

A METHOD FOR TEACHING IMPROVISATION:
Integrating Marching Percussion Pedagogy into Solo Marimba Study

by

Nathan Smith

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
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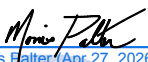
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Dedication Page

I would like to dedicate this document to my wife Sarah. Without the unyielding love and support of my wife, Sarah, there is no way I would be where I am today. Thank you for supporting me through the long days, late nights, and seemingly impossible scenarios. You have helped me see all my pursuits to the very end, even when I didn't think I was strong enough. This would not have been possible without you.

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Abstract

Bloom's Taxonomy identifies creation, or, in the context of this study, improvisation, as the highest level of learning and understanding. Not all musical art forms, however, emphasize improvisation. This is particularly the case with the marching arts, as these ensembles prioritize uniformity and precision, usually rendering improvisation unnecessary and even counterproductive. Instead, students develop extensive technical proficiency through the repeated performance of exercises that are often shared across ensembles or derived from common pedagogical principles. In contrast to the marching arts, solo marimba performance emphasizes individuality and unique interpretive approaches but often lacks the structured pedagogical framework found in marching settings. This document demonstrates what I have named the P.I.T. (Percussion Improvisation Teaching) Method for integrating the widely practiced technical exercises from the marching arts into the study of solo marimba literature as a foundation for teaching improvisation to percussionists. By connecting familiar technical material to the study of solo marimba literature, students will gain a clear and accessible pathway to engage in creative and novel music-making.

Chapter 1: Introduction

Overview

This document proposes a systematic approach to improvising by merging common technical exercises from the marching percussion idiom with the practice of solo marimba literature. By combining the technical approach of the marching arts with solo marimba study, students will both gain a deeper understanding of keyboard percussion and develop improvisation skills.

The educational psychologist Benjamin Bloom described “creating,” which can also be understood as “improvising,” as the highest form of learning. Because the marching arts demands uniformity, improvisation is not part of the standard toolkit for this activity.¹ Instead, students in these settings gain substantial experience performing technical exercises on keyboard percussion instruments like marimba, vibraphone, xylophone, and glockenspiel.² These exercises develop strength, sound quality, and control of fundamental techniques in order to create a consistency of approach, with the goal of every musician looking and sounding as similar as possible to each other for the purposes of a choreographed show.³ This facilitates the execution of a prepared marching band show, which contains between twelve and fifteen minutes of music. The goal is for students to apply the skills learned in the exercises to the execution of show music that utilizes the same fundamental techniques. This approach, in which technical exercises are

¹ Addison Murphee, “The Metamorphosis of Marching Band: A Case Study of Exploring the Evolution of Marching Bands from a Specific State in the South Eastern United States” (Masters thesis., University of New Mexico, 2020), 22.

² Tim Hinton, “Front Ensemble Advice Part One,” podcast audio, *The Marching Round Table*, June 9, 2021, <https://marchingartseducation.com/995-front-ensemble-advice-part-one/>.

³ Deborah A. Hoffman, and Lisa C. DeLorenzo, eds. *The Oxford Handbook of Preservice Music Teacher Education in the United States* (Oxford University Press, 2023).

systematically applied to musical passages, represents a highly effective practice strategy⁴ Within the realm of solo marimba performance, however, students often fail to incorporate technical exercises into their practice of solo marimba literature.

In a survey conducted by Marilyn Kostka at Northern Arizona University on the practice methods of college students, she found her piano students lacked a method of practice that breaks music into smaller, more manageable components.⁵ I personally have witnessed students omitting this step when learning a work for solo marimba. Instead of focusing on problem areas, students frequently practice entire pieces repeatedly, neglecting the process utilized in the marching arts of breaking down difficult passages. Method books like Leigh Howard Stevens's *Method of Movement* and Julia Gaines's *Sequential Studies for Marimba* seek to provide exercises designed to develop the specific technical skills required to play solo marimba pieces, but published marimba works rarely include or suggest exercises that would assist in learning the piece.⁶⁷ This leaves it to players to create their own exercises in order to develop the skills necessary to play the solo successfully.

This document defines a structured method for students to develop improvisational skills on the marimba by applying specific marching exercises to passages from the solo marimba literature. By approaching improvisation in this manner, my method will reflect the way many

⁴ Brenda Wristen, "Technical Exercises: Use Them or Lose Them," *Piano Pedagogy Forum* 2, no. 3 (September 1999): 131, <https://pianoinspires.com/wp-content/uploads/2022/02/PPF-Vol.-2.pdf>.

⁵ Marilyn Kostka, "Teach Them How to Practice," *National Association for Music Education* 90, no. 5 (May 2004): 23-24, <https://doi.org/10.2307/340001>.

⁶ Leigh Howard Stevens, *Method of Movement: 25th Anniversary* (New Jersey: Keyboard Percussion Publications, 2005).

⁷ Julia Gaines-Montag, *Sequential Studies for Marimba: Level 1...the very beginning* (Portland: Tapspace Publications, 2011).

musicians practice jazz improvisation. There is a common misconception that when jazz musicians improvise or practice improvisation, they come up with new ideas on the spot. Even the idea of improvisation is a bit of a misnomer. When jazz musicians improvise, they draw from a litany of pre practiced musical ideas while soloing on a song, and it is how they arrange those ideas in real time that makes it new. But the musical ideas have been practiced repeatedly in many different key signatures. My method of approaching improvisation mirrors the approach of jazz musicians by applying exercises to melodic structures to develop musical ideas that can then be applied in real time. By practicing in this manner, it will help students learn to improvise and create their own works, allowing them to achieve the highest level of learning in Bloom's Taxonomy and to cultivate techniques employed by some of the world's leading marimbists. Renowned percussionists such as Gordon Stout, Mark Ford, and Keiko Abe have all referred to improvising as an integral part of their practice. In one interview, Ford said, "My warm-up routine starts off with improvisation."⁸ Professor Emeritus of Ithaca College Gordon Stout says he always starts with technique exercises but that "often leads to improvising and coming up with new ideas for pieces."⁹ But, often, improvising can seem daunting and even frightening for students because it requires them to be vulnerable and embrace the possibility of failure, but this can be remedied by placing guard rails and rules on improvisation practice.¹⁰ By creating a systematic approach to improvising that combines marching percussion exercises with solo marimba pedagogy, my method creates a structured formula that encourages students to make

⁸ Colin Jeffery Hill, "The 10,000-Hour Threshold: Interviews With Successful Percussionists" (DMA diss., University of Kentucky, 2013), 82.

⁹ *Ibid.*, 86.

¹⁰ Michael Alexander, "Fearless Improvisation: A Pilot Study to Analyze String Students' Confidence, Anxiety, and Attitude Toward Learning Improvisation," *National Association for Music Education* 31, no. 1 (September 2012): 25, <https://doi.org/10.1177/8755123312457884>.

improvisation a normal part of their daily practice routine, mirroring the habits of master marimbists. In doing so, the hope is ultimately for percussionists to feel more confident in their own ability to compose their own works for keyboard percussion — a skill I have cultivated in my own professional life as an established keyboard percussionist and composer.

This study demonstrates how the P.I.T. Method, named after the commonly used term “pit” for a stationary ensemble during a marching performance, applies specific technical exercises to solo marimba literature. The works that this study will focus on are: *A Little Prayer* by Evelyn Glennie (1994), *Anthem* by Ivan Trevino (2011), *Cello Suite in G Major Prelude* by JS Bach (1717-23), *Variations on Japanese Children’s Songs* by Keiko Abe (1982), and *My Lady White* by David Maslanka (1980).

These five pieces were selected because they encompass a wide range of technical demands, stylistic approaches, and musical challenges. In addition to these five solos, four marching percussion exercises will be selected from a variety of high school, drum corps and indoor percussion front ensemble packets. The exercises will reflect the most commonly used warm-ups, therefore increasing the chances of the student already having knowledge of them. These exercises, I show here, can be applied to specific passages from the five selected pieces, thereby highlighting these passages’ usefulness in both facilitating the learning of solo literature and suggesting a method for improvisation.

This document therefore proposes a systematic approach to combining technical exercises from the marching percussion field with the solo marimba literature through improvisation, thus providing students a deeper and more comprehensive understanding of keyboard percussion. By combining the technical approach of the front ensemble with the challenges of solo marimba study, this method creates a holistic approach to keyboard percussion

pedagogy that advances improvisational creativity and generates a deeper understanding of the music for its performers.

Literature Review

My review of the scholarly literature was focused on three primary areas: method books designed to develop either improvisational fluency or technical ability; front ensemble exercise packets collected from various organizations, and the importance of improvisation in music and how it is significant to the development of a musician.

Many method books have been written on how to play the marimba as well as how to become an improviser on percussion in general, but very little has been written specifically on how to improvise on the marimba. Method books on improvising for percussion are primarily focused on three areas; drum set, world percussion, and jazz vibraphone. Several books explore how to improvise on the drum set, and sources also target utilizing basic drum rudiments as a starting point for improvisation. A standard book that uses this method is Joe Porcaro's *Groovin' with Rudiments*. Porcaro is a successful jazz drummer, having played with jazz artists such as Stan Getz and Freddie Hubbard as well as pop artists such as Madonna. In his method book, he discusses various ways of utilizing the standard twenty-nine drum rudiments on the drum set to come up with soloistic ideas. In this document, I take a similar approach by reshaping basic mallet exercises to support the development of soloistic concepts.

