I would like to acknowledge everyone who played a role in supporting and advancing my academic endeavors in completing my thesis and throughout my Masters degree.

Firstly, I would like to extend my gratitude to my supervising professor, Dr. Bradley Almquist, for his guidance and support throughout this project and for introducing me to brain research. I would also like to thank my committee members, Dr. Trae Blanco and Professor Joan Riley, for providing insight throughout the process.

I would like to acknowledge my colleagues, especially Curtis Ervin, for being open to new ideas and allowing me to implement these strategies in our classrooms.

I would like to especially express gratitude for my students for inspiring me every day. Without my students, this project would not exist.

Lastly, but not least, I would like to thank my parents for their unwavering support. You both encourage me to go above and beyond in everything I do. Thank you for loving me unconditionally. I am also grateful for my friends that have endlessly heard about this project and supported me throughout my degree pursuit.

Most importantly, thanks be to God. Nothing would be possible without Him.
ABSTRACT

The purpose of this study is to review current band methodologies, specifically for the beginning band, and identify the current process of teaching music literacy. For beginning bands, music literacy instruction is a powerful tool music students use to be successful at sight-reading. It cannot be assumed that simply because students perform music on instruments, they also will achieve high ratings at sight-reading. Brain-compatible learning may offer a solution in addressing the issue with how beginning band students are taught to read music. Therefore, this study will propose a more effective method, applying the Music Learning Theory of Edwin Gordon to teaching music literacy using brain-compatible teaching strategies.
TABLE OF CONTENTS

Acknowledgements...........................................................................................................iii
Abstract.............................................................................................................................iv
Table of Contents..............................................................................................................v
List of Figures..................................................................................................................vi
Introduction.....................................................................................................................1
Chapter 1: What is Brain Compatible Learning?...............................................................10
Chapter 2: Current Methodologies: A Review...............................................................18
Chapter 3: A Music Learning Theory............................................................................29
Chapter 4: Conclusion and Discussion.......................................................................44
Bibliography....................................................................................................................55
LIST OF FIGURES

Figure 1: Sixteenth Note Patterns..............................................................19
Figure 2: Fragmented Scale.................................................................22
Figure 3: Rhythm Times.................................................................22
Figure 4: Intervals...............................................................24
Figure 5: Gordon Sequence............................................................31
Figure 6: Melodic Patterns..............................................................32
Figure 7: Dragon Slayer Melodic Patterns.................................................33
Figures 8-10: Gordon Rhythm Patterns......................................................35-36
Figures 11-12: Dragon Slayer Rhythm Patterns.......................................36
Figure 13: Concert Bb Scale; First Five Notes........................................38
Figure 14: Rhythmic Solfege............................................................39
Figure 15: Common Tonal Patterns....................................................40
Figure 16: Macrobeats and Microbeats..................................................41
Figure 17: Sequential Rhythm Patterns..................................................42
Figure 18: Whaley Rhythm Patterns.......................................................50
Introduction

Performers and music teachers can agree that there may be misconceptions about music literacy as understood by the general public. For example, music literacy is not present simply because a musical work is performed. Music literacy takes place when one hears what he or she sees and understands what he or she hears and sees in a musical context. Contrary to contemporary opinion, music is not necessarily a language. “Music is a literature.”¹ Therefore, one must learn to read music before truly performing music. Students need to develop an understanding of the sounds and rhythmic devices before music can ever be “spoken.” The purpose of this study is to review current band methodologies, specifically for the beginning band, and identify the current process of teaching music literacy. Finally, it will propose a more effective method of teaching music literacy using brain-compatible teaching strategies.

Students learn what reading music truly involves. There are a number of young bands that perform but do not actually read music. While adjudicating, the author has observed many students struggling with the sight-reading portion of an audition. The students may not feel confident because they do not possess the adequate tools to ensure success. Some students may simply stop trying when they do not understand something. They have no motivation to continue and feel defeated.

While educators have an increasing understanding of how the brain works, teaching has not changed to reflect this new knowledge. The old methodologies are not as effective. Today’s students are not the same students as they once were; they desire instant gratification and

immediate success. Brain-based learning and teaching may assist in developing music literacy in the students when such techniques are incorporated into the classroom.

Developing music literacy is very similar to developing language literacy. Before learning how to formulate ideas using language, the phonemes of language are learned. These language phonemes are learned through imitation in the earliest stages of life; by an infant imitating his/her parents, or a primary care-giver. As Suzuki points out, “The child is taught by constant repetition to utter its first sound, which is usually ‘mama, mama, mama’ and so forth.” Learning the musical phonemes, melodic and rhythmic patterns, maybe accomplished in a similar fashion. Many modern curricula do not encourage this type of learning. Teachers must meet assessment deadlines and are encouraged to earn distinguished ratings by their administrators. Nevertheless, the question remains: what are the student musicians actually learning in the rehearsal and from the performance? Resulting from ineffective instruction, beginning band students learn to repeat or imitate music rather than read and make music. Teachers diligently follow method books, making sure to get to the page with *Jingle Bells* by the Christmas Concert. Is this truly effective teaching and learning?

Students learn many tasks in Beginning Band: mental preparation for playing, the physical aspects of playing, learning a new written and aural language (music), and critical thinking, decision making, and execution. On the first day of Beginning Band, students will walk into the band room and, in most cases, not have an instrument to play. Frequently, at the beginning of school each fall, students and parents will attend instrument rental meetings to determine which instrument the student will study. Then they wait for the instruments to arrive

---

from the dealership and/or distributor. Some students may borrow school instruments if their families cannot afford to rent or purchase the instrument. This is especially true in schools with a significantly high number of students from low socioeconomic status. They may have to wait at least a month for their instruments to arrive.

What do band directors do with the time between the first day of school and the students receiving instruments? Typically, this is when students “learn to read music.” They learn the elements of music with directors assuming they are simply reviewing previously learned material. The lack of authentic music education in many elementary schools may make this unrealistic. Even if music is being taught, it may be taught by someone who is not certified to teach music. Students may learn the musical alphabet; to identify or name rhythmic durations of notes; definitions of melody, harmony, form, etc. This type of information does not fully prepare them for playing music in a band. The student should learn to audiate music preparing them with the skills to become musically literate.

Once all, or most, of the students receive their instruments, it is time to learn how to put the instruments together, as well as take them apart. The students must learn to clean and maintain their instruments in order to keep them in excellent working condition. Finally, they begin to learn how to produce appropriate sounds on their respective instruments. During the first rehearsals, teachers must teach each child how to play their individual instruments. For example, a flutist will first attempt to make a sound on just the head joint. The student will blow across the tone hole. A comparison may be made to blowing across the top of a glass bottle. However, it requires much more detailed attention regarding the facial muscles. A flutist will make an “oo” shape with the lips and blow across the tone hole, making sure their head/chin posture is correct. The student will practice this many times to ensure an appropriate tone comes
out of the head joint. Finally, the head joint will be put together with the rest of the flute and the student will do the same thing to make a sound. Every instrument has a unique embouchure, or the way the lips/facial muscles are shaped. These must be learned by the young performers. In addition, students must learn other physical techniques necessary to play an instrument such as body posture, both sitting and standing, breath management, and how to hold the instrument when playing.

Once beginning band students have learned many of the physical requirements it takes to play the instrument, they are ready to play their first song. There is still much to be learned before this can happen. For example, students must learn what their first note is in concert pitch. This means that while each instrument is playing the same sounding pitch, it is not necessarily the same note name. This is because of the way each instrument is constructed. The director/conductor must be sure that first note is being performed with the best tone quality possible. This takes time and practice. After the director determines that this has been achieved, the band may turn to their method book.

Method books are filled with short tunes and folk songs complete with various directions on each page. These are designed to teach various aspects of the different musical elements such as, rhythm, melody, harmony, tempo, form, dynamics, and timbre. The books begin by presenting one note at a time instead of patterns of notes. The students will learn the name of a single note and associate it with a fingering for that note. The method books assume that the students will acquire audiation (hearing what is seen and writing what is heard) skills through exposure to notation and music theory. In just a few short pages, *Jingle Bells* appears, as students are ready to play it by their November or December first performance. This Holiday

---

Concert will serve as the first semester summative assessment for most beginning band programs. From the first moment students walk in to the band room on the first day of beginning band to the December concert, students are expected to learn how to put their instruments together, perform with a characteristic tone quality, and learn how to play a variety songs, such as *Jingle Bells*, using the method book. Where does music literacy fit? How is music literacy taught? Or is music literacy being taught at all? How do teachers expect students to reach critical thinking, decision making, and higher order cognitive skills if they are not equipped with the tools to achieve this goal?

