepare them to read and write. The four vocabularies form a chain, with proficiency at the early levels giving the learner stress-free entry to the next level (pp. 46-47).

The order of the sequence is of critical importance. Taggart (2000, p. ix) describes the four vocabularies as a pyramid with listening as the largest vocabulary and the foundation of the pyramid. Above it is speaking, which contains most of the listening vocabulary, but not all. Above that is reading and then writing, each successively smaller than the preceding. One would never try to teach someone to read and write a language before they had ever heard it spoken or had it spoken themselves.

However, this is exactly what happens in most traditional instrumental music instruction. Students are taught to identify lines and spaces on a treble clef, e.g. Every Good Boy Does Fine, etc; write in the counting for varies notes, e.g. "A quarter note gets one beat, a half note gets two," etc.; either before or concurrently with learning to play the instrument. In other words, they are taught the reading and writing vocabularies before they learn the listening and speaking vocabularies – they have inverted Taggart's pyramid.

So what might this look like with regards to music? The biggest difference is that "speaking" is replaced with musical behaviors, e.g. singing, chanting, movement, and

performing on instruments, although for purposes of simplicity it will still be referred to as the "speaking vocabulary" (Grunow et al. 2021, p. 2). Otherwise, the sequence looks remarkably similar.

The first step is to help students develop as large of a listening vocabulary as possible. This is done by exposing children to as much music as possible in a wide variety of tonalities, meters, and styles. In popular culture persons are mainly exposed to music in major tonality and duple meter, so music teachers need to fill in the gaps by introducing music in minor, Dorian, Mixolydian, and other tonalities; and in triple and unusual meters. Ideally this is done in early childhood via parent modeling (Taggart et al. 2000, p. ix), but recordings and/or an introduction later in development are better than not at all. A large listening vocabulary also helps with students' ability to audiate tonality and meter. Students learn what something *is* by learning what it *isn't,* in other words, "we know this is major because it's not minor or Dorian. We know this is in duple meter because it's not in triple meter." Gordon calls this "discrimination learning" (2012, p. 95), which will be discussed at length in the next section.

As students are developing their listening vocabularies, they also begin developing their speaking vocabularies, which as mentioned, in a musical context refers to singing, chanting, movement, performing on instruments, and improvising. In other words, students start to echo back the music that they have heard presented to them. The importance of singing in instrumental music will be discussed in a later section, but it is important to note that singing activities should be done in a singing voice and with pitch accuracy (Conway, 2019, p. 41). Removing the crutch of a musical instrument really allows the teacher to hear what students are (or aren't) audiating. Once students can successfully sing songs and patterns, they can begin to figure them out by ear on instruments (Liperote, 2006, p. 49).

MLT is often accused by its detractors of being opposed to reading and writing music notation, but this simply is not true. Reading and writing can be critical parts of the music learning process, but they must be kept in their proper place in the sequence. Just like the goal of reading and writing in language is to comprehend what one reads and writes, the goal of reading and writing in music is to audiate what one reads and writes. This can only be done after the listening and speaking vocabularies are extensively developed. Without audiation, the person isn't really reading, but merely decoding symbols (Gordon, 2004, p. 5).

Whole-Part-Whole

The other important sequence we will discuss is the whole-part-whole (W-P-W) approach to music teaching and learning. W-P-W is a common method in many educational settings besides music, and involves a sequence of steps: 1) Students are given a broad overview of a particular concept or content; 2) The concept or content is broken down into its component pieces and analyzed in depth; 3) The pieces are put back together and the whole concept or content is experienced again, this time with greater understanding.

Gestalt psychology advocates this type of sequencing and its application to music teaching and learning, albiet under the name "synthesis-analysis-synthesis." Kohut (1992) writes, "As a very basic, general approach to rehearsal technique, S-A-S is highly recommended. It also works well as a general approach to the teaching of class lessons." He emphasizes the importance of beginning with the whole rather than the parts because without that first exposure, "[students] cannot see the forest, because the only thing they have been exposed to is the individual trees" (p. 81).

Rote Song Procedure

MLT practitioners make great use of W-P-W in two main ways. The first is in the teaching of rote songs. Since MLT is a "sound-before-sight" approach, as discussed above, new songs are introduced by ear rather than by notation. The first step is for the teacher to establish tonality, either through a tonic-dominant-tonic progression at the piano or by outlining the tonality vocally. Establishing tonality provides context and calibrates students' audiation to a particular tonality. Next, the teacher sings the song in its entirety while students listen.

Traditional W-P-W would then have the teacher teach the students to echo component phrases of the song and while MLT practitioners certainly do this, there are additional steps. In order to give the students rhythmic context, the teacher will sing the song three additional times – during the first, the students will move to macrobeats in their feet (heels, if sitting); during the second, the students will pat microbeats on their shoulders (thighs, if sitting); and during the third, the students will move to macrobeats in their feet/heels while simultaneously patting microbeats on their shoulders/thighs These steps not only add the kinesthetic experience of rhythm to the music lesson, but also make the students audiate the meter of the song – two microbeats per macrobeat is duple meter, three microbeats per macrobeat is triple meter.

Another step in the rote song procedure is for the teacher to introduce students to the resting tone of the song by singing it and occasionally stopping and asking the students to sing it before continuing the rest of the song. Being able to audiate and sing the resting tone gives students a "home base," which helps students distinguish between different tonalities. At this point the teacher may also introduce the bass line, either by singing or on an instrument. Learning the bass lines to rote songs allows the teacher to introduce harmonic functions such as

tonic, dominant, and subdominant; and the later superimposition of new patterns over existing bass lines forms the basis for improvisation.