Improvisation serves as a central principle of jazz, and the study of jazz vibraphone provides a foundational framework for many percussionists. Jon Metzger's *The Art and Language of Jazz Vibes* covers the core principles of jazz vibraphone, including scales, chord voicings, comping patterns, and digital riffs (a soloing concept that takes a simple melodic idea, normally only a

couple of beats long, and transitions it through different modes and progressions).¹¹ This concept is similar to Porcaro's use of specific rudiments to build drum set solos, as well as my approach to utilizing one specific stroke type or exercise to develop musical ideas.

Out of the many method books dedicated to how to play the marimba, I have focused on two because of their use of specific exercises: Leigh Howard Stevens's *Method of Movement* and Julia Gaines's *Sequential Studies for Four Mallet Marimba*. Stevens' book takes a comprehensive look at all the stroke types used on marimba and provides accompanying exercises. In addition to the hundreds of exercises contained in this book, Stevens also identifies popular marimba solos in the percussion curriculum and explains how the exercises can be used to develop the technical skills needed for specific passages. Similarly, Gaines's book contains etudes based on a set of accompanying exercises. Unlike *Method of Movement*, which provides exercises that can develop skills for a variety of pieces, *Sequential Studies for Four Mallet Marimba* contains etudes that are built around specific exercises with the goal of developing fundamental skills.¹² Stevens's book offers an exhaustive look at any technical problem a player might encounter, whereas Gaines's focuses on basic strokes and provides etudes to develop the stroke types.

Most front ensembles will have exercise packets that are available for download or purchase through websites. These collections of music, also referred to as audition packets, contain the exercises that students are expected to prepare for auditions. These exercises will then be utilized throughout the summer to develop necessary skills. I have collected several packets from a variety of ensembles at varying skill levels. These include: Colts D&BC (drum and

¹¹ Jon Metzger, *The Art and Language of Jazz Vibes* (CITY, Virginia: EPM Publishing, 1996), 56.

¹² Julia Gaines, *Sequential Studies for Four Mallet Marimba*, ed. Brian Tate (Portland, OR: Tapspace Publications, 2014), 23.

bugle corps), Phantom Regiment D&BC, Cascades D&BC, Blue Coats D&BC, Cavaliers D&BC, Pulse Indoor Percussion, Broken City Indoor Percussion, Atlanta Quest Indoor Percussion, Impact Percussion, United Percussion, Vista Ridge High School, St. Martin Independent, Chestatee High School, Burlison High School Front Ensemble, and Cedar Park High School Front Ensemble.

Across these fifteen exercise packets, several warm-ups appear consistently: “Green Scales,” a single independent strokes exercise modeled after the scale patterns of xylophonist George Hamilton Green; Alternating Strokes, a technique that transitions between eighth-note unison patterns and sixteenth-note individual mallet strokes; Double Laterals, performed as “block chords” that vary in complexity depending on the ensemble; and “Broccoli,” a permutation-based exercise emphasizing lateral stroke technique.

In *On Drumming: The Psychology and Philosophy of Improvisation*, JP Bouvet asserts that improvisation is not an act of spontaneous creativity but a practiced skill that can be learned through a structured approach.¹³ He draws on educational psychology to explain how improvisation emerges from internalized vocabulary, motor skills, and mental frameworks. He offers practice strategies that approach improvisation as a language, reaffirming the idea of creativity as a practiced skill. This aligns with my claim that improvisation can be practiced through the application of technical exercises.

There is a significant amount of research dedicated to demonstrating the benefits of improvisation in developing creativity. *Redefining Music Studies in an Age of Change: Creativity, Diversity and Integration* argues that music programs and educators must be able to adapt to a rapidly changing music field, and the study of improvisation can develop skills like creativity and the

¹³ JP Bouvet, *On Drumming: The Psychology and Philosophy on Improvisation* (New York: JP Bouvet Publishing, 2024).

ability to integrate outside techniques. The authors argued ultimately that “the three pillars of creativity, diversity, and integration would be our recommended avenue of fulfilling the goal of creative improviser–composer–performer graduates.”¹⁴ This supports my research in emphasizing the importance of creative practice in the form of improvisation for developing percussionists.

The Cambridge Companion to Percussion is a collection of essays from experts from around the world. The essays cover a range of topics including the history of the timpani, the development of the marimba, and the influence of percussion on composers. In “Finding a Voice,” Bob Becker discusses the role of the percussionist-composer, or musicians who considered themselves percussionists first and composers second: “A number of well-known percussionist-composers have remarked that they always begin, and often complete, a composition by extemporaneously playing on the instrument(s) chosen for the orchestration.”¹⁵ The P.I.T. Method will create a structure for students to find their voice by combining previously learned skills in novel ways, gesturing toward the percussionist-composer relationship that Becker discusses.

The last and arguably most significant resource in regard to the significance of improvisation is Colin Hill’s “The 10,000-Hour Threshold: Interviews with Successful Percussionists.” Percussionists like Mark Ford, Peyton Macdonald, Bill Moersch, Gordon Stout, Gary Cook, Omar Carmenates, and Paul Rennick, all cite improvisation as a regular part of their practice routine.¹⁶

¹⁴ Edward Sarath, David Myers, and Patricia Shehan Campbell, *Redefining Music Studies in an Age of Change: Creativity, Diversity, and Integration* (New York: Routledge, 2017), xi.

¹⁵ Bob Becker. *Cambridge Companion to Percussion: Finding a Voice*, ed. Russell Hartenberger (Cambridge: Cambridge University Press, 2016), 162.

¹⁶ Hill, “The 10,000-Hour Threshold,” 47, 84, 85.

Chapter 2: Practice, Improvisation, and Historical Foundations

Practice Based on Sound Theory

In the *Oxford Handbook of Music Performance*, Peter Miksza asserts that intentional practice is a nearly universal requirement for musicians aiming to achieve high levels of performance ability, yet the mere passage of time spent practicing is not enough to guarantee improvement.¹⁷

Research in performance science underscores that skill development is most effective when practice is structured, disciplined, and informed by strategies grounded in human learning principles rather than random or trial-and-error approaches.¹⁸ Many students rely on the habit of learning music one measure at a time, then linking those measures together and repeating them continuously until they are memorized. This is particularly prevalent in the learning of solo marimba literature given the inherent difficulty of reading and playing at the same time. While this approach may yield short-term gains, it often limits deeper musical understanding and the development of long-term abilities and skills. Miksza goes on to say that “since music learners spend nearly all of their practice time working alone, it is especially critical that they have a clear understanding of how to design and execute effective practice methods.”¹⁹ Wandering through practice sessions in a trial-and-error manner can lead to stress, frustration, and a sense of failure. Disorganized practice often leads to wasted time and minimal improvement in performance skills; more concerningly, it can reinforce bad habits, promote improper technique, and even result in physical injury. By identifying the most effective approaches to practice, I can refine my P.I.T. Method to more effectively teach improvisation and deepen musical understanding.

¹⁷ Peter Miksza, “Practice,” *The Oxford Handbook of Music Performance* (Oxford: Oxford University Press, 2022), 153.

¹⁸ Ibid.

¹⁹ Ibid.

Miksza draws heavily on the research of psychologist K. Anders Ericsson. Ericsson's work also greatly influenced the writing of well-known journalist Malcom Gladwell and his bestselling book "*Outliers*," where he coined the term the *10,000-hour rule*. Gladwell surmises that time or practice in a single subject leads to mastery, but this breaks from Ericsson's true point, that the quality of time and practice determine the end result. To clarify this distinction, Ericsson separated practice into three areas; naïve practice, purposeful practice, and deliberate practice.²⁰ Because Ericsson's categories of practice underpin numerous pedagogical theories, they warrant further examination here.

Ericsson defines naïve practice as “doing something repeatedly and expecting that the repetition alone will improve one's performance”²¹ . However, once a skill becomes automated, continued repetition without targeted intervention leads to a plateau in performance. This form of practice would be akin to a percussionist playing through the same section of music repeatedly, assuming that repetition alone will improve the quality of playing.

“Purposeful practice” is characterized by clearly defined goals, intentional work beyond one's comfort zone, sustained focus and intensity, the incorporation of feedback and correction, and the learner's active, creative engagement in solving technical challenges.²² This would be akin to a percussionist playing in a full ensemble rehearsal where feedback is provided but in a generalized and limited basis. It could also be taking place in the form of an individual lesson, or a student recording themselves and consistently adjusting based on the playback.

²⁰ Eric Andersson, *Peak* (Toronto: Penguin Random House, 2016), 20–21.

²¹ *Ibid.*, 23–24.

²² *Ibid.*, 28–30.

The third category, “deliberate practice,” expands upon “purposeful practice” by incorporating the guidance of a coach or instructor who offers direct, immediate feedback and modifies exercises or strategies to address problems as they emerge. A clear example would be a sectional or focused front ensemble rehearsal in which an instructor continuously provides feedback and makes real time adjustments.²³

“Deliberate practice” describes principles that are regularly embedded in the pedagogy of marching percussion, particularly within front ensembles, where music is systematically broken down and targeted exercises are designed to address specific technical and musical challenges. As a result, many students gain firsthand experience with efficient and structured practice methods in a collaborative setting. The challenge, however, lies in transferring this process to the learning of solo literature. In many cases, the issue is not a lack of knowledge of how to practice effectively, but rather a failure to apply those same structured strategies in individual practice.