Many current method books use past paradigms and change the order of the content rather than adopt new research-based teaching methodologies. Very little time is spent teaching the basics of the musical elements, such as pitch and rhythm. For example, in method books such as, *Tradition of Excellence*\(^5\) or *Essential Elements*\(^6\), two pages are dedicated to posture and how to form an embouchure. Immediately following, students learn the fingerings for “Concert F.” However, the students are not intentionally taught the fundamentals of audiation. According to Gordon, audiation is the ability to hear what we see and write what we hear.\(^7\) It is an active response that “anticipates” in familiar music and “predicts” in unfamiliar music. Comparable to learning how to read, audiation provides the student with a step-by-step process for developing literacy in music. Initially, audiation is developed by listening to music. Through the sequential repetition of tonal and rhythmic patterns, the brain stores the patterns so that they can be recalled. This allows the brain to attach meaning to new experiences as it compares the new experience

with the existing patterns in long-term memory. Then students will begin to apply the patterns to reading music. The brain learns through patterns. Reading music opens the door to writing and recalling music, and eventually composing and improvising. For example, in English class, students frequently are asked to write essays or papers because it demonstrates an understanding of language and how it works. Music is very much the same. Once the students learn the rhythmic and tonal patterns, they may form their own musical ideas by creatively manipulating the patterns. In the process of music composition, the students attach additional meaning to the patterns and their use in performance.

Edwin Gordon offers a specific sequence for developing audiation skills. Audiation and skill development may begin with stimulus-response learning as identified by Robert Gagne, or “Aural/Oral” training as identified by Gordon. In either situation, a stimulus is provided by the teacher. This may be singing or chanting a tonal or rhythmic pattern on a neutral syllable. This pattern is then repeated by the student. The stimulus is momentarily retained, in the sensory register, and the response is an exact repetition of the pattern by the student. While this happens in many music classrooms, it is not always done intentionally. Imitating and audiating tonal and rhythm patterns must be an intentional act for it to be retained.

After students respond to several aural/oral stimuli, they may begin to put the patterns together into melodies or rhythms. This is when they learn how the patterns work and fit together to make music. This is also when the aural/oral patterns, first performed on a neutral syllable such as “bah” or “bum” are given symbolic notation. This process reflects discovery

---

learning. Presenting the musical sounds before the notation gives students a chance to explore music in its true aural essence. For the beginning band student, the sheer number of terms and symbols they encounter can become very confusing. If the academic goal is music literacy, learning the patterns of the music and reproducing music should be the focus of instruction. After the patterns are learned through aural/oral presentation and are observed in symbolic notation, the brain can begin to organize these patterns. Once the brain begins to recognize and organize the patterns, recalling them can become routine. As the brain recalls these patterns, both aurally and visually, it can begin to process and synthesize the patterns, discovering how they exist in relation to one another in the music. This is the final step in audiation, anticipating and predicting tonal and rhythm patterns. This is the essence of music literacy. Music literacy is achieved when one is able to anticipate and predict patterns in music. Music educators have the responsibility to teach students these tonal and rhythmic patterns so that students have a musical vocabulary to use when reading music.

While the teaching of patterns may be intentional by the teacher, often they are taught in long groups of notes or rhythms rather than as individual patterns. Most methods use a brain-friendly “chunking technique” in some fashion. Chunking may be compared to chaining because the separate patterns become linked together, like a chain, eventually leading to a concept, or for musicians, melodies and rhythms. Gagne notes that, “the chain…cannot be learned unless the individual is capable of performing the individual links.”

12 Ibid, 42.
the human brain to process more data in working memory.\textsuperscript{15} Working memory in adults can hold up to five items at a time. Many people mislabel this ability as multi-tasking.\textsuperscript{16} In actuality, humans can only focus on one task at a time. However, the working memory has the ability to switch-task, switching between up to five items almost instantaneously. In many method books, the chunking of patterns occurs very quickly. Once these patterns are repeated a few times, they are applied to the repertoire. When simple rhythm and tonal patterns are not applied through transfer, their application in multiple situations, not just a single song such as \textit{Hot Cross Buns}, the students will not be consistent in their reading skills. Often, rhythm and melody are taught piece-by-piece instead of identifying similar patterns that make up all music. Since many patterns, especially in the beginning band setting, are often repeated throughout several pieces of repertoire, this can build on the power of transfer. In addition to recognizing and performing the patterns, the performers may begin to anticipate what is coming next. Brain-based teaching produces effective learning.

Activities such as singing, buzzing, clapping, sizzling, etc. may be part of the rehearsal exercises in the method books. This contributes to the learning process the brain must go through when preparing to read music. Breaking down large melodies or rhythms into recognizable patterns when preparing to read music helps the brain attach meaning and sense to what it is seeing and hearing.\textsuperscript{1} In addition, it ensures that the student is proceeding through the process of audiation before attempting to read visually. In many method books, students may identify a note or rhythm and then hope for the best in its performance because they do not know how it should

sound. There is no audiation because the process by which a musical symbol becomes sound in the mind, has not been taught. There is no aural recognition of the patterns. Brain-compatible learning may offer a solution in addressing the issue with how beginning band students are taught to read music.
Chapter 1

What Is Brain-Compatible Learning?

“Everything you do uses your brain, and everything at school involves students’ brains. It’s the most relevant understanding for educators to have right now”.¹ Brain-based education is the use of teaching strategies based on principles from neuroscience. Teachers should understand how the brain works before they can begin to teach using brain-compatible strategies. It is important know how each part of the brain functions and how they relate to each other. For example, a great deal of music is processed through Broca’s Area (a language processing area) and the cerebellum (the area that contributes to coordination, precision and timing of movement).

One important thing to know is how a neural network is developed. The brain is filled with neurons, the cell that is responsible for transmitting neural impulses. Each neuron includes a cell body with a thread-like extension called an axon. The axon transmits an electrical impulse away from the neuron cell body to the axon terminal button. The space between the axon terminal button and the dendrites on the next cell body is called a synapse. Dendrites are short branched extensions on the cell body that receive the neural impulse chemically from the axon. The chemicals that transmit the impulse across the synapse are called neurotransmitters. When a stimulus takes place, the neuron sends specific neurotransmitters from the axon terminal button across the synapse to receptor sites on the dendrites of the next neuron. Long-Term Potentiation is when the related neurons in a network become primed for stimulation through the neurochemicals released in rehearsal or through repetition. Through repetition, the neurons develop an efficient pattern of firing in tandem, making a network. The important work of rehearsal, repetition, must be employed by teachers in order for the students to effectively and

---

efficiently learn. The more teachers know about the brain, the more effective their teaching can be.

Every brain is unique and brains are not built for formal instruction. Jensen notes, “Our old way of schooling is fading fast as our understanding of the brain increases.”2 The brain has its own rhythms and, depending on the environment, those rhythms can be interrupted and learning may not take place. How one interacts with the environment strongly influences how the memory pathways are formed affecting learning. When considering Maslow’s Hierarchy of Needs, one may observe the influence the environment has on how children learn.3 If a student is lacking in basic physical needs, such as food and shelter, he or she will not be thinking about with learning. They are more concerned with their own survival. Stress affects students’ learning. This why a safe and secure environment is essential for all students to begin the learning process. Students need to feel valued and important. A student will not reach higher levels of learning, self-actualization, or become creative in the classroom if basic needs are not met. Considerations of these realities are a part of the brain-based approach. While a brain-based approach to teaching is not an exact science, it offers a fresh look at teacher decision-making in the teaching-learning process.

A fundamental principle that teachers need to appreciate about brain-compatible learning is that the brain learns in patterns. This is why chunking is fundamental in the teaching and learning process. Just as retail stores have special areas for certain products, the brain has

---
special places for specific memories. Teachers must recognize that short-term, long-term, and working memory are not the actual places where memories are stored, but are systems for processing information. These systems lead to where the actual memories are stored. Sprenger notes that there are several memory lanes or pathways. These include the episodic memory, the where and when something happened; semantic memory, written or spoken words; emotional memory, this memory system takes precedence over any other kind of memory; procedural memory, the how to or muscle memory; and automatic memory, also known as a conditioned response. The working memory occurs in the prefrontal cortex while the hippocampus holds the episodic and semantic memory. The emotional memory lies within the amygdala, housed in the limbic system. Finally, the cerebellum maintains the procedural and automatic memory lanes.