By the time the students sing the song themselves – the final "whole" in W-P-W – they will have heard the song multiple times, heard it broken up into component phrases, done movement activities to reinforce meter, sung the resting tone, and learned the bass line. In other word, the parts have been put back together into a whole, but this time with greater understanding. Rote song procedure in this manner is advocated by Conway (2019, p. 42-45), Liperote (2006, p. 46), and Taggart (2000), among others; and provides a comprehensive, audiation-based method for learning new material.

Learning Sequence Activities

The other way that W-P-W is used in an MLT-based curriculum is through Learning Sequence Activities (LSA), also called tonal and rhythm pattern instruction. Patterns and LSA will be discussed in detail in the next section but bear a mention here. Pattern instruction provides the "part" that bridges the gap between having a superficial and a deep understanding of the music introduced in classroom activities. The website of the Gordon Institute for Music Learning writes:

> Music Learning Theory provides an elegant Whole/Part/Whole approach to developing audiation. Songs and music literature are the "whole" part of the music curriculum. These are taught during classroom activities. Tonal and rhythm patterns are the "part" part, and are taught during learning sequence activities. Although learning sequence activities are the heart of Music Learning Theory, where theory is applied directly to music teaching practice, the main objective is to enhance the teacher's ability to help students understand the music they study in classroom activities (n.d.).

Learning is made easier when concepts, skills, and information are presented in a sequential way that respects the way the brain is wired to learn. Sequencing instruction provides students with the readiness they need to ascend to the next level of learning and making use of the four vocabularies and W-P-W instruction can help teachers design a sequence.

Tonal and Rhythm Pattern Instruction

When children begin to speak, they do not pronounce individual letters. Instead, they repeat and mimic familiar whole words like "mama," "dada," etc. The learning of individual letters comes later in the speaking process. Similarly, when students learn to read, they learn to read whole words, e.g. "ball," "cat," or "cup;" the learning of individual letters comes later in the reading process.

If we carry this language learning comparison to music learning, as we have done several times, then the learning of individual pitches and durations is not the focus of teaching, but rather groups of pitches and groups of durations. Gordon calls these tonal patterns and rhythm patterns and writes that "Just as the word is the basic unit of meaning in language, so the pattern is the basic unit of meaning in music…An individual pitch or duration has only **possibilities** for meaning" (2012, p. 99). Taggart is even more emphatic:

> The audiation of tonal and rhythm patters is the cornerstone of music learning theory. Just as we derive meaning in language through the organization of words, in music we derive musical meaning through the organization of tonal patterns within a tonality, and rhythm patterns within a meter (2000, p. vii).

The Skill Learning Sequence

MLT considers tonal and rhythm patterns to be the building blocks of music and the teaching of patterns as the foundation for teaching students how to audiate. However, as

discussed in the previous section learning works best when done in a sequence and Gordon has devised a sequence of pattern instruction that comprises nine steps over two learning domains – the Skill Learning Sequence (2012, p. 94).

Discrimination Learning

The first domain is called discrimination learning and it provides the necessary readiness for the second domain, inference learning (p.95). In discrimination learning, the teacher provides students with the musical content, which the students learn by rote and by imitation. The teacher helps the students learn to label and categorize the content and then discriminate between various types of content. When students are ready, the teacher cannot teach them to make inferences, but can guide them towards making inferences about new content (p. 95).

The first step in discrimination learning is called Aural/Oral "because it involves interplay between the ear (aural) and the voice (oral)" (Grunow et al., 2021, p.26). At the Aural/Oral level students echo back tonal patterns in major and minor tonalities using a neutral syllable, such as "bum;" and rhythm patterns in duple and triple meter using a neutral syllable, such as "bah." Tonal patterns are sung arrhythmically and rhythm patterns are chanted without pitch. When taught in a classroom setting, patterns are first performed by the whole group and then by individuals. In instrumental music settings, after patterns are sung and chanted successfully, they may also be performed on instruments using various styles of articulation. Aural/Oral is the foundation for all higher levels of learning and is the all-important first step in learning to audiate (p. 27).

Eventually students have amassed such a large vocabulary of patterns that they will need names in order to categorize them. This occurs in the second step of discrimination learning, called Verbal Association. At the Verbal Association level, students sing and chant familiar tonal

patterns, but this time using tonal and rhythm solfege instead of neutral syllables (p.28). Gordon strongly advocates moveable DO with a LA-based minor for tonal solfege and a rhythm syllable system based on beat function where DU is always the macrobeat. The rationale for this system is well outside the scope of this paper, but persons interested in Gordon's reasoning as well as a thorough discussion of flaws he finds in other common systems are encouraged to read Chapter Four of *Learning Sequences in Music* (2012).

In addition to performing patterns with tonal and rhythm solfege, at the Verbal Association level, students are also given ways to classify patterns. They learn that a tonic pattern in major tonality is made up of combinations of DO-MI-SOL and a dominant pattern is made up of combinations of SOL-FA-RE-TI. They learn that minor tonality's tonic pattern is combinations of LA-DO-MI and dominant is MI-RE-TI-SI. They learn that when the microbeat is DU DE the pattern is in duple meter and when the microbeat is DU DA DI the pattern is in triple meter (Grunow et al., 2021, p. 28).

The third step in discrimination learning is called Partial Synthesis. At this level the teacher performs a *series* of tonal or rhythm patterns in both familiar and unfamiliar orders. Students listen to these series and are asked to identify the tonality of a tonal series or the meter of a rhythm series. In order to require students to audiate rather than memorize syllable schema, the teacher performs these series on neutral syllables, but students are encouraged to audiate them using the tonal and rhythm solfege. Partial Synthesis is the first time when students are beginning to make inferences, although in a scenario controlled by the teacher (Gordon, 2012, p. 111).