If students have already experienced structured, feedback-driven rehearsals within a marching percussion context, then the challenge is not to reinvent how they practice, but to consciously transfer those same principles to their individual work on solo literature. Through the application of marching percussion exercises learned in the front ensemble, to the learning of solo marimba literature, students will move beyond the “naïve practice” method of pure repetition to “purposeful practice.”

Importance of Improvisation

For the saxophonist and composer Raymond MacDonald, “Improvisation is a defining aspect of music making. No longer a musical skill conceptualized as the preserve of elite jazz musicians, improvisation is now taught and researched as a creative, universally accessible

²³ Ericsson, *Peak*, 105–106.

musical skill at universities, conservatories, and music schools around the world.”²⁴ Over the past two decades, improvisation has gained substantial recognition in both academic and performance settings, with festivals, university courses, and research initiatives dedicated to its study and application.²⁵ This trend, however, has largely bypassed the marching arts, where improvisation is irrelevant; because of the strong emphasis on visual precision and musical uniformity among performers, improvisation is deemed unnecessary.

To some in the marching percussion community, this may seem like an obvious statement. And from my own discussions with several experts of the field, the general consensus was that improvisation does not carry much value in this genre. This presents a pedagogical challenge because improvisation and creative practice have been demonstrated to be beneficial to musicians in general. Eeva Siljamäki and Panagiotis Kanellopoulos found that improvisation in music is not only a part of the music learning process, but is also a core musical principle.²⁶ According to their study, *Mapping Visions of Improvisation Pedagogy in Music Education Research*, improvisation is “a means for cultivating a more open attitude of sound,” “a means for exploring and developing social relationships,” “a means for learning and understanding music,” “a means for skill development,” and “a tool for eliciting novel responses.”²⁷

²⁴ Raymond MacDonald, “Improvisation,” *The Oxford Handbook of Music Performance* (Oxford: Oxford University Press, 2022), 214–215.

²⁵ Frank J. Barret, Julie Huffaker, Colin M. Fisher & Didier Burgaud, “Improvisation and Transformation,” *Handbook of Organizational and Transformational Handbook*. Springer, Cham. (March 2018): 2, https://doi.org/10.1007/978-3-319-29587-9_6-1.

²⁶ Eeva Siljamäki, and Panagiotis A. Kanellopoulos, “Mapping Visions of Improvisation Pedagogy in Music Education Research,” *Research Studies in Music Education* 42, no. 1 (July 2019): 113-139.

²⁷ *Ibid.*, 126.

If improvisation is understood, as Siljamäki and Kanellopoulos suggest, to be a core musical principle rather than a stylistic accessory, then its omission from marching percussion represents a significant pedagogical gap. This can be remedied by the adoption of marching percussion exercises into personal practice as a basis for teaching improvisation. This approach is successful because it mirrors the way that many students approach learning to improvise in jazz. Michelle Biasutti has written, most pedagogical approaches to improvisation emphasize the development of fundamental skills, typically through isolated melodic, harmonic, and rhythmic exercises.²⁸ This parallels my method, which introduces into a selected musical excerpt a single focused variable, such as a specific stroke type or front ensemble exercise, or, what Biasutti would describe as an isolated melodic, harmonic, or rhythmic element. Whereas a jazz student might apply such an isolated variable within the context of a jazz standard, my approach applies that variable to a standard piece of marimba literature.

Another widely used strategy for developing improvisational fluency is the study of “riffs.” In this approach, the student begins with a short two to four beat melodic motive and practices it in multiple keys. Although the riff may originate in C major, by systematically transposing it through all major and minor tonal centers, the player gains a comprehensive command of the melodic material. Through this process, the concept is internalized to such a degree that it can be fluidly adapted and incorporated into a wide range of improvisational settings. Jeff Pressing, a scholar on improvisational research, describes this method as the ‘riff’ approach to jazz improvisation which “sets out patterns, models and procedures specific to the improvisational

²⁸ Michelle Biasutti, “Improvisation the Processes: Applications in Music Education and Implications for General Music Education” *Frontiers in Psychology* no. 8 (June 2017): 1.

situation, which, if followed by those possessing a solid enough level of musicianship, will produce stylistically appropriate music.”²⁹ Current examples include, the Aebersold ‘riff’ approach to teaching jazz improvisation.³⁰ The approach of exhausting all applicative possibilities of a single melodic idea is a skill that is also regularly used in rudimental percussion, known as ‘gridding,’ as seen in figure 1.

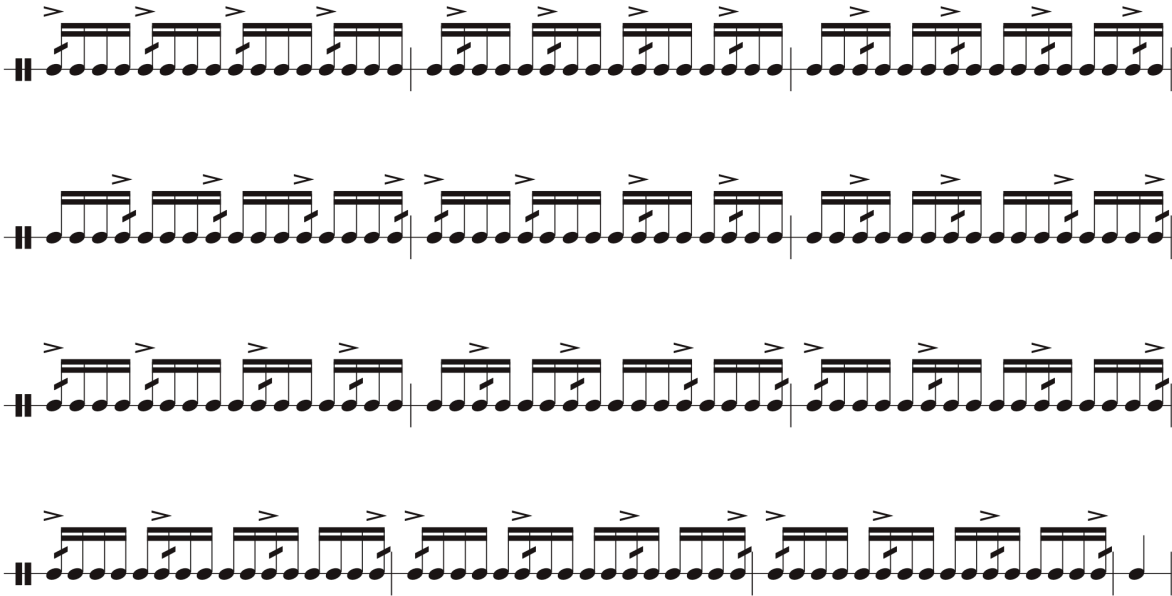


Figure 1. 16th note accent grid with diddles.

Figure 1, “16th Note Accent with diddles,” demonstrates how ‘gridding’ is applied to an exercise. The rudiment or variable, in this case an accent, is played on every partial of a beat. Once this is mastered, additional variables can be added, such as keeping the rudiment on beat one while the accent moves, moving the rudiment while keeping accents on beat one, or playing the exercise backwards. This same process would then be applied to other rudiments and in other combinations with one variable changing at a time. Very rarely would a student play a grid

²⁹ Jeff Pressing, “Improvisation: Methods and Models,” in *Generative Processes in Music*, ed. John A. Sloboda (Oxford: Clarendon Press, 1988), 12.

³⁰ Maud Hickey, “Can Improvisation be ‘Taught’? A Call for Free Improvisation in Schools,” *International Society for Music Education* 27, no. 4 (November 2009): 285–286.

exercise in a performance or in a piece of show music, but by going through the gridding process the player will gain a technical mastery allowing them to draw on the skill at a given moment in performance. This mirrors the process of learning riffs in all tonal centers so that they may be applied at will.

Gridding is also regularly applied to front ensemble exercises, most notably the exercise “Broccoli.” “Broccoli” is a common permutation exercise that takes one stroke, a lateral stroke, and moves through a variety of rhythms and sticking patterns. A particularly well-known variation of this exercise appears in the Cavaliers Drum and Bugle Corps front ensemble packet, which expands the traditional sixteenth-note framework to include other tuplet variations, significantly increasing its rhythmic complexity beyond the standard sixteenth note model.

Improvisation on the marimba is not typically emphasized in the study of solo repertoire, however, it remains a central practice among many of the instrument’s leading performers. Mark Ford has discussed beginning his practice sessions by improvising and then moving on to technical exercises “based on pieces that [he’s] preparing at the time.”³¹ Gordon Stout, a prolific composer and noted percussionist, uses improvisation as a source for developing ideas for his compositions. Unlike Ford, Stout begins his practice time with technique and accuracy-based warm-ups which leads to improvising and the development of ideas. Stout has said that he generally starts his warm ups with double verticals strokes, a common four mallet marimba technique that utilizes both mallets in one hand simultaneously, and then “explores different kinds of harmonies and structures...That’s not often my specific intent, it just kind of happens sometimes.”³² Mathew Duvall, founder and director of the Grammy winning ensemble *Eighth*

³¹ Hill, “The 10,000 Hour Threshold,” 85.

³² Ibid.