Experience changes the way connections are made within the brain. Everything begins with sensory input from the environment. Gordon observes that all learning begins with the ear. Sensory information from the environment enters the brain where the thalamus makes a determination as to where it should be sent for additional processing. All sensory information, with the exception of smell, is processed initially by the thalamus. If the sensory experience is brief and happens only once or twice, it may be let go or sent to short-term memory. Items in the short-term memory are held for 15 to 30 seconds. When learning something new, teachers should work to engage as many of the senses as possible so that the information can be “tagged” and sent to working memory. Working memory allows for the brain to consciously process information. Items in working memory have a better chance of reaching long-term memory.

---

5 Ibid, 46.
6 Ibid, 52-53.
However, this is not guaranteed. The more meaningful the information, the more likely it will be stored in long-term memory. The brain is always seeking meaning.\(^8\)

According to Sprenger, “the only evidence of learning we have is memory.” \(^9\) Since retention, memory, is an important part of learning, it is necessary for teachers to understand how the brain retains information in long-term memory. Sousa observes that in addition to meaning, the brain seeks to make sense of the new information. \(^10\) When new information enters the working memory, after being sorted by the thalamus, the hippocampus immediately begins to compare the patterns of the new information with those stored in long-term memory. If the brain perceives that there is some relationship between the patterns in the new information and those of previously learned material, then it fits— it makes sense. Likewise, the brain will attempt to attach meaning to the new information. This is when the brain seeks to determine if there is relevance for the learner. If the new information is relevant to the learner, the brain attaches meaning to the new item. Learning and retention are strongest when the brain perceives that the new information both makes sense and has meaning.

Learning should engage multiple memory pathways. Teaching must go beyond simply using words, the semantic memory, to teach content. Some learners appear to forget a great deal of what is taught. The real problem may be that teachers rely too heavily on a singular memory system. According to Jensen, “We may have accidentally created generations of ‘slow’ learners who easily forget, and through no fault of their own.” \(^11\) Attempting to rely on a singular memory system or a singular experience for retention almost ensures the information never will be


\(^9\) Ibid, 46.


retained. The more memory pathways that can be engaged during the learning process, the more likely information will be retained. Sousa observed that the greater the connections that are made, the more understanding and meaning the learner can attach to the new learning. Teaching to multiple learning styles or preferences, such as aural, visual, and kinesthetic, will ensure that students are activating many memory pathways. Using learning activities that engage multiple learning styles also encourages attentiveness for all students. Some students may perceive a difficult task as a challenge, while others perceive it to be something they will never understand. All brains are unique. If multiple learning styles are not experienced within a teaching/learning event, some students may simply not be able to comprehend because of how few of the memory pathways are accessed.

Another fundamental principle of memory development is that emotions guide learning. According to Hardiman, “Setting the emotional climate in the classroom may be the most important function that teachers perform each day.” An issue that teachers will have to address with all students is self-concept. Self-concept lies deep within the cognitive belief system, which is the total construct of how a student perceives the world and their place in it. Self-concept is shaped by all of a students’ past experiences. It describes the way a student views him/herself in relation to the world around them. If a student has a negative self-concept when it comes to learning, retaining any information will prove to be difficult. When emotions are linked to a memory for a student in a particular subject, the brain will instantly decide how engaged the student will become with the new content.

---

When a stimulus occurs, the amygdala, which controls emotion, checks with the hippocampus, the memory center. If the stimulus is not presented in a positive way and the brain perceives threat or risk, it may enter the flight or fight mode. When the brain becomes stressed it is less likely to remember the information. The hippocampus will check with prior experiences stored in long-term memory to determine if the new information is recognized or if it is new. If the pattern recognized, the neural network will be strengthened. If the information is new, a new network may begin to form.

The brain includes motor, social, emotional, and cognitive domains. These areas are strongly related to each other. Each domain is influenced by the development in the others. Neural networks are being constantly created in the earliest stages of life. When children learn, their brains change in structure and chemistry. This is called neural plasticity. While plasticity is most malleable up to age ten, it is a lifelong process. “Plasticity is the link between nature and nurture.”15 Exploring plasticity, Hardiman16 cites a study conducted by Neuroscientist Marian Diamond. Diamond investigated changes in the structure of nerve cells in the cerebral cortex of rats when they were exposed to two different environments. She discovered that rats living in an enriched environment developed a thicker cerebral cortex when compared to the ones living in an impoverished environment, who showed a thinning of the cortex. Diamond’s study demonstrates that the cortex grows through experience.3 The rats that lived in an enriched environment had an overall greater experience because there were many opportunities for the rats to interact with objects such as ladders, wheels, and platforms. The impoverished rats had no opportunity for such interactions. The quality of experience presented to students in the

3 Ibid, 14.
classroom significantly affects the learning outcome. Enriched environments encourage dendritic growth. The experiences that children encounter during early childhood and elementary school must be intentional in order to provide the best enriched, positive experience for the child’s learning process.

The brain develops from back to front. This is why children begin learning with motor and sensory skills. One of the first areas to develop is the limbic system, the emotional memory. The cerebellum is one of the first memory storage areas to be accessed because it is linked with automatic memory. Working memory is developed later because its processing area is in the prefrontal cortex, located at the front of the brain. It is not until the frontal lobe makes enough connections with the remainder of the brain that higher-level thinking takes place. This is why emotion highly influences learning, especially at younger ages. Children may not be able to make higher-level decisions by thinking through them because there may not be emotional content encoded; the brain needs sentiment. Brain development occurs in a relatively orderly sequence and proceeds at varying rates from child to child, as well as unevenly within different areas of each child’s functioning. Learning should include developmentally appropriate activities based on how the brain learns at each age. Abilities, skills, and knowledge will build on those that were acquired previously. One cannot assume that simply because students are a certain age, they have experienced the correct sequence of learning activities necessary to acquire the knowledge needed to perform certain tasks. For example, if a student has not practiced various rhythmic patterns including quarter and eighth notes, that student may not be able to perform them when attempting to read from music notation. The best music curriculum is

---

one that provides developmentally appropriate activities in a spiral-like fashion. Music teaching and learning should be on a developmental continuum. It should be sequential, presenting new information and skills by building on what the students already have learned. What is learned in the beginning becomes the building blocks of future achievement. Bruner notes that, “The more fundamental or basic the idea he has learned, almost by definition, the greater will be its breadth of applicability to new problems.”

Building the foundation and practicing the fundamental techniques of music is imperative to music literacy. Without a foundational understanding of music principles, applying these skills and this knowledge to music reading will never take place.

Music-making contributes to the development of essential cognitive systems, including reasoning, creativity, thinking, decision making, and problem solving. It activates and develops in the areas in the brain most involved with mood, social skills, motivational development, cultural awareness, self-discipline, personal management, as well as aesthetic appreciation. Music also strengthens the ability to perceive sensory information and act on it. Music can change the brain. Making music activates multiple memory pathways, explicitly and implicitly, and can dramatically improve changes for retention and transfer. In essence, music teaching may be easily adapted to brain-based learning. Keeping a holistic approach to the brain is integral to the brain-based learning process because no part of the brain acts independently. By making oneself aware of brain biology and brain development, teachers can be more prepared to teach the way students’ brains learn.

---

21 Ibid, 40.
Chapter Two

Current Methodologies: A Review

Through the examination of various method books, focused mainly on beginning band instruction, the author has observed that many are effective at teaching fundamental playing techniques on the individual instruments. However, the information is not necessarily presented in the most brain-friendly manner. As Edwin Gordon notes, “Traditional beginning instrumental books emphasize technical skill at the expense of audiation skill.” For this study, several standard method book series used to teach beginning band were selected, examining their approach to teaching music literacy.