Reading music notation occurs at the fourth level of discrimination learning, Symbolic Association. In this level, students are shown what the patterns they have sung, chanted, labeled,

and strung together in sequences look like. Everything is connected to how the patterns sound and are audiated, so no letter names or duration names (quarter note, eighth note, etc) are taught, similar to how children learning to read language are not taught about parts of speech, verb conjugation, etc. when they are first learning to read (Grunow, et al., 2021, p. 28).

The final level of discrimination learning is called Composite Synthesis, an appropriate name since it combines all the skills learned so far. Students are given series of familiar tonal or rhythm patterns in familiar or unfamiliar order and are asked to perform them while simultaneously audiating and determining tonality or meter. The musicality of students who are able to read music notation this way:

> …stand(s) in stark contrast to the experiences of inappropriately taught students, who likely read and write notation by counting and reciting the names of notes, generally unaware of the tonality or meter of the music they are reading. Students taught according to the principles of music learning theory audiate, read, write, and perform with musical meaning (Grunow et al., 2021, p.28).

Inference Learning

Students who succeed at the Composite Symthesis level are ready to make inferences about new music and so the first step of inference learning is called Generalization. Generalization is where students are given unfamiliar patterns and are able to draw upon their experiences to figure out how to audiate them, perform them, and label their tonality and meter. They do this by recognizing familiar patterns that may be contained therein and by using those to identify and then audiate unfamiliar patterns. Generalization can occur at the Aural/Oral, Verbal Association, or Symbolic levels. When it occurs at the Symbolic level, this is a far more

sophisticated form of sight-reading than is done by students taught to count durations and identify lines and spaces (p.29).

The next step in inference learning is Creativity/Improvisation. At this point, having developed a large vocabulary of tonal and rhythm patterns, labeled them, strung them together in series, and used them to teach themselves new patterns, students are then able to combine their patterns in new and unique ways. This can be done freely, over the bass line of a familiar song, or over a progression such as twelve-bar blues. Gordon emphasizes that having a large vocabulary is a requirement for improvisation:

> Again, the larger students' vocabularies and the more varied music they have heard in terms of style, expression, and harmonic progressions, the better able they will be to choose appropriate tonal patterns and rhythm patterns from their "audiation dictionaries" that will contribute to artistry of music they are creating or improvising. (2012, p. 137).

Paradoxically, the last step in the Skill Learning Sequence is what is often the first step in most music curricula: Theoretical Understanding. At this level students are taught letter names of notes, names of durations, names of intervals, scales, etc. Gordon views Theoretical Understanding as a way of giving students an intellectual foundation for why they audiate what they audiate, but is very clear that he does not view music theory as an essential discipline, writing:

> music theory, as it is typically considered, is as necessary to the practical musician as is the theory of electricity to a competent electrician. Neither the musician or the electrician necessarily needs to use or know the information such theory provides" (p. 133).

The reason for this, Gordon speculates is because theorists concern themselves with what is notated rather than what is audiated. In other words, they put the sight before sound.

The Skill Learning Sequence can be intimidating and confusing at first glance, but put into practice, it is an elegant and logical way of developing students' pattern vocabularies and sequencing their skills with the ultimate goal of being independent, sophisticated musicians. Like any kind of teaching, students will typically need occasional reminders and remediation, i.e. "two steps forward, one step back" and of course due to differences in music aptitude some students will be better than others are skill development, but if our goal is to develop independent, strong musicians who can teach themselves, then the Skill Learning Sequence is an excellent research-based blueprint for achieving that.

Existing Applications for Instrumental Music

Having now looked at some of the main concepts in MLT, we will now turn our attention to existing applications of MLT to the teaching of instrumental music. Although MLT -based curricula for early childhood and elementary general music have gained more fame and widespread acceptance, it is important to remember that Gordon himself was an instrumentalist first. He held bachelor's and master's degrees in double bass performance from the Eastman School of Music, toured as the bassist for Gene Krupa's band, and tested much of his early research on instrumental music students in Iowa and Wisconsin (Gordon, 2006). Instrumental music definitely has a place at the MLT table.

Jump Right In: The Instrumental Series

The original, as well as the most comprehensive application of MLT to instrumental music is *Jump Right In: The Instrumental Series* (*JRI*), a comprehensive method for beginning recorder, woodwinds, brass, percussion, and strings. Originally published in 1987 and currently in its third edition, the series was written by Richard Grunow, Christopher Azzara, and Gordon himself, and with contributions by Michael Martin on the books for string instruments. To date,

it is the only beginning instrumental method book that takes an audiation-first approach to the teaching of musical instruments and contains several features that make it unique among beginning instrumental method books.

The opening sentence of the introduction to *JRI* reads "A music instrument is an extension of the mind and body" (Grunow et al., 2021, p. 1) and that statement sums up the approach contained in the series. Grunow writes when learning a musical instrument, students are actually learning two instruments: the audiation skills instrument and the executive skills instrument. The audiation skills instrument is the brain and audiation skills are the things discussed so far in this paper: singing, moving with beat competency, discerning between various tonalities and meters, learning rote songs and patterns, and others. The executive skills instrument is the one held in the hand and executive skills include things like embouchure, articulation, posture, hand position, fingerings, breath control, and more. Persons who have audiation skills but lack executive skills are not able to actualize their musical ideas on the instrument. Persons who have executive skills but lack audiation skills are doing little more than pushing buttons (p. 4).

JRI features a detailed series of lesson plans that balance the teaching of both skill sets. In a class period students might learn to sing a song and/or bass line by rote, learn to produce connected and separated styles of articulation on the instrument, learn the fingerings for a new pitch on the instrument, do a movement/coordination activity to kinesthetically experience beat competency, work on correct embouchure formation, chant rhythm patterns in duple meter at the Verbal Association level and then perform them on instruments, or any other number of activities that Grunow and his co-authors have devised. The salient point is that if the teacher

follows the lesson plans, their students will have a good balance of executive and audiation skills development introduced in a developmentally appropriate sequence.