Black Bird, has said that he regularly turns troublesome passages into exercises, simultaneously developing these technical skills and creative abilities. Duvall states this method of practicing creates a more engaging and entertaining practice session.³³ Gary Cook said this of his own method: “I like to be inventive and sort of improvise too because it’s more fun that way.”³⁴ Cook finds greater enjoyment in creating his own improvisations centered on a single stroke type, a very similar approach to the method laid out here.³⁵

By integrating improvisation practice into everyday study, performers will develop greater technical control but also a deeper and more personal understanding of the music. The esteemed double-bassist Barry Green wrote, “When I improvise, I strengthen my connection with my own musicality and can bring an increased spontaneity and freshness to my performances.”³⁶ Virtuoso marimbist Keiko Abe expressed a similar sentiment: “I’ve always been concerned about making my own performance as rich and varied as possible. I had to find a way to ensure 100% concentration during performances, and to achieve a creative space in my playing that transcends mere technique. I did not achieve that goal until I began to improvise, both alone and in ensemble.”³⁷ Abe thus credits improvisation for catalyzing her mastery of the instrument.

³³ *Ibid.*, 80-81.

³⁴ *Ibid.*

³⁵ *Ibid.*, 63.

³⁶ “The Inner Game of Music”, 209.

³⁷ Lauren Vogel Weiss, “PAS Hall of Fame: Keiko Abe,” Percussive Arts Society, accessed January 14, 2026, <https://pas.org/keiko-abe/>.

History of Solo Marimba

The precursors of modern mallet instruments are among the oldest known melodic instruments, with archaeological evidence suggesting that some examples date the Neolithic period, up to 9,000 years ago.³⁸ Originating in sub-Saharan Africa, mallet percussion instruments slowly found their way into the European orchestra halls in the mid-nineteenth century in the form of xylophones and glockenspiels, and they are now central to the composition toolbox.

From Africa, the marimba spread to Central America through transatlantic slave trade networks, where it became deeply embedded in regional musical life.³⁹ Today, the marimba is recognized as the national instrument of Guatemala and serves as an important cultural symbol in Mexico, Honduras, Nicaragua, and Costa Rica. The instrument was later introduced to the United States in the early twentieth century, most notably through the touring performances of the Hurtado Brothers Royal Marimba Band.⁴⁰ David Eyler, an expert on the development of the marimba, discusses the Hurtado Brothers at length in his highly referenced dissertation. Eyler noted that the "importance (of the Hurtado Brothers music) to the development of the modern marimba keyboard as we know it today, with a fully chromatic range, and the rise in popularity of the marimba, as evidenced by its use in acoustic recordings as well as the appearance of marimba orchestras performing in this country and abroad, cannot be [over]stated."⁴¹ The

³⁸ Russel Hartenberger, *The Development of Percussion Instruments* (Cambridge: Cambridge University Press, 2016), 41.

³⁹ *Ibid.*, 42.

⁴⁰ Lauren Vogel Weiss, "PAS Hall of Fame: Hurtado Brothers Royal Marimba Band," Percussive Arts Society, accessed January 25, 2026, <https://pas.org/hurtado-brothers-royal-marimba-band/>.

⁴¹ *Ibid.*

marimba developed by Sebastian Hurtado at the end of the nineteenth century, most closely resembled the modern marimba up to that point. Prior to this, the marimba was constructed as a pentatonic instrument, comparable to only using the black keys of the piano. Following the Hurtado Brothers' introduction of the chromatically constructed marimba to the United States, manufacturers such as U.G. Leedy and J.C. Deagan began producing their own versions of the instrument, outfitted with nickel-plated brass resonators.⁴²

Any discussion of the development of mallet percussion in the twentieth century must include George Hamilton Green. A virtuoso xylophonist from Omaha, Nebraska, Green began performing at age eleven on an instrument he constructed himself. In 1917 he relocated to New York City, where he joined the Earl Fuller Rector Novelty Orchestra, marking the beginning of his significant influence on early-twentieth-century percussion performance practice. Green was regularly featured on radio stations playing jingles for Wrigley's Spearmint, Philco, General Motors, and Maxwell House, among others. In addition to jingles, Green was one of the most prominent recording artists of popular music, having recorded more than 150 titles as a band leader or co-leader for companies like Edison, Victor, and Columbia over the span of his career.⁴³

Green's recordings and performances greatly contributed to the expansion of mallet percussion in the United States. But it was his series of fifty lessons that most profoundly transformed the way percussionists practice and conceptualize keyboard percussion technique. In 1926, Green began to release lessons consisting of a few pages of music and instructions, sold for one dollar. The purpose was for a student to purchase each lesson which contained a variety of

⁴² Frank K. MacCallum, *The Book of the Marimba* (New York; Calton Press, 1969), 31.

⁴³ Frederick D. Fairchild, "PAS Hall of Fame: George Hamilton Green," Percussive Arts Society, accessed January 25, 2026, <https://pas.org/george-hamilton-green/>.

exercises. A student who worked through all fifty lessons would become an “excellent mallet percussionist.”⁴⁴ A century later, many of the exercises remain foundational tools for front ensembles and percussionists seeking to refine their technical facility. As demonstrated later in this study through the analysis of multiple front ensemble warmup packets, every warmup packet I examined included either Green’s original exercises or a closely related adaptation derived from his fifty-lesson framework, underscoring the enduring significance of his contribution to percussion pedagogy.

Marimba-type instruments maintained their popularity from the 1920s into the 1950s, evidenced by the success of the Majestic Marimba Band, Nathan Glantz and his Marimba Band, Music Lovers’ Marimba Orchestra, Azuley Blanco’s Marimba Band, and the Harry Breur Trio, among others.⁴⁵ Most of these groups consisted of full ensembles of mallet percussion instruments, sometimes interspersed with other instruments.⁴⁶ Marimba bands were staples of county fairs, dance and club events, radio and television shows, silent films, and vaudeville shows.⁴⁷ Marimba bands were formed all around the United States, and their versatility and popularity can be summed up by a review of Damon H. Shooks’s Royal Collegians Marimba Band of Milwaukee in the *Leedy Drum Topics* periodical:

That the marimba band is one of the most popular musical ensembles today, both because it is a deviation from the conventional and because of its all-embracing appeal, is proved by the sensation that the Royal Collegians Marimba Band creates wherever it

⁴⁴ George Hamilton Green, *George Hamilton Green’s Instruction Course for Xylophone*, ed. Randy Eyles and Garwood Whaley (Florida: Meredith Music Publications, 1982), 2–3.

⁴⁵ David Paul Eyer, “The History and Development of the Marimba Ensemble in the United States and Its Current Status in College and University Percussion Programs” (Monograph, Louisiana State University, 1985), 80-81.

⁴⁶ *Ibid.*, 81.

⁴⁷ *Ibid.*, 85.

plays. Made up of high school and college students who were taught and are directed by Damon H. Shook, every member plays saxophone and at least one other instrument with the result that the organization besides being a marimba band is a saxophone band and a dance band as well, and plays concert, radio, theatre, and dance engagements the year around. [This] band is made up of twelve instrumentalists who live in Milwaukee and vicinity and uses four solo xylophones, three accompanying mellorimbas, three obbligato marimbas, one Monarch bass marimba, and one Grand marimba— all Leedys. Organized five years ago and is steadily gaining in popularity with ever-increasing demands for its services.⁴⁸

Up until the late 1940s, the marimba was largely held to the genre of dance hall entertainment and vaudevillian performances with few exceptions, though some musicians began to challenge these conventions. Celso Hurtado, nephew of Sebastian Hurtado, regularly performed solo performances that would integrate Central American folk music alongside arrangements of Debussy and Paganini. Although Celso had been performing solo concerts since as early as 1922, it was not until April 7, 1947, in his landmark Carnegie Hall performance, that he would become the “first marimba soloist to perform on that world-renowned stage.”⁴⁹ Celso’s arrangements of Paganini’s Violin Concerto No. 1 in D Major, the Hungarian Dance No. 6 by Johannes Brahms, the Etude No. 3 in G sharp minor by Franz Liszt, and many other works would challenge the greatest of concert musicians. His sold-out performance was met with a positive response, earning him a review in the *New York Times*, which reported on April 8, 1947, that

Celso Hurtado, who was born in Guatemala but is a resident of California, tried something different at Carnegie Hall last night — a solo program for the marimba. He played an instrument he has designed himself, and he achieved astonishing feats of virtuosity as to speed, crossing of hands, intertwining of the four sticks with which the marimba is played, and the achievement of varying sound effects. To watch Mr.

⁴⁸ Rob Cook, “Royal Collegians Marimba Band,” *Leedy Drum Topics* 1/24 (December 1935): 24–25.

⁴⁹ Vogel Weiss, “PAS Hall of Fame: Hurtado Brothers Royal Marimba Band.”

Hurtado's skillful deployment over the instrument was as fascinating as observing a trick acrobat.⁵⁰

Celso's performances expanded perceptions of the marimba, demonstrating its artistic possibilities beyond the vaudeville conventions with which it had long been associated, creating opportunities for other solo marimbists.

Clair Omar Musser was a contemporary of Celso, who exerted an equally significant influence on the development of the marimba. Musser designed and developed several marimba-type instruments, including the marimba-celeste, which retained a construction similar to the traditional marimba but substituted metal bars in place of wooden ones. Musser toured extensively through the United States, Canada, and Europe performing on the marimba-celeste as a recitalist and guest soloist with symphony orchestras.⁵¹ Some of his most notable contributions to the field were the 100-piece marimba orchestra performance at the 1933 Chicago World's Fair, and the standardization of a four-mallet technique, referred to now as "Musser grip." Later in his career, Musser accepted a position as Professor of Percussion at Northwestern University, where he mentored numerous influential percussionists. Among his most notable students was Vida Chenoweth.