According to G. C. Yaus, the purpose of the 101 Rhythmic Rest Patterns method is to assist the student with learning to count rest patterns. He suggests that it is easy for one to detect note value errors. However, it is more challenging for an instructor to determine exactly where a mistake was made during a rest. In the book all of the rhythms are written in unison. This method encourages the students to count aloud during rest patterns. The rest patterns become progressively more difficult, beginning at an elementary level. Quarter rests are introduced first. It also presents the whole rest with the counting numbers above it. The next unit of rhythm includes eighth rests, followed by dotted rhythms. The students are shown triplets and finally sixteenth notes and rests. Initially the students learn to read in 4/4, 2/4, and 3/4 meters. Later 6/8 and other compound meter signatures are introduced. The final meter presented is alla breve or “cut time.” The remainder of the book includes advanced studies designed to practice and integrate all of these skills. Since everything is in unison, there is no need for fingerings or

---

note changes. This helps to keep the focus on the rhythm. The entire book uses the concert F, Bb, and Eb keys. There are no special technical difficulties or expression marks. All of the emphasis is intended to be on rhythm.

This method book presents the rhythmic information via chunking. This allows the brain to focus on a single concept. However, the patterns are not presented sequentially. A proper sequence would lead students to discover how the patterns may be subdivided to make other patterns. All complex rhythms stem from a simple rhythmic pattern. For example, students may struggle with various groupings of sixteenth notes. Yet all patterns of sixteenth notes are derived from four sixteenth notes beamed together. When a student understands the concept of the four sixteenth notes beamed together, it may be easier for them to comprehend how the other sixteenth note patterns work.

In figure 1, the first measure of sixteenth notes may be counted as 1-e-&-a. The second measure of sixteenth notes should be counted as 1- &a because the “e” subdivision is now a part of the eighth note. In the third pattern, the “e” subdivision is divided again, and that grouping would be counted 1e & because the “a” subdivision is included in the eighth note on the “&” beat. The fourth measure would be counted as 1- e-a.

Figure 1

When the student understands how the beats are subdivided and that the number of the beat, the “e,” the “&,” and the “a” subdivisions are always in the same location as they were in the
original set of sixteenth notes, this may readily be transferred to all groupings of sixteenth note rhythms.

The Yaus method text is intended for use in the elementary grades. However, there is no preparation or explanation of how basic rhythmic note values, such as whole, quarter, and half notes, relate to one another. Students must have prior knowledge before this method may be taught. The brain will be able to attach meaning and relevance to the continuous spiral of information by being able to discern how the various patterns fit into the whole concept of rhythm. In this method, the dotted eighth-sixteenth note pattern is introduced before the sixteenth note. It is difficult to understand how a dotted eighth-sixteenth pattern works if the student has not previously learned the rhythmic function of four sixteenth notes beamed together. In addition, a triplet, which is a borrowed pattern from compound meter, should be introduced later. The foreword to the book states that the short exercises are intended to be repeated at least five to ten times or more. This meets the brain’s need of rehearsal. However, there is a significant difference between rote and elaborative rehearsal. Simply repeating the patterns is not enough for them to be learned and applied thoroughly. Repetition of patterns must be intentional with effective feedback and immediate application to music.

The next method book examined is Bruce Pearson and Ryan Nowlin’s Tradition of Excellence: A Comprehensive Band Method (2016). This book begins by focusing its rhythmic study on whole notes and whole rests. It illustrates how to count the rhythms that are included on each page. It includes an option for students to write in other counting syllables. It also explains what the 4/4, or common time, meter signature means and offers a definition for the whole note

---

and whole rest. It also illustrates a conducting pattern for 4/4 meter. The book follows the same procedure for each new unit of rhythm introduced beginning with the whole note, followed by the half and the quarter note. It is not until much later in the book that eighth notes are introduced. These rhythms are reinforced with various exercises. Slurs and ties are introduced as well. Dotted quarter notes are presented with an illustration of how to keep a subdivision going on a second line as the rhythm is played on the top line. Syncopation is presented with rhythmic subdivision being encouraged. For several of the rhythmic patterns, the book includes additional exercises in an appendix.

With regard to melody, the book begins with an individual instrument page, woodwind/brass/percussion page, and a full band page for similar exercises. The first thirty-five exercises are in C major for each instrument. It does not include concert keys. On exercise twenty-seven, a key signature is introduced. Only three keys are used throughout the book: concert Bb, F, and Eb. Accidentals are introduced as well as the natural sign. However, the flat and sharp signs are not introduced together. Sharps and flats are shown depending on the key signature for each instrument. The first scale, concert F, is not introduced until exercise eighty-nine. Because of the range, the scale is fragmented. This does not allow the student to hear or see the scale as it actually exists. Figure 2 illustrates how the scale is fragmented.  

---

This is one reason why the concert Bb major scale is normally introduced first. Despite the fragmentation of the scale, a student must learn how the pattern of a major scale sounds in order to perform it accurately. This also helps the student learn to detect errors when performing any major scale, despite range or technical difficulties. Because of its sequencing, this method is somewhat brain-friendly.

The rhythmic portion of the book is the most brain-friendly. It presents rhythmic patterns in an orderly sequence and offers the opportunity for rehearsal of those particular rhythms. It includes occasional “Rhythm Times”, such as in figure 3⁶.

In this example, the half note tied to a quarter note is presented before the dotted half note. Both notations have the same time value. This is an effective way to introduce dotted rhythms. The “Rhythm Times” would be better if they occurred more frequently and included several variations in the patterns using the basic units of rhythm. It is up to the instructor when teaching the exercises to separate rhythm and melody.

The melodic section of the book does present some other challenges, particularly with the actual sight-reading exercises. Most of the sight-reading exercises are in a different key than the

---

other exercises on the same page. For example, on one page, concert F major is highlighted. On the same page, the first scale is introduced. However, the two exercises in the Sight-Reading Challenge, use the concert Bb Blues scale. This is an entirely different scale and sounds nothing like what the students have experienced in the lesson. The melodic sequencing is significantly interrupted. Also, this book does not introduce sight-singing. There are no exercises that ask the students to sing. It has a lot of little reminders about technique, with exercises throughout the book, and music history. There is little to no instruction on how to audiate the exercises before they are played on the instruments.

Tim Lautzenheiser’s *Essential Elements 2000: A Comprehensive Band Method, Book 1* (2004) begins with a mixture of whole notes, quarter notes, and quarter rests. It quickly progresses to the half note, half rest, and whole rest. Early in the book, students are encouraged to count the eighth notes as a metric subdivision under the rhythm being performed. Although the first rhythmic duration is the quarter note, its subdivision into eighth notes requires that eighth notes be introduced earlier. Ties and dotted rhythms are quickly added. It also includes articulations, such as accents. Additional rhythm studies are available in the back of the book. The relationship between a tie and dotted rhythm is sequenced quite well. The melodic section of the book also progresses quickly. Before key signatures are introduced the book uses accidentals. It begins with concert Bb and all the following exercises are in concert Bb. Concert Eb is introduced, but there are not as many exercises involving this key. Then exercises using concert Bb and Eb are intermixed. Finally, concert F is presented. Again, fewer exercises are included than those in concert Bb. The natural sign is introduced at the same time as concert F. These keys are not presented in scalar patterns, but with a song. Interval studies are not

---

introduced until much later. Figure 4 illustrates how intervals are introduced in this method book.\(^8\)

Figure 4

(Each interval is between the first and last pitch of each section):

\[
\begin{align*}
&\text{2}^{\text{nd}} \\
&\text{3}^{\text{rd}} \\
&\text{4}^{\text{th}} \\
&\text{5}^{\text{th}} \\
&\text{6}^{\text{th}} \\
&\text{7}^{\text{th}} \\
&\text{8}^{\text{th}}
\end{align*}
\]

It is important to note that the intervals are presented only visually. There is nothing indicating that the study of intervals should include aural presentation. This is precisely how they should be presented initially. The first scale is introduced as concert Bb major. It includes octave leaps and stepwise scales. The next exercise presents chords and arpeggios. While these are important concepts, they are not presented in an appropriate sequential order. They are sequenced by technical difficulty, without the intention to teach the student to audiate. Some of the technical difficulties that student may experience could potentially be eliminated if the students are audiating correctly.

There is a substantial amount of time spent on exercises in concert Bb, with not as many in Eb or F. If interval study takes place before studying keys, it may not be as difficult for the student to understand pitch relationships despite changes in key. The opportunity for rehearsal in

---

all keys will help develop performance technique for each key. One may argue that beginning band students need a singular focus on scalar exercises in concert Bb major. However, unless a director intends to perform music exclusively in concert Bb, the students must have more rehearsal in other standard keys appropriate for Beginning Band. The earlier the students learn the basic tonal patterns, the easier it will be to perform in those keys. In addition, when students understand intervallic relationships between pitches within a major scale, the tonal patterns in concert Bb, Eb, and F will not be difficult to master. Then, students may focus their attention on technical issues and will not need to be concerned with how the step-wise patterns should sound. For example, woodwind players will need to be concerned about fingerings that require ring and pinky finger movement. This can affect balance while holding the instrument, changing sound production. If students do not already know how particular pitches or scalar patterns sound, they may not be able to detect sound production errors.