Of the many features that distinguish *JRI* from other method books is that notation is not taught until much later than is typical in beginning instrumental music. All songs and patterns are taught by rote in class and are reinforced for at-home practice through the use of media files available for download on GIA Publication's website. Since no notation is used, no letter names are used for the pitches and their corresponding fingerings. Instead, fingerings are taught using moveable DO solfege based on the key and tonality. For example, in the key of B-flat major, the pitch traditionally called B-flat will be called "B-flat-DO," the pitch traditionally called C will be called "RE," the pitch A will be called "TI," and so on. This system emphasizes tonal function and relationships within a tonality, rather than lines and spaces on a staff. This also facilitates transposition, another key component of JRI. "Hot Crossed Buns" starts on MI regardless if the key is B-flat-DO or G-DO; likewise "Amazing Grace"starts on SOL regardless of key,

JRI is an impressive method book that manages to fully embrace MLT while also containing enough activities and supplemental materials to not alienate more traditional band and orchestra directors who may not be ready to abandon all of their traditional ways of teaching. Despite the fact that *JRI* is a method book for groups of students or large classes, usually playing heterogeneous instruments, any discussion of incorporating MLT into an applied bassoon curriculum should make extensive use of *JRI*.

Music Moves for Piano

In 2004 with cooperation from Gordon, pianist Marilyn Lowe created the *Music Moves for Piano* series, a comprehensive piano curriculum based on the precepts of MLT. Currently in its fourth edition, Lowe calls *Music Moves* an "audiation piano method" and writes that:

> *Music Moves for Piano* includes activities to teach audiation skills. This audiation-activity approach differs from the traditional approach of coaching pieces and teaching students how to decode the printed page (2018, p. vi).

Although Lowe doesn't use the same vocabulary as Grunow does in *JRI*, the concepts are similar. Though not called "audiation skills," Lowe's curriculum includes students singing before playing; establishing tonality and meter before singing or playing; moving to macrobeats and microbeats and audiating them while playing; audiating and labeling tonalities, meters, and patterns in the music they hear and play; and learning notation through audiation rather than decoding symbols. Neither does she use the term "executive skills," but her curriculum includes traditional piano concerns such as making good fingering choices; dynamics and articulation; efficient movement of the hands and fingers; and arm and large motor movement (p. vii).

Like *JRI*, *Music Moves* is laid out in a logical, sequential structure. Each lesson plan contains a blend of audiation and piano skill development including songs, games, patterns, movement activities, and creativity/improvisation activities. It also contains CDs of the patterns, rote songs, and bass lines learned during lessons so that students will be able to practice at home before notation is introduced. Though *Music Moves* is very much a method specifically for applied piano and much of it isn't directly applicable to the bassoon, Lowe is something of a pioneer, having created the first MLT-based method specifically for applied instruction. It is to be hoped that her work will inspire teachers of other instruments to do the same now that she has blazed the trail for us.

Private Lessons: A Manual for Teachers

Many teachers are introduced to Gordon's work and while they like it immensely and agree with it in principle, they are nervous about changing everything about their teaching and

completely "jumping right in," so to speak. In other words, they want to incorporate audiation-based activities into their applied lessons while still maintaining some traditional methods of instruction. Those persons have a great resource in Colleen Conway's *Private Music Lessons: A Manual for Teachers* (2019).

Conway's text is a comprehensive manual for applied lesson teachers, with sections on managing the business aspects of a private studio, navigating behavior and developmental issues with students of various ages, and maintaining good relationships with parents and band and orchestra teachers. However, the first five chapters of the book provides instruction and examples of how to incorporate audiation-based activities into applied lessons. Topics include the four vocabularies; the balance of teaching executive and audiation skills in lessons; incorporating movement and beat competency activities into lessons, based on the teachings of Rudolf Laban; rhythm pattern instruction with an extensive discussion on rhythm syllable systems; and the importance of singing in instrumental lessons, including rote songs, bass lines, and patterns.

In each of the chapters, Conway contains sample activities and exercises, which would be beneficial for persons not intimately familiar with MLT-based instrumental instruction such as *JRI* or *Music Moves.* Conway is also careful to not abandon more conventional content such as the importance of practicing scales, something conspicuously absent in both *JRI* and *Music Moves.* All in all, Conway's book is a valuable resource for those interested in adding MLT to their current curriculum, however it is a handbook with suggestions and examples, and not a method in and of itself. Applied lesson teachers would have to create many of their own activities, but Conway's book is a great starting point.

Conclusion

As mentioned in the introduction to this chapter, this is not meant to be a comprehensive bibliography of MLT or a complete summary of Gordon's research. Instead, it is meant to provide applied bassoon instructors and others with an introduction to the key topics of MLT in the hopes of stimulating interest and provoking thoughtful discussion on how MLT-based instruction differs from what is traditionally taught both in school music class and especially in the applied studio. It is my hope that this chapter has convinced the reader that the concepts of audiation, music aptitude, sequential instruction, and pattern instruction deserve a place in their studios and their curricula and that the existing applications of MLT to instrumental music show that it can be done.

CHAPTER III: EXAMPLES OF MLT-BASED SUPPLEMENTAL EXERCISES TO THE WEISSENBORN *PRACTICAL METHOD FOR BASSOON*

Having discussed some of the main concepts in MLT, I will now pivot our attention back to Weissenborn's *Practical Method* (1887/1995). As discussed in Chapter One, Weissenborn's text is a well-designed, comprehensive, sequential approach to the teaching of executive skills on the bassoon, yet is devoid of any kind of activities or techniques for the development of audiation skills. Rather than developing an entirely new curriculum, bassoon teachers familiar with Gordon's work can borrow activities from other MLT-based methods or create their own to supplement Weissenborn's *Method* and provide their students with parallel development in both sets of skills.