Chenoweth (1928–2018), a marimba virtuoso from Enid, Oklahoma, was arguably the most influential of Musser's students. A graduate of Northwestern University and the Alliance Française in Paris, Chenoweth further advanced the marimba's presence in the concert hall through her 1956 New York City Town Hall recitals and her 1959 premiere of Robert Kurka's Concerto for Marimba and Orchestra, Op. 34, at Carnegie Hall. *The New York Times* praised her

⁵⁰ H.T. (Howard Taubman), "Celso Hurtado Heard," *The New York Times*, April 8, 1947, p. 33.

⁵¹ Eyley, "The History. And Development of the Marimba Ensemble," 100.

exceptional technical command, while *Musical America* declared, “Miss Chenoweth is to the marimba what Segovia is to the guitar and Casals is to the cello.”⁵² She would go on to tour throughout the United States and perform on six continents, catalyzing the creation of new marimba repertoire. Chenoweth was also the first marimbist to release a solo album for the instrument, recording works by J.S. Bach, Musser, and the “Suite for Marimba” by Alfred Fissinger.⁵³ Similarly to her teacher, Musser, Chenoweth would have several students who would go on to redefine the capabilities of the marimba, including Leigh Howard Stevens.

At a similar time to Vida Chenoweth, on the opposite side of the world, Keiko Abe, a Japanese marimbist from Tokyo, brought the marimba to prominence in Asia. Abe, like Chenoweth, pushed the capabilities of the instrument through virtuosic playing. Abe is also notable for her incorporation of improvisation into her playing. Abe stated, “First I tried to copy artists like Milt Jackson and Lionel Hampton, but one day I realized that these were their voices, not mine. I decided that I needed to find out my own way — my music, my heart.”⁵⁴ Abe has said that improvisation is a core element of her compositional style and performance capabilities, giving her performance style a raw and emotional quality that has entranced audiences for decades:

With these deep feelings, it is very important for me to continue to commission new works and try to compose music which explores the expressive and emotional possibilities of the marimba to communicate to the listeners who come to my concert. Whether the composition has a strict form or explores improvisational possibilities, whether it is tonal or atonal, whether it is slow and ambles or it is fast and direct, I hope the music of the

⁵² As quoted in Lauren Vogel Weiss, “In memoriam: Vida Chenoweth,” Percussive Arts Society, accessed January 27, 2026, <https://pas.org/vida-chenoweth/>.

⁵³ James A. Strain, “PAS Hall of Fame: Vida Chenoweth,” Percussive Arts Society, January 26, 2026, <https://pas.org/vida-chenoweth-2/>.

⁵⁴ Weiss, “PAS Hall of Fame: Keiko Abe.”

marimba will always focus on real communication rather than technical virtuosity for its own sake.⁵⁵

Abe's compositional contributions to the marimba world include some of the instrument's most revered and performed works, ranging from playful tunes like *Frogs* (1958) to emotional and lyrical works like *Dream of the Cherry Blossoms* (1984) to powerful and virtuosic pieces like *Variations on Japanese Children's Songs* (1982). Abe expanded the marimba's expressive and cultural dimensions, integrating improvisation, commissioning, and composition into a deeply personal artistic voice. Both Chenoweth and Abe transformed the marimba from a novelty instrument into a fully realized concert medium, laying the groundwork for the expansive and virtuosic repertoire that defines contemporary marimba performance today.

From its ancient origins to its establishment on the world's most prestigious concert stages, the marimba's evolution reflects a continual process of cultural exchange and technological innovation. Figures such as George Hamilton Green, Celso Hurtado, Clair Omar Musser, Vida Chenoweth, and Keiko Abe each contributed to defining the instrument's technical possibilities and artistic legitimacy. Building upon the foundation established by these earlier pioneers, numerous marimbists have since risen to international prominence, including Gordon Stout, Nancy Zeltsman, Michael Burritt, Eriko Daimo, Katarzyna Myćka, Robert Van Sice, Theodor Milkov, Svet Stoyanov, among others. As we enter the mid twenty-first century, the marimba has secured its position not merely as a novelty or auxiliary instrument, but as a fully realized solo medium capable of profound expressive depth and virtuosic display. Understanding this lineage provides essential context for examining modern pedagogical approaches and the continued integration of technique, repertoire development, and improvisation within marimba performance today.

⁵⁵ As quoted in Lauren Vogel Weiss, "PAS Hall of Fame: Keiko Abe."

History of Drum Corps, WGI, and Marching Band

An examination of the historical development of marching band provides essential context for its pedagogical and cultural significance within contemporary music education, as well as why its technical and formulaic approach to practice has proven so effective. Contemporary marching band grew out of the drum and bugle corps tradition which, in turn, grew from military traditions in the early twentieth century, particularly those of veterans' organizations such as the Veterans of Foreign Wars (VFW) and the American Legion.⁵⁶ After World War I, returning soldiers formed community-based drum and bugle units that used surplus military instruments, primarily G bugles and rope-tension snare drums, to maintain camaraderie and ceremonial music-making. These early corps were closely tied to parades, civic events, and memorial services. By the 1930s and 1940s, competitive events sponsored by veteran's organizations helped standardize instrumentation and performance practices, fostering regional and national circuits that encouraged musical and visual excellence.⁵⁷ The activity experienced significant growth, with the number of corps peaking at approximately 2,500 by the mid-1960s. Since the 1970s, however, participation had declined, largely due to widespread opposition to the Vietnam War, which led to reduced membership in veteran's organizations and, in turn, diminished financial and institutional support for drum and bugle corps. By the late 1960s, junior drum and bugle corps had become widespread throughout the United States and began pushing back against the highly regimented military traditions and restrictive policies imposed by the American Legion and the VFW. Seeking greater creative freedom and control

⁵⁶ Scooter Pirtle, "Evolution of the Bugle," *The Middle Horn Leader*, accessed January 3, 2026, <http://www.middlehornleader.com/>.

⁵⁷ Dennis DeLucia, Steve Vickers, Susan Cifaldi, and Eric M. Stein, "Drum Corps," *Grove Music Online*, accessed January 3, 2026. <https://www.oxfordmusiconline.com>.

over their activity, directors from thirteen leading corps came together in 1972 to establish Drum Corps International (DCI). This new organization allowed corps to define their own competitive and artistic standards, transforming the activity into a uniquely modern performance art. While DCI remains primarily centered in the United States, its influence has expanded globally, with corps now established in Canada, England, the Netherlands, Germany, various parts of the Far East, the Philippines, and South Africa.⁵⁸

Out of the drum corps genre developed Winter Guard International (WGI). WGI developed in 1977 as an activity designed to showcase the color guard, a visually oriented section of the drum corps that performs with equipment such as flags, rifles, and sabers. The mission of the organization was to represent all of color guard's programs across the United States, culminating in a central annual competition.⁵⁹ Although the organization began as a way to support the color guard, in 1993 they added the indoor percussion section, which created a circuit for percussion-only ensembles to compete on a national basis. The indoor percussion category grew rapidly, and WGI became a full-service organization that now, in addition to guard and percussion, has categories for just winds. Because WGI splits the three sections of the drum corps into their own competitive groups, each section has been able to push the capabilities of their mediums. The Indoor Percussion field has grown considerably, and the WGI's online database maintains a list of more than 1,100 indoor percussion ensembles, ranging from middle school through collegiate programs.⁶⁰

⁵⁸ "About Drum Corps International," Drum Corps International, accessed January 3, 2026, <https://www.dci.org/about-drum-corps-international>.

⁵⁹ "History," Winter Guard International, accessed January 3, 2026, <https://www.wgi.org/about-wgi/history/>.

⁶⁰ Ibid.

While drum corps grew out of military tradition, the use of marching bands began in public secondary school systems in 1857 with the Boston Farm School, a year-round boarding school for orphaned boys located on Thompson Island in Boston Harbor. Students at this school were required to enlist in the military after graduation. The superintendent of the school believed that students would be better prepared if they possessed a skill that would increase their value within a military context. A full-time band director was hired, and musicians from the Boston Symphony visited the school to offer private lessons twice a month. Students would rehearse twice a day in addition to their other courses and practiced marching formations which they demonstrated in parades around the Boston area.⁶¹ Now there are over twenty thousand high school marching band programs in the United States, with some programs supporting over five hundred members.⁶²

Throughout the twentieth century, marching bands have become a staple of high school and collegiate music programs, accompanying football games and local festivals, and hosting convivial competitions on an annual basis. The first marching band was established at the University of Notre Dame in 1845 and performed at a football game for the first time in 1887. Since then, the marching band has regularly performed at home football games for nearly 150 years.⁶³ In the mid- to late-nineteenth century, university marching bands were established across

⁶¹ David Guion, “School Bands in the United States,” *Musicology for Everyone*, September 2, 2019, <https://music.allpurposeguru.com/2019/09/school-bands-in-the-united-states/>.

⁶² Burkhard Bilger, “High-School Band Contests Turn Marching into a Sport and an Art,” *The New Yorker*, February 10, 2025.