The rhythmic portion of this book is sequenced well for teaching students to independently maintain a steady beat. Unless the instructor provides a significant amount of repetition for each exercise, there is not much time to consolidate the student understanding of the specific rhythmic patterns.

Finally, the author reviewed Bruce Pearson’s *Standard of Excellence: Comprehensive Band Method, Book 2*. This book is often used to help review concepts learned through the first year of band and to continue the development of these concepts, ideally, as a spiral curriculum. Because this is Book Two, it begins with the rhythmic concept of syncopation. Underneath the rhythms to be performed, including changes in pitch, there is a line of subdivision for the students to clap. There is much more detailed instruction in this book on how to count rhythms

---

with rests, particularly eighth rests. *Alla breve* is introduced quickly. Sixteenth notes are introduced followed by eighth and sixteenth note combinations. It is interesting to note that compound meter is introduced prior to sixteenth notes. However, there are only two exercises in 6/8. Later the eighth note triplet is presented. The rhythm studies in the back of the book use both simple and compound meters, including the 3/8 meter signature. When the 3/8 meter signature is introduced, the first exercise asks the students to compose. It visually compares 3/8 to 3/4, and asks the students to compose a rhythm in 3/4. Then they are asked to rewrite the composition in 3/8. Since the students have never performed in 3/8, this does not follow sequentially. The students have not rehearsed nor heard the patterns of 3/8 meter. Students may use the remainder of the page as a reference while completing the composition assignment. The first exercise following the composition project is a duet written in a similar fashion as the composition exercise (the top line being in 3/4 and the bottom being in 3/8). In reality, this is simply copying the same part in a different meter. While composition is a national standard, it must be done in the proper sequence.

Melodically, the book begins with a review of concert Bb, Eb, and F. Each page includes the scale, arpeggio, and chords, a scalar exercise, as well as a short piece in the respective key. The natural and harmonic minor scales are presented. There is no instruction pointing out the relationship between a major and its relative minor scale, such as concert Bb major and concert g minor. It is up to the instructor to make sure this connection takes place. The exercises before the introduction of the minor scale are in the key of Bb major. Next, the concert Ab Scale is presented with the same process as the review of keys used in Book One. Chromatic alterations are introduced with the full chromatic scale following. The c natural and harmonic minor scales are also presented. The remainder of the exercises in the book use these keys.
This book is the closest example of appropriate sequencing of musical information. However, some of the content at the beginning, such as the interval study, may be presented earlier (as in Book One) because the intervals are used to build patterns in music. Understanding intervals helps the students audiate music. The most questionable sequencing occurs when the 6/8 meter and triplets are introduced. These are considered “borrowed patterns,” patterns originating in one meter signature and used in another time signature to create rhythmic variety. They may be taught closer together in the sequence. More exercises in 6/8 would be helpful in order to learn and practice the patterns.

The book has a split focus right from the beginning. Initial instruction should emphasize building pattern knowledge with accuracy in rhythm and melody. Then the students can focus on the techniques of playing an instrument. In this method book there is a significant amount of “wide learning” rather than “deep learning.” Wide learning incorporates many different experiences, but each experience is very brief. Deep learning incorporates fewer experiences that are learned with more detail and typically performed with more accuracy. Over time, wide learning will take place. In this method book, too much information is presented to the students on each page. Instead, each page, or group of pages, should focus on a single concept, or at most two, with exercises for rehearsal. This reinforces deeper learning. This will ensure that the student receives adequate rehearsal on the particular concept, creating a deeper understanding and meaningful learning experience.

Using a spiral curriculum is an efficient way of learning music. Intellectual development is a relatively orderly sequence, according to Sprenger. The way we learn reflects this as well. Bruner demonstrates that when fundamental concepts are used periodically to gain additional

---

knowledge in a field, instruction in the respective areas should begin “as intellectually honestly and as early as possible.” Knowledge builds upon knowledge, spiraling through the particular subject. Often teachers attempt to teach music theory without leading students to listen to and perform music with understanding. This is similar to teaching grammar before students learn to understand and speak a language. If method books provided a checklist at the beginning of each page, based on a spiral curriculum, it would help lead the students through a thought process each time they play. This ensures they have a model of appropriate sound through audiation before actually performing. Music Learning Theory offers a specific sequence for achieving music literacy, beginning with the Aural/Oral experience.

There is a significant need for more method books, based on research, using brain-friendly teaching and learning. Given what is now known about how the brain learns, new ways of teaching music literacy must be developed.

---


Chapter Three

A Music Learning Theory

Music Learning Theory offers a research-based explanation of how music is learned. Edwin Gordon observes, “Music learning theory comprises and combines knowledge of audiation, sequential music learning, and music aptitude.”¹ He includes brain-based teaching strategies in his Jump Right In Music Curriculum.² The essence of the curriculum is that music is comprised of rhythmic and melodic patterns and that they should be taught prior to experiencing them in the music through reading. He suggests that these patterns be taught in a specific sequence. This sequence may be compared to Gagne’s eight different stages of learning.³ The first level of Music Learning Theory is discrimination learning. Here the students are taught skills, content, and patterns. Similar to language acquisition, students first learn the musical vocabulary by imitating the tonal and rhythmic patterns they hear. The oral/aural stage is simply the imitation of patterns using a neutral syllable such as “bum.” There is no visual representation or naming of the patterns using solfege or numbers. After rehearsing the sequence of perception, audiation, and imitation, the students are ready for verbal association. Next the patterns are associated with names, such as pitch and rhythm solfege syllables, note/duration names or numbers. Once students have begun to master the association between the patterns and the syllables, the partial synthesis stage begins. The teacher sings a pattern on a neutral syllable and the students repeat the pattern using solfege or counting numbers. Now the students are ready to apply these patterns to music, establishing relationships between patterns.

² Edwin Gordon, Jump Right In. (Chicago, IL: GIA, 1984).
Jump Right In includes songs that use the patterns allowing the students to observe and perform them in the context of music making. Too often music teachers plan their curriculum around a selection of music. A more appropriate approach may be to prepare a list of the key concepts that the students should learn throughout the year. The curriculum focuses on those concepts. These may include tonality and keyality, how the pitches relate to one another within music; Macro/Microbeats, the big beats and their subdivisions; and meter, duple and triple. The Jump Right In beginning band curriculum was developed with the end goal in mind. It asks “what should the students know by the end of the year?” What are the “exit behaviors” appropriate for each grade level? Once these have been identified and the knowing the current skill level of the students, teaching can begin. “Starting where the students are, regardless of level, and taking them over time that we have them with us to where we want them to be may be the key.”

Reference Handbook For Using Learning Sequence Activities, suggests a sequence for teaching tonal and rhythm patterns. Gordon notes that the patterns should be taught at the beginning of class/rehearsal and for only ten minutes. This fits with the brain-friendly Primacy-Recency principle. When given a list of items to remember, the brain often recalls only the first and the last few items. The information in the middle of the list is forgotten. For long-term memory retention, it is best to present new information in one learning sequence. The brain is able to focus attention on a given pattern and with appropriate rehearsal, store it in long-term memory. Teachers organize and scaffold the exact patterns they want their students to remember.

---

This makes them more accessible for quick retrieval. There should be little talking during pattern learning since the students need to focus on the process of learning the patterns.

Gordon suggests that in the beginning, the teacher should establish the keyality, the pitch that is the tonal base, and the tonality, major or minor, before performing the patterns. This guides the students in processing the tonal patterns and their relationships with each other. Teachers should direct the students to listen and audiate at the beginning of the class period. This should be done with little or no talking, only using non-verbal gestures. Students will listen while the teacher performs the pitches on a neutral syllable, such as “Bum”. The students will audiate, hear the pitches in their minds, and not sing immediately after the teacher performs the sequence. Figure 5 is an example of how Gordon suggests to begin a lesson involving melodic patterns being taught using rote learning.\(^7\)

Figure 5

One may perform this in any key that is comfortable for the students. This pattern will establish the keyality for the students. The students should listen as the pattern is performed so that their musical ear becomes oriented to the key in which patterns will be performed for that lesson. The sequence should be performed at least twice.\(^8\)


After the teacher has performed the pattern two to three times, the students are ready for class repetitions. As observed earlier, repetition or rehearsal is extremely important with brain-based learning and teaching. Rehearsal allows the brain to compare the new information with previous experiences in order to assign meaning, relevance or sense, fitting in with what the brain already knows. The more meaningful the information is, the more likely the brain will store it in long-term memory.