As discussed earlier, this section is not intended to be a comprehensive curriculum, but rather examples of activities that a bassoon teacher *might* develop. Teachers familiar with MLT are limited only by their creativity at developing activities and this chapter is meant to be a springboard rather than an end goal. Activities in this chapter will consist of rote songs and bass lines; movement activities, tonal and rhythm pattern instruction; and improvisation activities.

Rote Songs and Bass Lines

Singing simple songs and bass lines is a critical step in developing a student's tonal audiation skills and can be included as a component in bassoon lessons. Once a student has adequate executive skills on the bassoon, these songs can be transferred to the bassoon without the need for music notation – either by the student figuring it out by ear or by call-and-response patterns led by the teacher.

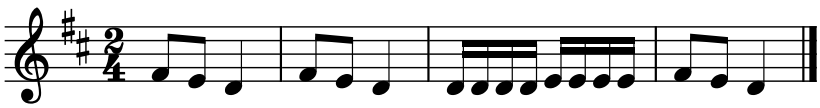
Young bassoonists need not be expected to sing in the same register or even the same key in which they will eventually perform (Conway, 2019, p. 41 & Grunow, et al., 2021, p. 197). The reasons for this are three-fold – first is that the goal of singing in instrumental lessons is not to develop pitch recognition but to "audiate tonal relationships" (Conway, 2019, p. 42); secondly, adolescent children are rarely able to sing in the bassoon's baritone and bass registers, requiring octave displacement; and thirdly, keys that are most comfortable for children to sing in, such as D and E-flat major, are not introduced in the Weissenborn text until much later. For example, the half-hole F-sharp necessary to perform in D major is not introduced until Lesson XII (Weissenborn, 1887/1995, p. 27). Thus, a student could learn to sing "Hot Crossed Buns" (Example 1) in E-flat major and begin learning to play it in C major as early as Lesson I.

Teachers can teach students rote songs in any number of ways, whether by the procedure discussed in Chapter Two or by simply breaking a song down into its component phrases and having the student echo them. Regardless, teachers should remember that these songs should be sung with expression and at musical tempos. Singing with expression, phrasing, and style makes it easier to perform these things on instruments (Conway, 2019, pp. 41-42).

Sample Activities

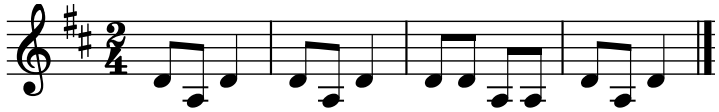
As an example of what may be done with a rote song within the Weissenborn text, we'll examine the song just discussed.

Example 1. "Hot Crossed Buns"



After establishing tonality, the teacher sings the song to the student and uses the chosen procedure to teach the student to sing it. When the student can comfortably sing it, the teacher can instruct the student to sing the song while the teacher sings the bass line (Example 2).

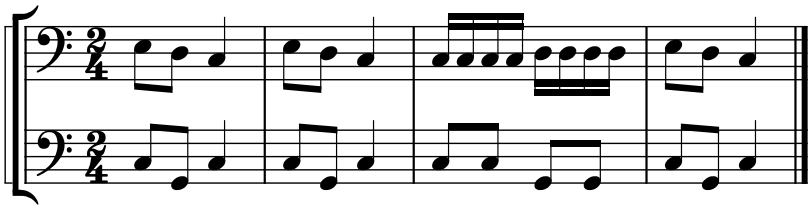
Example 2: "Hot Crossed Buns" Bass Line



At a subsequent lesson, after reinforcing the melody, the teacher can teach the student to sing the bass line as well.

Students who can independently sing melodies and bass lines will have the necessary readiness to learn to play them by ear on the bassoon (Example 3). Simple songs such as “Hot Crossed Buns” might not need instructions beyond “start on E and end on C,” whereas more complex songs might need more instruction. The important thing is that the student is truly learning to play the song by ear – without the aid of notation.

Example 3: "Hot Crossed Buns" in C Major



As the student progresses in the Weissenborn text and new notes are learned, the student can learn to play rote songs in multiple keys and even to change their tonalities. Lesson III introduces low A and so the student can perform “Hot Crossed Buns” in A minor. Lesson IV introduces open F, so the student can perform it in D minor. Lesson V introduces low G, so the student can perform it in G major, and so on (Weissenborn, 1887/1995, pp. 12-15).

Learning rote songs by ear can progress throughout the student's entire musical life and can include folk songs, movie music, popular songs, holiday songs, and is limited only by the student's audiation and desire to learn. Examples of appropriate songs can be found in MLT-based materials such as *Jump Right In: The Instrumental Series* (Grunow, et al., 2021), bassoon-focused materials such the *Blue Moon Bassoon Song Book* (Pierce, 2022); or a beginning instrumental course such as *Recorder Karate* (Philipak, 2002).

Movement Activities

Gordon's ideas about movement in music come from Rudolf Laban (1979) who wrote that movement could be described and analyzed in terms of four elements:

1. Flow: Free movement that goes across the beat
2. Weight: The strong or weak impacts of movement
3. Space: The direction and pathway of a specific movement
4. Time: Movements that relate to a beat and its qualities such as speed and consistency

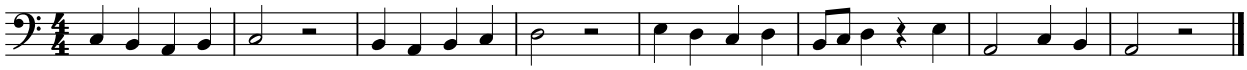
Experiencing all four of these kinesthetically is essential to developing rhythmic audiation skills, including keeping a steady beat and accurately performing rhythms over that steady beat. While many bassoon teachers might be nervous or uncomfortable incorporating movement activities into their lessons, Conway is adamant that movement activities "must be included" (2019, p. 14) in instrumental lessons.