⁶³ “History,” Notre Dame Band, last modified 2026, <https://band.nd.edu/about/history/>.

the United States, including the University of Illinois (1867), Purdue University (1886), and the Ohio State University (1878).⁶⁴

Modern day marching bands and drum corps programs look vastly different from the marching bands of the 1800s, which primarily consisted of trumpets and rope tension drums. Up until the 1960s, the percussion section consisted of only snare drums, bass drums, and cymbals. In the mid-twentieth century, the instrumentation evolved to include flat bass drums, multi tonal toms known as triple tenors, and marching timpani. By the late 1970s, drum corps and marching bands would see the introduction of marching mallet percussion instruments like bells, xylophone, vibraphone, and marimba, but all these instruments were still attached to the performer. In 1982, the “pit” was introduced to DCI. At that time, the keyboard percussion instruments, along with auxiliary percussion instruments and timpani, were moved to the front sideline.⁶⁵ The front ensemble was treated similarly to an orchestral pit, meaning players were not set to one specific instrument; instead, they moved around from movement to movement playing a variety of instruments.⁶⁶ An example of this would be Santa Clara Vanguard’s show; *The Phantom of the Opera* (1989). Players can be seen moving from marimba, to timpani, to accessory percussion instruments throughout the show. But this performance practice would end

⁶⁴ Sophia Alexandra Hall, “How the Marching Band Became a Staple of American Music Education,” Classic FM, accessed January 4, 2026, <https://www.classicfm.com/discover-music/music-education/marching-band-american-schools/>.

⁶⁵ “The First Pit Performer and the Birth of the Pit,” Drum Corps International, accessed January 3, 2026, <https://www.dci.org/news/the-first-pit-performer-and-the-birth-of-the-pit/>.

⁶⁶ Robert Morrison, “The Development of the Front Percussion Ensemble,” *Percussive Notes* 23, no. 5 (July 1985): 32, <https://pas.org/publication-articles/the-development-of-the-front-ensemble/>.

in the mid 1990s with players staying primarily to one instrument for the totality of the performance.⁶⁷

In 2004 the use of amplification, electronics and synthesizers became standardized, revolutionizing the role of the front ensemble in the activity and the way the instruments were played.⁶⁸ Prior to the use of amplification and the use of stationary instruments, the compositional approach focused primarily on projection and balance to the horn line and battery.⁶⁹ By this time, significant works had already been written for the marimba and solo percussion, but the outdoor performance was limiting. With the integration of amplification, composers and arrangers were able to take greater liberties and integrate compositional techniques that had already been utilized by famed percussion composers like Musser, Stout, and Abe.⁷⁰

This new way of writing for keyboard percussion can be clearly heard in shows such as *Niagara Falls* (2000) by the Cavaliers Drum and Bugle Corps, and *On Air* (2007) by the Phantom Regiment. Notable arranger Sandi Rennick, who composed for the Phantom Regiment front ensemble from 2003 to 2010, alongside her husband Paul Rennick, would greatly increase the technical capabilities and the way we compose for the front ensemble. This style of writing reflected the works of Eric Sammut, Gordon Stout, and Christopher Deane by including

⁶⁷ Lane Wendel Summerlin, “The History and Development of the Front Ensemble in Drum Corps International” (DMA doc., The Ohio State University, 2016) 48–9, <https://www.dci.org/news/the-first-pit-performer-and-the-birth-of-the-pit/>.

⁶⁸ *Ibid.*, 87–8.

⁶⁹ *Ibid.*, 85.

⁷⁰ Timothy Heath, “A Look Behind: A Conversation with Iain Moyer, Front Ensemble Arranger and Supervisor for the Cadets.” *Percussive Notes* 52, no. 3 (May 2014), 6.

permutations, long arpeggiated sections in congruence with incredibly fast scalar passages similar to those found in George Hamilton Green's virtuosic xylophone playing from the 1920's.⁷¹

As this new style of writing for the front ensemble became standardized, so did the set of warm-ups and exercises to accompany them. In the rudimental percussion field, it is common to have a set of exercises that develop fundamental skills that are then drawn on to write show music, similar to the exercises developed by Green in his *Instruction Course for Xylophone*. Green's exercises are drawn on significantly by front ensembles because of their exhaustive approach to scalar and arpeggiated patterns for keyboard percussion. These exercises commonly, referred to simply as "Green Scales," have become standard for almost all front ensemble warm-up packets.

The historical development of marching band, drum corps, and indoor percussion reveals a trajectory marked by technological innovation and expanding artistic ambition. From its origins in military ceremony to its current status as a sophisticated performance art, the activity has continually redefined its role in the percussion world. Through the introduction of the front ensemble, followed by amplification and electronic integration, marching mallet percussion has been fundamentally changed to reflect solo marimba literature and pedagogical traditions such as those of George Hamilton Green.

The near universal adoption of Green's scale exercises across front ensembles underscores the shared pedagogical lineage within the activity. Despite stylistic innovation and competitive divergence between organizations such as DCI and WGI, the technical foundation of keyboard percussion training remains remarkably consistent. This continuity suggests that modern front ensemble performance, while progressive in its musical language, is firmly rooted in a historically

⁷¹ Summerlin, "The History and Development of the Front Ensemble," 285.

informed and standardized approach to technical development. This technical development is clearly visible in their front ensemble packets.

Chapter 3 – The Method

Analysis of Front Ensemble Packets

To establish a pedagogical foundation for this study, it is necessary to first understand what the musical vocabulary of the front ensemble is. By identifying the most common exercises and ways that they are used within the front ensemble, a clearer understanding emerges of the shared technical language of keyboard percussion. The following analysis outlines the core technical exercises that inform the development of the proposed method.

For this study, fifteen front ensemble packets have been analyzed; five DCI groups, five WGI groups, and five high school groups. While no standardized packet exists across all ensembles, the warm-up materials exhibit substantial overlap, resulting in a common technical foundation within the activity. This consistency is largely attributable to high school programs modeling their warm-up materials after DCI and WGI ensembles, often under the guidance of instructors who have direct experience within those organizations. In these packets, exercises are developed to build one of four specific stroke types: double vertical, single independent, single alternating, and lateral strokes. A fifth stroke type may be identified as the combination stroke, which consists of the integration of any two of the four previously defined stroke categories within a single coordinated motion. The description of these strokes is in relation to the most common four mallet grip used in front ensemble playing, “Steven’s grip,” named after marimba virtuoso, Leigh Howard Stevens. Nevertheless, the other commonly used four mallet grips are certainly able to play all of these strokes and subsequent exercises. By identifying the most common exercises, my P.I.T. Method of teaching improvisation and purposeful practice will be applicable to the widest array of students.

The four stroke types that make up four mallet keyboard technique are double vertical, single independent, single alternating, and lateral strokes. All four-mallet literature can be broken

down into one of these four strokes. Because the music can be isolated to one of these four strokes, exercises in front ensemble packets focus on developing them individually. The double vertical stroke serves as the foundational motion for four-mallet independent marimba technique. In this stroke type, all four mallets move together in a unified vertical motion, ascending and descending simultaneously to strike the keyboard at the same moment. Single independent strokes cultivate the ability to articulate repeated notes with one mallet while maintaining stability in the other mallet held in the same hand. This technique relies on a controlled rotational pivot in which the active mallet moves around the stationary mallet shaft. Such motion is commonly employed when executing rolls with the inside mallets or performing scalar passages that require independent control within one hand. The single alternating stroke involves the alternation of two pitches within one hand, achieved through controlled wrist rotation. This motion facilitates the execution of rapid arpeggiated passages and Alberti-style figures with clarity and efficiency. The lateral stroke integrates the double vertical motion with controlled wrist rotation. Within a single continuous gesture, the stroke produces two successive pitches. The motion begins similarly to a double vertical stroke, however, just prior to contact with the keyboard, the wrist rotates, allowing each mallet to strike separately while remaining part of the same unified movement. A fifth stroke category can be identified in the form of the combination stroke. As the name suggests, this stroke type integrates elements of the four previously described motions into a unified technical gesture. Combination strokes are frequently encountered in contemporary keyboard percussion literature. Within front ensemble pedagogy, relatively few exercises are explicitly devoted to their isolated development.

My analysis found that single independent exercises were the most prevalent, especially the use of “Green Scales.” This exercise was found in all packets. The second most common exercises found in the analysis of these packets were double vertical exercises. In contrast to the

near universal adoption of “Green Scales,” most ensembles employed their own distinct versions of double vertical exercises, though each remained grounded in a shared technical approach. The third most common exercises were based on lateral stroke, specifically an exercise called “Broccoli.” This exercise was found in twelve of the fifteen packets. The least adopted stroke type was single independents, but this is due to its implementation within double vertical exercises. This reflects a common pedagogical approach in which foundational exercises are established in their most basic form and subsequently expanded through the integration of additional stroke types. Examples of this approach can be observed in Phantom Regiment D&BC’s “Broken Chords,” Cascades D&BC’s “Bridges,” and Burleson High School’s “Hyper Space.” The last category, combination strokes, was found in only one packet, which is why it has been removed from the four core stroke types analyzed within this method. Figure 2 provides an aggregated distribution of techniques across all front ensemble packets.