The tonal patterns in the curriculum are short and graded as easy, moderate, and difficult. The students must learn the process of pause-breathe-sing. This allows the students an opportunity to audiate the pattern before beginning to perform. Students initially perform the shorter patterns on a neutral syllable such as “Bum.” This allows the students to focus exclusively on matching the pitches and the pitch relationships. Typically, when beginning to teach patterns and sequencing, patterns should only be two to three pitches in length. For example, one may choose to work on the patterns in figure 6:

Figure 6

These patterns establish the Tonic and Dominant relationship, as well as the concept of Major tonality. Students will perform these quite often in music, so hearing, recognizing, and understanding this relationship is extremely important.

As these patterns become familiar, teachers may choose to design their own patterns, such as short patterns selected from a piece with similar length and difficulty. For example, the
patterns in figure 7 are selected from the first melodic statement of *Dragon Slayer*, by Bob Grice.\(^9\) They should be presented in the key of the work, Concert F major.

**Figure 7**

Initially, the tonal patterns should be performed on a neutral syllable, such as BUM or TAH. Later solfege may be added (one may also use scale degrees). The students repeat the patterns while performing the fingerings for the proper pitches on their respective instruments. This will help with audiation while the student associates the fingerings with the sound. The students will know how “E” sounds, not just which keys to press on their instrument. The patterns will be performed on the instruments following the singing process. The last pattern is more difficult and may be divided even further, such as singing just Re-Ti or Ti-Sol or Ti-Sol-La, especially after working with the Ti-Do relationship. If students are audiating correctly, they will be able to predict the pitch after Ti to be Do. Finally they will be able to discriminate that the last pattern is different.

It is very important that the students be individually assessed on the patterns. According to Gordon,\(^10\) “The audiation of individual patterns is the essence of Learning Sequence Activities.” Assessing individual students on the patterns ensures that each is learning how to audiate. Students in an ensemble setting can easily hide by imitating what they hear and never learning to audiate. They may not actually learn to read music. This is why intentionally teaching

and assessing sight-reading is so important in the teaching and learning process for music literacy. Teachers should ask that the individual patterns be sung individually when both teaching and evaluating. This allows for formative and summative assessments to take place. When assessing the students, the individual patterns should be in the same format as they were presented in class. Teacher performance, pauses for audition, and the student then perform. Without taking a breath, a student will be merely imitating the pattern.\textsuperscript{11}

Experience and sequencing are major factors in brain-based teaching. A high school student may have no experience with pattern-based learning. They will need to start at the beginning of the sequence. One cannot assume that because a student is of a particular age, he or she is at the corresponding achievement level in music. Older students may feel that what they are learning is simplistic. It is important that the information, the tonal and rhythmic patterns, be presented in the correct sequence regardless of grade level or chronological age.

A positive classroom environment is necessary for students to desire to learn. According to Sprenger, “Safety and predictability allow the brain to have lower levels of stress chemicals that may interfere with learning.”\textsuperscript{12} It is important to consider that the emotional memory is a powerful contributor to learning. If a student perceives threat in the classroom environment, no learning will take place. Learning new information is risky, like learning to walk. Each step is a new challenge. The brain quickly learns from experience and discovers new ways to meet the challenges. This process offers novelty to the brain and the brain itself grows through enrichment. Appropriate challenges and novelty make experiences more enriching for the brain.\textsuperscript{13}

\begin{thebibliography}{9}
\bibitem{11}Ibid, 33.
\bibitem{13}Ibid, 3.
\end{thebibliography}
Rhythm patterns should be taught in a similar manner as the tonal patterns, but without the pause. It is important to set a consistent, steady tempo throughout the learning sequence activities. Again, one should speak as little as possible. Gordon suggests beginning rhythmic pattern learning with duple meters, such as 2/4. In addition, it is easier for students to grasp a tempo by dividing the macrobeats into microbeats. The teacher should begin with microbeats, such as eighth notes, dividing the beat in duple meters. Gradually larger macrobeats, such as steady quarter notes, will be added. The pattern in figure 8 demonstrates how to establish the tempo, using a neutral syllable such as “TAH” or “DAH”:

Figure 8

Usual duple refers to the 2/4 meter. The students are taught to inhale on the fourth macrobeat before they begin reading the rhythm pattern using TAH or DAH. For example, the teacher would sing the following rhythm and the students would inhale where the arrow is and sing back the rhythm as in figure 9.

Figure 9

---

As with the tonal patterns, the students are assessed individually. Gordon suggests assessing the patterns in figure 10 before any other patterns are tested.\textsuperscript{15}

Figure 10

Patterns chosen for repetition in rehearsal may be from a selection of music being rehearsed. The rhythmic pattern in figure 11 from \textit{Dragon Slayer}\textsuperscript{16} may be performed and repeated during the ten minute opening learning sequence.

Figure 11

One of the most difficult rhythmic aspects in \textit{Dragon Slayer} is the large number of rests. Rhythmic pattern exercises may include varying patterns of quarter notes and quarter rests, such as in figure 12.

Figure 12


This discussion has extracted various patterns from music that may be rehearsed by the beginning band. Learning basic tonal and rhythmic patterns before attempting to read music in the early stages of instruction can prove effective. Excellent sources of rhythmic and tonal patterns include Gordon’s *Tonal Register* and *Rhythm Register*. These two books include varying difficulty levels for each element. Teaching tonal and rhythm patterns on the same day is not advised. Attention to a single element during the ten minute instructional period is encouraged. Concepts are formed when the brain connects chunks of information together, such as the tonal and rhythmic patterns.

Teaching patterns that may be applied to any music to be performed helps the student learn the process of learning. According to Gordon, sequential order is based on skills and content in the music learning theory. There are separate skill and content learning sequences. Skill learning sequences must be taught before content learning. For example, skill learning sequence requires patterns to be taught using neutral syllables before using tonal or rhythmic syllables. Audiation precedes notation, and imitation be taught before creativity and improvisation. Students understand how the patterns work before putting them in context, such as defining major or minor tonality. Process must always have a more important focus than product. Students need to learn and understand the thought process they are using when performing music. In order to achieve ensemble or unity within the band, all of students must be thinking the same thing at the same time. It is important to evaluate teaching and assess learning in order to detect difficulties early and ensure that appropriate teaching and learning takes place.

19 Ibid, 6.
After learning various patterns and their relationships to each other, the students are finally ready to understand symbolic association, reading notation. This is where many methodologies and teachers get out of sequence. Reading notation is the first step. Students begin by learning symbols and notation and then, perhaps, how they sound. This is comparable to students learning to read words before they know how vowels and consonants sound. If taught in the correct sequence, students who learn the symbols of notation are ready to read music. In essence, the students are reading the patterns they have already learned aurally. Students give meaning to the symbols by “hearing with their eyes.”

For any beginning band, there must be a lot of pattern work before picking up an instrument. The first few weeks of school, as students wait for instruments to arrive, is a perfect time to introduce the tonal and rhythmic patterns. Using various method books to identify appropriate patterns will be beneficial. Beginning with the end in mind, a performance, the director may select melodic and rhythmic patterns from each piece of music that has been programmed. For beginning band, many of the patterns occur frequently. A popular pattern is the first five notes of the Concert Bb scale ascending and descending.

Figure 13.

This pattern can be performed several different ways without any instruments. The patterns may be sung on a neutral syllable such as “BUM” as Gordon suggests, on solfege (moveable do), or even using “DAH” or “TAH” to begin teaching articulation. Other possible patterns that beginning band students encounter are skips, mostly major and minor seconds and thirds, or
neighbor tones, starting on a given pitch, moving one note above or below, and returning to the original pitch.