Flow Activities

Many of the early exercises in the Weissenborn text are ideal for Flow activities because they are simple and uncomplicated, allowing the student to focus on movement while singing or

listening to the teacher perform them. For this activity, look at the second exercise of Lesson III (p. 12); (Example 4).

Example 4: Weissenborn Lesson III, #2

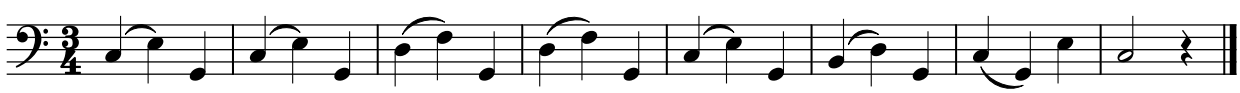


Instruct the student to make slow circular movements with their head, then shoulders, then arms, then hips/torso. While these movements are happening, the teacher can either perform the above excerpt on the bassoon or sing it at a slow tempo and with connected articulation. The student should join in singing when they feel comfortable doing so. By the end of this activity, student and teacher should be engaging in continuous, slow, full-body movement superimposed over the music. If students are self-conscious, the teacher should be encouraging, but not forceful – once the student observes the teacher doing these kinds of movements, they will become more willing to move along with them.

Weight Activities

Weight in movement ranges from heavy movements to light movements and the variations in between. The differences between heavy movements and light movements can be extremely useful in helping to develop a sense of meter by synchronizing heavy movements with the macrobeats and light movements with the microbeats, for example, in triple meter students might jump and snap their fingers to create a JUMP-snap-snap, JUMP-snap-snap effect. This would work well in the Weissenborn Lesson V exercise marked *Müssiges Walzertempo* (p. 16), shown in Example 5.

Example 5: Weissenborn Lesson V, #6



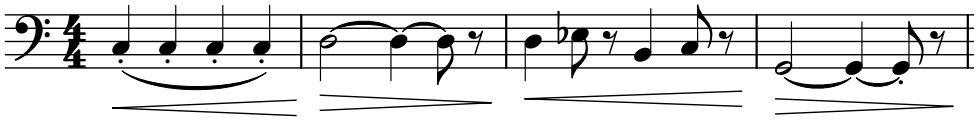
In this activity, student and teacher could sing the exercise or the teacher could perform it on bassoon while the student jumps on beat one of each measure and snaps fingerings on beats two and three.

Weight activities might also be used in later lessons of the Weissenborn when different styles of articulations are introduced. For example, the fifth exercise Lesson VIII (p. 21) uses tenuto, staccato, and accent markings. The teacher might instruct the student to jump on the accented notes, snap on the staccato notes, and bend the knees on the tenuto notes. These kinds of musical nuances can then be transferred to performance on the bassoon with a kinesthetic reinforcement, rather than just an abstract discussion.

Space Activities

Space activities may be problematic depending on the size of the teaching studio, but even in the smallest of rooms, students can still experience the difference between low space and high space. This difference can be used to help reinforce dynamics and phrasing, such as in Weissenborn Lesson IX (Example 6) when crescendos and diminuendos are introduced (p. 22).

Example 6: Weissenborn Lesson IX, #1, mm. 1-4



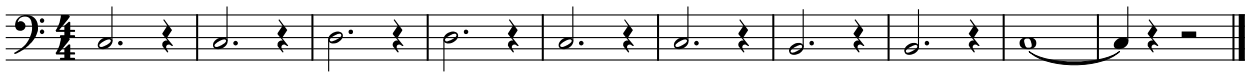
For this activity, teacher and student can sing the exercise beginning crouched on the ground in a ball. During the crescendos, student can slowly rise while extending arms and legs so that at the apex of the crescendo the student is in the largest space possible. During the diminuendos, the student retracts back into the crouched ball position. When the student then

performs this exercise on the bassoon, the experience of manipulating space can be transferred into dynamic contrast.

Time Activities

Many teachers will instruct students to tap their foot to provide beat reinforcement while performing. While this can be beneficial, there are ways to improve upon this common practice. Instructing students to tap their heels instead of toes adds the weight of the leg to the movement and helps prevent rushing. Additionally, while tapping macrobeats in the heels students can also pat microbeats on their shoulders or thighs. These two motions occurring simultaneously provides the framework upon which rhythm is then superimposed. This is especially helpful in the early lessons of the Weissenborn which feature longer durations, such as the one shown in Example 7.

Example 7: Weissenborn Lesson I, #1



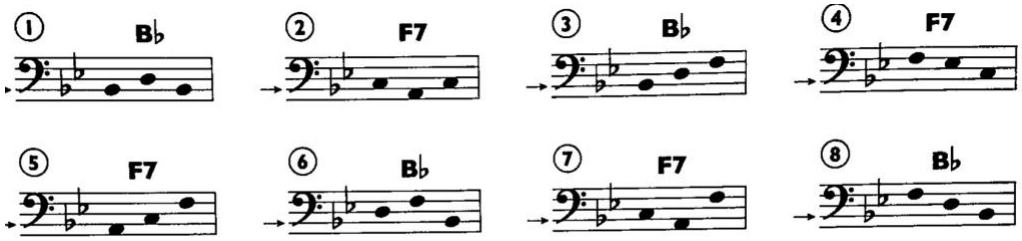
The Weissenborn text (p. 10) has dashes and the numbers 1-2-3-4 written over the measures, but as discussed in Chapter Two, this counting numbers approach over-intellectualizes rhythm and divorces it from a musical context. Rather students should move in the manner described above – macrobeats and microbeats simultaneously while singing the exercise along with the movements. Then when the exercise is performed on bassoon, students should audiate the movements previously performed. If the teacher still desires the student to count to four, this can still be done along with the movements.