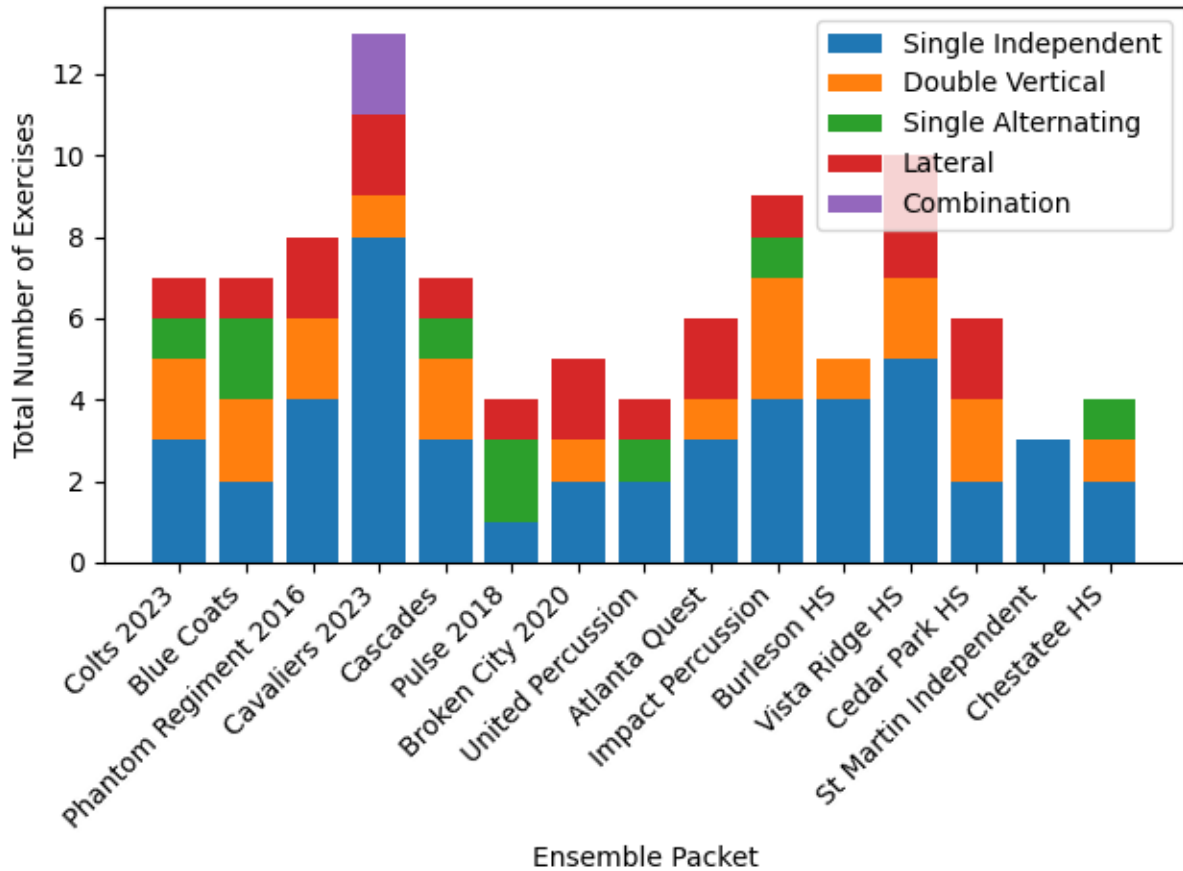


Figure 2. Frequency of different exercises by stroke type in various ensemble packets.

The stacked bar chart, seen in figure 2, organized by five DCI groups, five WGI groups, and five High School groups, reveals a hierarchy across the fifteen front ensemble packets analyzed. Single independent strokes overwhelmingly constitute the largest proportion of exercises in nearly every ensemble, functioning as the foundational technical layer of instruction. Programs such as the Cavaliers, Vista Ridge High School, Phantom Regiment, and Impact Percussion demonstrate especially high densities of single independent material. It is important to note that although the Cavaliers are the only ensemble to include combination stroke exercises within their packet, it is common practice for programs to introduce combination exercises later in the season.

Another noteworthy observation is the comparatively lower volume of written exercises in packets from highly competitive ensembles such as United Percussion, Pulse Indoor, and Broken City Indoor. Although these groups are widely regarded as operating at a caliber comparable to the Cavaliers and Phantom Regiment, their materials reflect a distinctly different pedagogical approach. This contrast suggests that while some ensembles prioritize comprehensive written ensemble packets, others rely more heavily on rote instruction and in-rehearsal exercise adaptations as teaching tools. It is also worth noting that United Percussion, Pulse, and Broken City are all WGI groups, while the Cavaliers and Phantom Regiment are DCI groups. Given the amount of information in this dataset, it is unclear if this is a coincidence or represents a larger trend between indoor and outdoor percussion programs. It is possible that the lack of horns and guard in WGI allows for more rote instruction because of the increased amount of percussion only rehearsals.

The analysis of these fifteen groups across DCI, WGI, and high school organizations clearly shows that front ensemble pedagogy is built upon a shared technical framework, even in the absence of a standardized packet. Single independent strokes serve as the primary technique developed in each group with double vertical and lateral techniques expanding four mallet fluency. This coincides with the compositional techniques often used in front ensemble show writing, which utilizes extended scalar and single independent passages.

Method Explanation

Within this document, I have selected five marimba solos that are standard in solo marimba repertoire, representing a range of technical demands and difficulty levels. Each work is widely regarded as a significant contribution to the marimba repertoire and is frequently studied

and performed by percussionists. To each excerpt, a front ensemble warm-up has been paired to specifically target one of the four primary stroke categories: double vertical, single independent, single alternating, and lateral strokes, creating the P.I.T. Method.

In certain cases, a specific warm-up exercise is directly applied to the selected solo excerpt. In other instances, the underlying stroke type is isolated and adapted to the passage. This latter approach mirrors common pedagogical practice within the front ensemble setting. When confronting technically challenging passages in show music, instructors frequently analyze the material according to stroke type and construct exercises modeled after established warm-ups to address the specific technical demands of the passage.

Within the broader framework of this project, however, this process extends beyond purely technical remediation. By systematically identifying stroke types, restructuring passages, and applying targeted technical exercises, students engage in purposeful and deliberate practice. As a result, this exhaustive technical approach becomes internalized and the performer gains the capacity to manipulate rhythm, voicing, and articulation more freely, and thus improvising. Through the integration of other exercises and isolated stroke types, students are simultaneously gaining a deeper understanding of the music as well as improvising. In this way, the transfer of front ensemble methodology to solo marimba literature becomes not only a technical strategy, but a means of cultivating deeper musical understanding.

A Little Prayer

The first work I will demonstrate my method with is Evelyn Glennie's *A Little Prayer* from her collection, *Three Chorales for Marimba* (1998). Glennie is widely known for her virtuosic percussion playing and invigorating style, but *A Little Prayer* highlights her softer side. The three

chorales that make up the work are *A Little Prayer*, *A Light in the Darkness*, and *Giles*. Each of these pieces, since they are chorales, primarily consists of rolled chords. This makes them perfect test cases for how my method can be applied to deepen technical and musical understanding of the works.

For *A Little Prayer*, the method is applied to the first four measures of the piece. This practice approach can be applied to the entire piece, but for the purposes of this example, the first stanza has been selected. When playing the passage, the performer will roll all notes, using primarily a double vertical stroke and an unmetered roll base. Additional strokes can be utilized, but this is left to the performer's interpretation and experience level.

EVELYN GLENNIE

Slow

pp

CMaj FMaj CMaj Emin Amin Dmin7 Gsus4 G7 CMaj

Figure 3. Evelyn Glennie, *A Little Prayer*, mm. 1–4.

Block Chords

The first step, as seen below in Figure 4, is to take the passage and turn it completely into double vertical strokes, or block chords, using sixteenth notes as our subdivision. A common error when playing chorales or extended roll passages on the marimba is to obscure the time and harmonic movement, often accompanied by the inadvertent addition of extraneous notes. By

isolating the double vertical stroke in this passage and using a consistent subdivision, the player will ensure they are moving between chords accurately and in time.

The image displays two systems of musical notation for piano accompaniment. Each system consists of a grand staff with a treble clef on top and a bass clef on the bottom. The first system is divided into two measures. The first measure is labeled with a C Major (CMaj) chord above the staff. The second measure is divided into two sub-measures, labeled with F Major (FMaj) and E minor (Emin) chords above the staff. The second system is also divided into two measures. The first measure is divided into two sub-measures, labeled with A minor (Amin) and D minor 7 (Dmin7) chords above the staff. The second measure is divided into three sub-measures, labeled with G suspended 4 (Gsus4), G7, and C Major (CMaj) chords above the staff. The notation includes block chords (vertical strokes) and rhythmic patterns in both hands.

Figure 4. Evelyn Glennie, *A Little Prayer*, mm. 1–4 combined with block chords added.

Single Independent

The next step involves applying single independent strokes to the same passage, seen below in Figure 5. Although any number of repetitions per pitch may be used, this example employs two thirty-second notes per beat in order to preserve the original metric length of each measure. By isolating the single independent motion in this way, the performer develops both technical strength and refined independent control with each hand.

The image shows two systems of musical notation for piano. Each system consists of a grand staff with a treble clef on top and a bass clef on the bottom. The first system contains four measures. The first measure is labeled 'CMaj' and shows a right-hand pattern of sixteenth notes and a left-hand pattern of eighth notes. The second measure is labeled 'FMaj', the third 'CMaj', and the fourth 'Emin'. The second system contains five measures. The first measure is labeled 'Amin', the second 'Dmin7', the third 'Gsus4', the fourth 'G7', and the fifth 'CMaj'. The notation uses various note values and rests to create a complex rhythmic texture.

Figure 5. Evelyn Glennie, *A Little Prayer*, mm. 1–4 combined with single independent strokes.