In addition to teaching the melodic patterns, these patterns can be varied by adding different rhythmic values. However, it is important to remember that before putting the rhythm and melody patterns together, they must be taught separately. Beginning rhythms with the eighth note is ideal since it teaches students to subdivide. While subdivision is often viewed as an advanced concept, it is a skill necessary to achieve at the beginning. By introducing the rhythms with a neutral syllable and then moving to a notation system using syllables other than numbers may help more students understand different rhythmic qualities. Figure 14 illustrates Gordon’s rhythmic solfege and counting numbers.²⁰

Figure 14

\[\begin{align*}
\text{DuDeDuDe} & \quad \text{Du Du Du Du} & \quad \text{Du-U} & \quad \text{DuTaDeTa} \\
1 & \quad 2 & \quad 3 & \quad 4 & \quad 1-2 & \quad 1 \text{ e & a} \\
(\text{eighth notes}) & \quad (\text{quarter notes}) & \quad (\text{half notes}) & \quad (\text{sixteenth notes})
\end{align*}\]

\[\begin{align*}
\text{DuDaDi} & \\
1 & \quad 2 & \quad 3 & \quad 4 & \quad 1 \text{ e & a} \\
(\text{triplets})
\end{align*}\]

While beginning with Gordon’s rhythmic solfege, the patterns may be transferred to articulation based syllables, such as “DAH” or “TAH.” These may be paired with a number counting system as listed below each example. A proper sequence for teaching these rhythms may begin with performing them on a neutral syllable, moving rhythmic solfege, translate to articulation based syllables, and then assigning a counting system, such as numbers.

In Gordon’s *Essential Preparation for Beginning Instrumental Music Instruction*\(^{21}\), common tonal patterns in both major and minor tonality are identified in figure 15.

Figure 15

Common Tonal Patterns

Figure 16 illustrates the rhythmic patterns that include macrobeats and microbeats for the most common meter signatures introduced in the beginning band setting.  

Figure 16.

Macrobeats

Microbeats

Gordon also identifies other musical concepts, such as expressive terms and other notational symbols. He suggests that students review all of the symbols and markings before looking at music notation. By going through the skill learning sequence, by identifying and teaching patterns and performing them, guiding the students through verbal association by naming note names, the students will understand the system of associating pitch letter-names with lines and spaces. This should be completed in both clefs, regardless of instrument.

---


The same process may be done with rhythmic notation. Gordon includes various rhythm patterns and the sequential presentation of those patterns. Patterns for 2/4 and 6/8 are presented with rhythmic solfege in figure 17.24

Figure 17.

As the students learn the patterns, they may coordinate them with the motor movements by marching, clapping, stomping, or patschen (patting the thighs). Students may start to identify and audiate the patterns they are learning aurally/orally in the written musical examples. This introduces the process of discrimination before any instrument is ever in the students’ hands. Once the instruments arrive, the director may focus on instrument assembly, the physical

attributes of playing, tone production and breathing exercises. They should begin each class period by reviewing the tonal and rhythm patterns.

If the procedure above is followed, the students will be more prepared to begin learning to read music from notation in the various method books or the repertoire. Brain-compatible teaching is not starting at the beginning of a piece or starting on page one of the method book. Brain-compatible teaching in music learning theory establishes the basic fundamentals and breaks down complex concepts in chunk that the students can process, understand, and retain. This is the kind of music education that will apply to everything they will perform.
Chapter Four

Conclusion and Discussion

With all of the new information becoming available regarding brain research and brain-compatible teaching old ways of teaching may no longer be effective. In Edwin Gordon’s Music Learning Theory music skill learning begins with imitation, the same way that language is learned. Phonemes, the sounds of a language, are learned first. These are followed by the “ABCs,” learning to identify letters by sight, and then putting those letters together to form words, sentences, and eventually ideas. According to Gordon, the sequence of learning to audiate begins with listening to music, then reading music, followed by writing and recalling music from memory. Audiation is the essence of music literacy. Music teachers should include aural/oral activities in their classrooms. When music literacy is a goal of music education, achieving the ability to audiate becomes a primary concern. After the aural/oral stage of learning the sounds of music, they are given identifiable names, verbal association. Finally the students are ready to apply these experiences to repertoire. Often music educators teach musical concepts exclusively by telling the students the information. The students never really hear or audiate the sounds they are playing.

There may be a difference between rehearsal and teaching in music classrooms. Rehearsal provides a structured environment where selections of music are repeated over and again by the students. Teaching gives the students opportunities, through guided and elaborative rehearsal, to learn and apply the skills necessary to read, understand, and create music. Too often repertoire is taught exclusively for performance at festivals and concerts. Sight-reading is

---

considered evidence of musical independence. Approximately 75% of states in the United States require sight-reading as part of large ensemble assessment.\(^2\) Sight-reading is evidence of the presence of music literacy skills. Problems with sight-reading may include difficulties with pattern recognition.\(^3\) The question may be asked, what is the teaching focus of ensemble directors? Is it repertoire preparation, music literacy or a combination? This study advocates for a re-evaluation of the way music teachers approach music class/rehearsal rooms. Music curricula using a national standards-based approach, focuses on creating, performing, and responding to music. Many conductors choose repertoire that they like or because it is a standard and must be performed in order to achieve program credibility. The repertoire music educators choose must become the vehicle for the curriculum that has been previously established. Good teaching results in superior performances of the repertoire. Performing Gustav Holst’s *First Suite in Eb* is of little value if the notes and rhythms are simply recreated without any music knowledge or context. Creating a foundation of musical knowledge through music literacy will ensure that ensembles have the ability to perform literature of the highest quality. When music teachers desire that their students experience music in a way that empowers them to become independent music makers and lovers, music literacy becomes a primary goal. The skill learning sequence offered by Edwin Gordon’s Music Learning Theory is an efficient model for such instruction.

Neural plasticity plays a role in the skill learning sequence. Although applying Music Learning Theory will help produce literate musicians at any level of instruction, it is best when


introduced in the elementary music classroom. Music aptitude solidifies around the age of eight.⁴ Therefore, teaching and developing music literacy skills should begin before the 4th grade. If a student does not learn patterns of music and how to apply them at the beginning of their music education the beginning band student may find it more difficult to achieve a full understanding of music literacy while learning to play their instrument.

The components of Music Learning Theory may be implemented while teaching all of the fundamentals of physically performing on an instrument. The time may before the students’ instruments arrive is a perfect opportunity to introduce the students to music audiation and the skill learning sequence. Many beginning band directors are not aware any prior musical knowledge each student has. When given an early foundation of musical pattern training, students can later begin to focus on the physical playing characteristics and sound production. When pattern instruction and symbolic recognition takes fifteen to twenty percent of the rehearsal time at the beginning of each instructional period, it can become a regular part of the instructional routine. This reinforces the prime-time components of the brain-friendly Primacy-Recency Principle, information presented at the beginning and the end of a lesson will remembered most easily. In addition, as rehearsal takes place, working memory is actively processing previously learned information and comparing it with the new information. The most recently presented information is held in immediate memory and needs to be rehearsed often.⁵ A well-planned learning episode, a forty-minutes class period, typically includes two prime-times for learning and a down-time for rehearsal. The first prime-time is at the beginning of the rehearsal and lasts about twenty minutes. The last five minutes or so of prime-time one tends to slope downward to downtime. During the slope, while new information is still being learned,

working memory is sorting and processing the original information. Full focus and attention may not be achieved. During the six to seven minute downtime, the brain is practicing/rehearsing. The second prime-time is not as efficient as the first one. It is usually the final ten to twelve minutes of the class period. This time should provide closure to the lesson reviewing the concepts learned during the class period. By carefully planning each lesson, music educators can ensure that prime-time is used effectively. Instruction using melodic and rhythmic patterns at the beginning of each lesson will ensure that the material is intentionally presented. Applying the patterns to music reading and referencing how the patterns were learned in the beginning of the lesson reinforces the pattern structure and assists students in remembering and recalling the patterns within the repertoire.

Music educators are encouraged to use good teaching practices, such as the direct instruction method. Many conductors spend a majority of the rehearsal time giving directions. Researchers have analyzed how high school and middle school directors make use of the instructional during sight-reading adjudication at ensemble festivals. The author observed that the main difference between bands receiving superior ratings and bands that did not earn high ratings was the amount of time the directors spent giving non-specific musical directions. Approximately fifty-five percent of the time was dedicated to musical information, with forty percent of the time being dedicated to directions and counting metric beats. Gordon notes that specific task presentation is the very essence of the direct instruction method. He emphasizes how important it is for the teacher to talk as little as possible. The focus of the instruction should be on student performance and response. When non-specific instruction takes the majority of the

---

learning period, students are not as involved, hindering the learning process. Ideally, the task is presented, a pattern is sung or performed by teacher, the students respond with a performance, and the instructor provides immediate feedback. Often in the sight-reading adjudication setting, directors do not employ this learning sequence because of time constraints. If the skill learning sequence and the direct instruction method are used correctly, this sequence of instruction becomes natural for the teacher and student and can be applied in the sight-reading adjudication setting. Following a quick review of the score, the teacher may engage in a musical conversation with the students, using patterns from the sight-reading repertoire, singing, patching, count-singing, etc. If the skill learning sequence becomes part of everyday instruction, the students are likely to understand and perform with better accuracy during the preparation and performance of sight-reading materials.