Tonal and Rhythm Pattern Instruction

Tonal and rhythm patterns can be introduced immediately in the applied bassoon lesson first by singing/chanting on a neutral syllable, then by singing/chanting on a tonal/rhythm syllable, and then by playing, as discussed in the Chapter Two section on the Skill Learning Sequence.

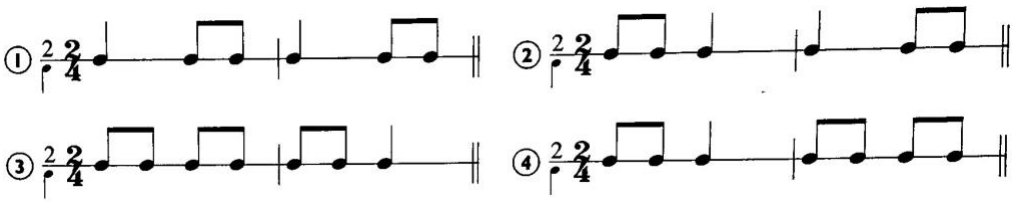
Just like with rote songs and bass lines, tonal patterns do not need to be sung in the same key on which they will be performed on the bassoon. Students should learn short patterns in Major and minor tonalities in tonic, dominant, and subdominant harmonies. Students should learn short rhythm patterns in duple and triple meter; first just macrobeats and microbeats, but then adding divisions and elongations. Teachers can make up their own patterns or use the ones provided in *Jump Right In: The Instrumental Series* (Grunow, et al. 2021). As shown in the examples below, it is important to note that tonal patterns should be sung arrhythmically (Example 8) and rhythm patterns should be chanted without pitch (Example 9).

Example 8: Sample Tonal Patterns



Note: Reprinted from Jump Right In: The Instrumental Series, bassoon book 1, p. 10

Example 9: Sample Rhythm Patterns



Note: Reprinted from Jump Right In: The Instrumental Series, bassoon book 1, p. 11

It's important to remember that learning tonal and rhythms patterns is a means to an end and not an end in and of itself. Having an extensive vocabulary of tonal and rhythm patterns helps students learn to differentiate between various tonalities and meters, recognize harmonic functions, and gives them an extensive vocabulary upon which to draw when improvising and creating their own music.

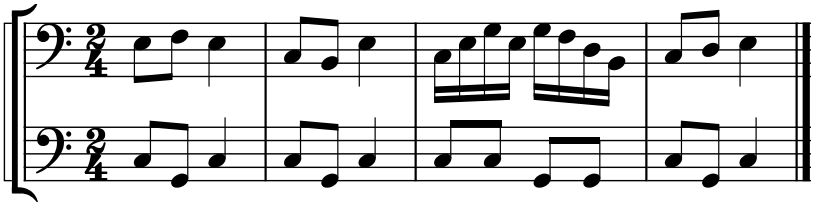
Improvisation Activities

Like most other concepts in MLT, improvisation is a sequence of skills that get progressively more complex as students learn and hone their skills. Thus, the earliest improvisation activities are relatively simple – variations on call-and-response. The teacher can say "I'm going to sing/play a three-pitch tonic pattern in Major tonality and I want you to echo back to me a different three-pitch tonic pattern in Major tonality." For rhythm the teacher might say "I'm going to chant/play a four-macrobeat long pattern in triple meter and I want you to echo back to me a different four-macrobeat long pattern in triple meter." The larger the student's pattern vocabulary, the more material they will have to draw from.

Improvisation activities can then be done over the bass lines to familiar songs. The bass line to "Hot Crossed Buns" consists only of tonic and dominant harmonies, so the student can

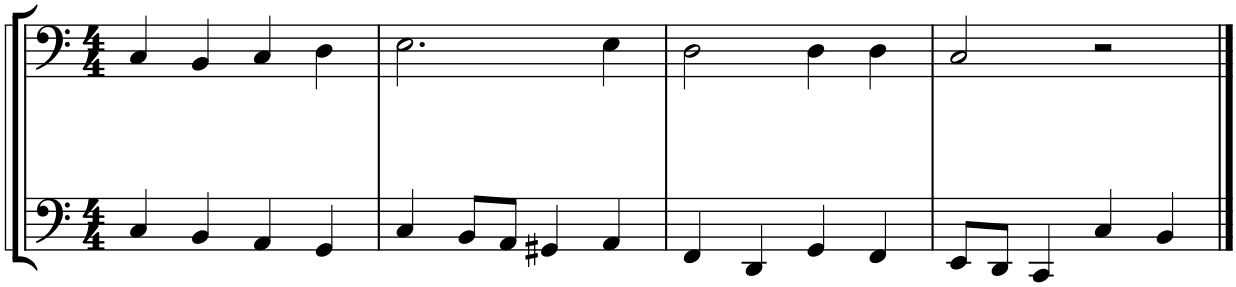
draw upon their pattern vocabulary to create a new song over a familiar bass line, as in Example 10:

Example 10: "Hot Crossed Buns" Bass Line and Improvisation



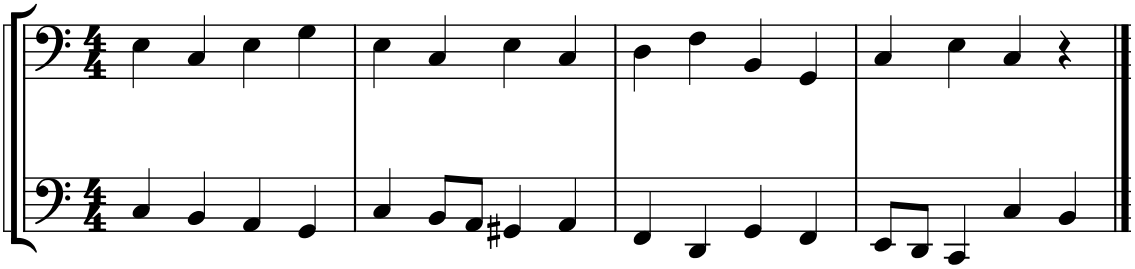
Similar activities can be done with the duets in the Weissenborn text. For example the duet in Lesson II (Examples 11, 12, and 13), despite its passing tone and chromatic alterations is a clear I-I-V-I progression for the first four measures.

Example 11: Weissenborn Lesson II Duet



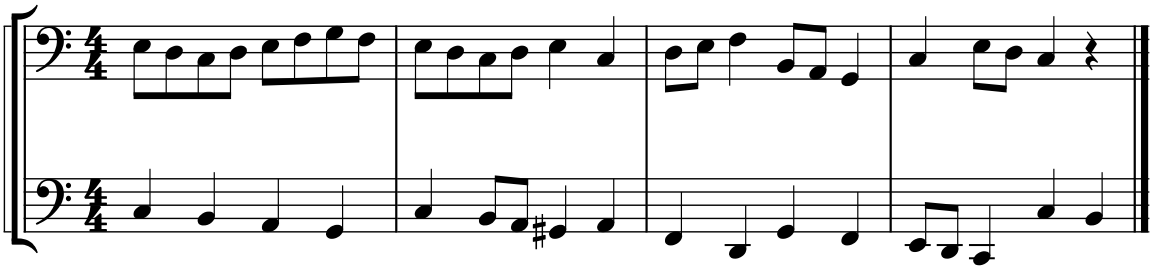
A sample improvisation might look like this:

Example 12: Weissenborn Lesson II Duet with Improvised Melody



Passing tones could be added later for increased sophistication:

Example 13:Weissenborn Lesson II Duet Improvised Melody with Passing Tones



Students who can improvise meaningful melodies that have appropriate melodic, harmonic, and rhythmic context have well-developed and sophisticated audiation skills. Students who can perform these melodies on the bassoon also possess well-developed and sophisticated executive skills. The ability to improvise is not a mystical quality that only certain jazz musicians possess, but one that can be learned by all persons if they have the readiness due to having been taught in a sequential way.

Conclusion

Existing MLT-based curricula such as the *Jump Right In* general music and instrumental music series (Taggart, et al, 2000; & Grunow, et al, 2021) are essentially attempts to seamlessly integrate Learning Sequence Activities into general and instrumental music classroom activities and that is what is also being proposed here. These simple activities are just some of the myriad ways in which Gordon's research can be applied to the applied bassoon curriculum.

None of these activities require a radical overhaul of the traditional bassoon lesson, nor do they require the teacher to go at it alone. Similar activities can be found within the existing MLT-based curricula and adapted to meet the needs of young bassoonists. Moreover, as MLT is a learning theory and not a curriculum, the possibilities for its adaptation are endless and limited

only by a teacher's willingness to be creative and break beyond the limits of traditional bassoon pedagogy

CHAPTER IV: CONCLUSION

Suggestions for Further Research

As mentioned in the introduction, the application of MLT to applied instrumental instruction is in its early stages and is an area rife with opportunities for aspiring researchers and authors. Bassoon pedagogy is a discipline containing methods and techniques that have never been subjected to the rigors of research.

Without appropriate resources, even curious bassoon teachers will have difficulty experimenting with changes in their teaching. A good first-step would be to expand the activities in Chapter Three into a full supplemental method book with MLT-based activities linked to the various lessons of the Weissenborn *Practical Method.* Teachers typically are not expected to create their own melodic etudes or scale studies, instead using pre-existing materials to develop their students' executive skills. They deserve the same resources for developing their students' audiation skills.

Eventually, this could lead to an entirely MLT-based curriculum for applied bassoon instruction, akin to *Music Moves for Piano* (Lowe, 2018). Such a curriculum would be used instead of Weissenborn or other traditional methods similar to how the Lowe text is meant to replace traditional piano texts or *Jump Right In: The Instrumental Series* (Grunow, et al., 2021) is meant to replace traditional beginning instrumental music texts.

Beyond just creating resources, empirical research studies need to be done to ensure that students' learning needs are being met by traditional approaches to bassoon teaching. One idea might be to examine the efficacy of various approaches to teaching. Two groups of bassoon students, controlled for age and music aptitude, could be taught using the Weissenborn *Practical Method* with one group receiving supplemental MLT-based instruction and the other not

receiving it. After a certain period of time, both groups of students could be evaluated on an valid music achievement test and scores compared. Such a study could provide data on whether supplemental MLT-based instruction was effective at improving student achievement or if it was not effective.

For the last half-century, the research and writings of Edwin Gordon and his intellectual descendants have contributed greatly to the knowledge base in the psychology of music teaching and learning. Applied bassoon teachers have the opportunity to greatly enhance their teaching by becoming familiar with audiation, music aptitude, sequential instruction, and the other salient concepts in Gordon's work. A bassoon pedagogy rooted in the natural music learning process and adjusted for individual differences may benefit bassoon students' learning and achievement and help ameliorate some of the traditional frustrations associated with learning the bassoon.

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