Using Gordon’s skill learning sequence encourages the music educator to plan ahead employing score study as an educational tool. As noted earlier, a director may study *Dragon Slayer* by Rob Grice in preparation for a concert with the Beginning Band. While studying the score, the director may select rhythm and tonal patterns to teach before the students see the music.

For example:

**Rhythm Patterns**

![Rhythm Patterns Image](image-url)
Rhythm one establishes the steady beat and is found throughout the piece. Rhythm two is from measure 11. Rhythm three, from measure 4, is the main rhythmic motive. Rhythm four is the rhythm of the countermelody in measure 4. Rhythm five is located in the triangle part. Rhythms six, seven, and eight are fragments of the main rhythm. Finally, rhythms nine and ten are in the percussion parts, measure 36.

Melodic Patterns

Melody pattern one moves within the rhythmic motive. Pattern two is fragmented as illustrated in pattern three and four. The fifth and sixth patterns are important to master in order to establish the tonality of the music.

The director may also identify larger concepts or principles that the repertoire will teach, such as other tonal, rhythmic, formal and expressive concepts. Before students can understand and apply these concepts, they learn the building blocks, the patterns. Then concepts may be developed using the patterns stored in the memory pathways.

College-level students will benefit from the skill learning sequence as well. According to Watson, when comparing aural versus notational instructional materials for jazz improvisation,
the aurally instructed students achieved more success than the students receiving notational instruction alone. The skill learning sequence in Music Learning Theory is for everyone. It is a brain-friendly, effective way to teach music literacy.

The instructional order for presenting rhythmic notation is often debated. As observed earlier, Gordon suggests that the eighth note, or subdivision of the quarter note beat, be taught first. It can be difficult for a student to understand the duration of time in a whole note. Yet this is how many music educators begin rhythmic instruction. By teaching subdivision first, students begin to understand the concept of subdivision and steady beat, the foundation for discriminating all rhythms. A rhythm method book that somewhat follows this philosophy is Garwood Whaley’s *Basics in Rhythm*. Instruction begins with the quarter note and various patterns using quarter notes and quarter rests. Before each rhythmic exercise, a “Rhythm Key” is presented illustrating the short patterns that are used in the exercise. See Figure 18.

Figure 18

---

These rhythmic patterns are presented before each exercise and, as indicated by the notation, are to be repeated as appropriate. The small details, such as the repeat signs around each rhythmic pattern, help guide the teacher to distinguish a high quality method book. They ensure that teachers are doing what is necessary to advance the learning experiences for their students.

Scalar studies are important for band students to excel on their respective instruments. All music is based on a basic set of tonal relationships, scales, intervals, and so on. Scales are used to teach fingerings and register work. Once the student learns to audiate scales and intervallic patterns, such as thirds and arpeggios, they may have more ease transferring the knowledge to other keys. Students will know how the scale sounds and may be able to self-correct errors. A great resource for working through scales and patterns to achieve technical accuracy in an ensemble setting is *Tradition of Excellence: Technique and Musicianship*.11 This method book is generally used for students during their third year of study. It can be used in the beginning stages as a sight-singing source. As the students develop, they begin to apply the method to their respective instruments. It begins with technique studies and transitions quickly into scalar/key studies. The first key is C Major (Concert Bb Major). The exercise begins with the scale and then introduces thirds, arpeggios, articulation and technique etudes, interval and tuning etudes, melodious etude, etude excerpts, and, finally, a chorale for band. Next comes the relative minor, in this case, a minor (concert g minor), repeating the same sequence. This process is followed for all major and minor keys. There are also additional resources in an appendix, including rhythm studies. This book offers the instructor the opportunity to provide instructions about pitch tendencies for each instrument, a more advanced concept for the beginning band. Nevertheless,

---

it is something important for the developing musician to learn as they progress through learning to play his or her instrument.

In addition to teaching music literacy in Beginning Band, fundamental technique producing characteristic sound must be taught. This may be accomplished using the same procedure as with music literacy. While the concept of sound is very subjective, the overall goal should be high quality characteristic sounds for each instrument. This requires teaching the behavioral/performance patterns of posture, breath management, and embouchure development. Before ever before putting the instrument together, the student may practice proper embouchure development while working on rhythm patterns. For example, as a beginning clarinetist is working on getting a firm embouchure, issues may arise when the student begins to learn to articulate. The student’s embouchure may change as they articulate, demonstrating poor technique. By teaching the student proper embouchure before he or she puts the instrument fully together, the student can practice rhythm patterns by articulating on the mouthpiece or mouthpiece and barrel alone. Often band directors focus on achieving the correct pitch, while ignoring rhythmic accuracy. Gordon suggests that students need to be able to interpret rhythmic notation beyond vocalizing the rhythms. Having students perform rhythm patterns with the mouthpiece alone helps to achieve this principle. While attempting to achieve the desired “crow” pitch, or pitch made without putting together the entire instrument, Concert C with the mouthpiece or Concert F# with the mouthpiece and barrel, the student can also focus on maintaining the pitch as they articulate. This is part of the sequence of how the clarinetist learns to form a correct embouchure. It is also an opportunity to correct errors while practicing rhythm patterns that have been learned on neutral syllables. In addition, exercises with sound production

---

should focus on listening skills and consistent fundamentals. In *Essential Musicianship for Band*, concepts are presented in developmental order with basic performance skills introduced individually before being applied to practice.\(^\text{13}\) The explicit instructions—that quality repetition should take place and that the exercises should not be taught line by line alone are included.\(^\text{14}\) The first exercise focuses solely on performing Concert F with the best quality tone. Students are given specific goals such as breathing as an ensemble, keeping a steady air stream for full beats, and releasing each note together. The students use breath as the focus to produce the best quality sound. Being consistent when teaching all concepts in the beginning band classroom will produce more effective and productive lessons. Students will understand the routine of teaching patterns and fundamentals before applying to individual practice and reading music. More advanced learning builds on what has been previously learned. To achieve brain-friendly teaching and learning, it must be consistent and sequential.

In addition to teaching fundamental concepts to the beginning band student, improvisation and composition may take place. Improvisation has a small role in the normal beginning band classroom. However, Gordon suggests that if students are given an immediate opportunity to improvise on their instruments before being taught to read music notation, they will develop a familiarity with the instrument quicker than other practices of teaching.\(^\text{15}\)

Research on sight-reading skill development in the beginning band is sparse. This study demonstrates how Music Learning Theory may be applied to sight-reading and music literacy skills for the beginning band student. It is a necessary part of a comprehensive instrumental music education that sight-reading development be a significant focus in all musical settings.

\(^{14}\) Ibid, 1.
Research indicates that when reading music, pitch and rhythm are decoded separately, even though they are a single output when performing music\textsuperscript{16}. Sight-reading on an instrument takes as much internal representation of pitch as sight-singing. A common phrase heard in the band classroom is, “If you can’t sing it, you can’t play it!” Although there has not been established a significant connection between the ratings a band receives when sight-reading music with music instruction and practice, there is a correlation between developing fundamental techniques in order to be able to perform on an instrument. One may assume that teaching music literacy will certainly affect the level of sight-reading performance. The fundamental techniques of performing on an instrument and reading music are teachable and must be taught. It cannot be assumed that because a student knows to press down the first two valves on the trumpet to achieve an E or an A that the student actually knows how those pitches sound, especially when reading music. Just as neural plasticity is affected by experience, music learning is affected by experience. Beginning band instruction includes the expectation that music literacy instruction is a powerful tool for music students to be successful at sight-reading. Sight-reading can be taught. It cannot be assumed that simply because students perform music on instruments, they also achieve high ratings at sight-reading. The primary purpose of Edwin Gordon’s Music Learning Theory is for students to have enriching and intentional learning musical experiences.

Works Cited