Single Alternating

The third step maintains the sticking pattern from the single independent variation but replaces the motion with a single alternating stroke, thereby requiring the performer to incorporate controlled wrist rotation into the passage. This technical development is particularly relevant to the execution of extended roll passages, as it expands the performer's capacity to employ multiple roll types. In chorales or sustained roll passages, performers often default to double vertical strokes, resulting in the lower two notes striking together and the upper two notes

striking together in rapid alternation. While this approach is effective and widely used, its repetitive nature can produce a static or homogeneous musical effect. By integrating independent rolls generated through rotational motion, performers gain access to greater tonal variety and expressive flexibility, ultimately fostering a more fluid and musically nuanced performance approach.

The image shows a musical score for piano, consisting of two systems of music. Each system has a treble and bass clef staff. The first system contains four measures with the following chords: CMaj, FMaj, CMaj, and Emin. The second system contains five measures with the following chords: Amin, Dmin7, Gsus4, G7, and CMaj. The notation shows a steady eighth-note pattern in both hands, with the right hand playing a sequence of notes that correspond to the chord changes.

Figure 6. Evelyn Glennie, *A Little Prayer*, mm. 1–4 combined with Single Alternating Strokes.

Lateral Strokes

The fourth step is to apply lateral strokes. To demonstrate this application, I have applied the lateral exercise from the popular warm-up “Broccoli,” as seen in Figure seven below. While there are many lateral warm-ups, “Broccoli” is used ubiquitously across DCI, WGI, and High School groups. Because of its prevalent use, it makes it a perfect exercise to apply to the study of solo marimba works. “Broccoli” also draws on the concept of “Gridding,” a technique used to exhaust all the possibilities of a particular rudiment or exercise.



Figure 7. mm. 1 through 6 of “Broccoli” warm-up exercise, Cavaliers front ensemble packet.

By applying this warm-up to the original piece, as seen below in figure 8, the performer will gain deeper control of the harmonic movement and rhythmic shifts of the chords. In addition, this process introduces a third roll type, the lateral roll. Lateral rolls, sometimes referred to as ripple rolls, employ a rapid rotational motion of the wrist to produce two successive strokes within a single vertical wrist motion, similar to the effect of a diddle. Because the roll base (double vertical, single alternating, or ripple) is not explicitly designated in the piece; performers benefit from experimenting with and integrating multiple roll types. This expanded technical vocabulary promotes greater fluidity and variety of tones, ultimately resulting in a more nuanced and musically expressive performance.

The image shows a musical score for a piece by Evelyn Glennie, titled 'A Little Prayer', measures 1-4 with 'Broccoli' added. The score is written for piano and consists of two systems of music. The first system covers measures 1-4, with chords CMaj, FMaj, CMaj, and Emin. The second system covers measures 5-8, with chords Amin, Dmin7, Gsus4, G7, and CMaj. Fingerings are indicated below the notes.

Figure 8. Evelyn Glennie, *A Little Prayer*, mm. 1–4 with “Broccoli” added.

At a surface level, a student could successfully play this piece with one stroke type and a general understanding of the harmonic motion. However, by isolating and developing three distinct roll bases, the performer expands their range of musical choices, cultivating adaptable technical skills that readily transfer to other repertoire featuring sustained or rolled passages. This also additionally builds in improvisation techniques by allowing the player to change the way they play the passage in a live setting.

Anthem

Of the new marimba composers that have emerged in the past twenty years, few have enjoyed as much success as Ivan Trevino, who has published works that are regularly performed at the Percussive Arts Society International Convention (PASIC), Texas Music Educators Association (TMEA), and on collegiate recitals. Additionally, his marimba duet, *Catching Shadows* (2013), recorded with esteemed percussionist and educator Michael Burritt, has, at the time of

this writing, been viewed over 1.5 million times on YouTube. Trevino’s compositions have become part of the standard repertoire for advanced high school and undergraduate students, particularly the works in Trevino’s *Song Book* (2011) through their inclusion in state solo and ensemble prescribed lists.⁷² Trevino says this collection of five pieces “is an outlet for the songwriter inside of me, and simply put, shows my love for writing simple tunes.”⁷³ Because of the simple nature of these works, they are accessible to intermediate players and a quality example to apply my method.

The melodic motive of *Anthem* is established in the first measure as seen in figure 9 below. The opening three chords are then developed through multiple registers and rhythmic permutations across the instrument. Because this motive recurs extensively across the work, it serves as an ideal framework for applying exercises aimed at developing technical fluency and introducing improvisation practice.

Solo Marimba

Anthem
from *Song Book*, Vol. 1
Ivan Trevino

1 EbMaj6 Fmin7 AbMaj6 sim.

5 oct. *mf*

4

Figure 9. Ivan Trevino, *Anthem*, mm. 1–7.

⁷² “PML,” Prescribed Music List, University Interscholastic League, Last Modified” September 1, 2025, <https://www.uiltexas.org/pml/>.

⁷³ Trevino, “*Song Book*,” 2.

Block Chords

The first step of this method involves transforming the opening passage into block chords and expanding it from a single measure to two measures, as seen below in figure 10. This modification provides the performer with additional time to focus on tone production and to refine efficient and controlled movement between chordal positions. Once the player has control of the chords, in this simplified version, they can integrate more challenging rhythmic patterns.

The image shows a musical score for a piano in 4/4 time, featuring three measures of block chords. The first measure is labeled $E\flat$ Maj6, the second is Fmin7, and the third is $A\flat$ Maj6. Each measure contains two staves (treble and bass clef) with block chords written as vertical lines of notes. The key signature has two flats (Bb and Eb).

Figure 10. Ivan Trevino, *Anthem*, mm.1–2 with block chords added.

To illustrate, the exercise “SRT”, as seen in figure 11, has been combined with the excerpt from *Anthem*, as seen in figure 12. “SRT” functions as a double vertical exercise similar to other warm-ups, but it integrates more advanced rhythms. By applying this exercise to the selected solo, the performer will have to manage difficult shifts around the keyboard that, once mastered, will make the original passage easier to execute.

The image shows a musical score for a maraca exercise labeled “SRT”. It consists of two staves, both marked “Mar.”. The tempo is indicated as $\text{♩} = 50-100$. The score is written in 2/4 time and features a complex, rhythmic pattern of chords. A note at the end of the second staff reads “Continue up in Broccoli Chords”.

Figure 11. Atlanta Quest, “SRT,” double vertical warm up exercise.

E♭Maj6 Fmin7 A♭Maj6

Figure 12. Ivan Trevino, *Anthem*, mm. 1–2 combined with “SRT.”

Single Independent

The single independent exercise applied to *Anthem* is drawn from the Pulse Indoor Percussion packet and is titled “Urbina Outfitters,” seen below in Figure 13. This exercise is especially well suited to measures nine through twelve, seen below in figure 14, due to its use of single independent arpeggios, which facilitate movement through the underlying chord

progression. It is important to note that this exercise does use one single alternating stroke in the passage but is primarily rooted in a single independent technique.

"Urbina Outfitters"

Variations by Erik Urbina

♩=90-130 bpm

Phrase markings indicate where you should be moving your body with the half note

Mar. *f* *30*

4 1 3 2 3 2 4 1 3 2 3 2 sim... 4 2 3 2 3 2 3 2

Figure 13. Pulse Indoor Percussion, “Urbina Outfitters,” single independent exercise.

Even from a visual analysis it is clear that the two passages are quite similar. The primary stroke in the original passage of *Anthem*, seen in figure 14, Trevino makes use of a combination stroke before moving to a series of single independent strokes. This subtle variation can lead to technical problems for younger players, including “flamming” on the down beat from the outside mallets due to the use of this advanced stroke type. By isolating the single independent strokes,

9

f

Figure 14. Ivan Trevino, *Anthem*, mm. 9–11.

Lateral Strokes

Lastly, we apply lateral strokes to the excerpt. For this example, I have taken the exercise “Lateral Work Out” from the Cedar Park High School front ensemble packet as a structure, as seen in figure 17. For the sake of succinctness, I took out the measure of 8th notes in between each lateral pattern. This variation of a lateral warm-up enables the performer to isolate the lateral stroke in one hand at a time during the first half of the exercise, before integrating both hands in the second half, as seen in figure 18. Additionally, as we get further from the original source material, improvisation through the application of different rhythms and stroke types becomes more apparent.



Figure 17. Cedar Park High School lateral stroke exercise, measure of 8th notes removed.

Figure 18. Ivan Trevino, *Anthem*, mm. 9 with the application of the Cedar Park High School lateral stroke exercise, measure of 8th notes omitted.

Cello Suite No.1 in G Major, Prelude

Bach is one of the most common requests for orchestral and collegiate auditions and additionally was known for his abilities as an improviser. Bach was known to showcase his virtuosity by creating variations of his music during live performances, a skill that requires the understanding of the language underlying the piece of music.⁷⁴ My method seeks to develop the rhythmic language of the marimba through the use of exercises so players may integrate improvisation into their playing. In this section I will demonstrate how technical exercises can be

⁷⁴ David Dolan, John Sloboda, Henrik Jensen, Björn Crüts, and Eugene Feygelson, “The Improvisatory Approach to Classical Music Performance: An Empirical Investigation into its Characteristics and Impact,” *Music Performance Research* 6 (November 2013): 2.

adapted to the first four measures, as seen below in figure 19, of the G Major Cello Prelude.

SUITE I.

59



Figure 19. J.S. Bach, *Cello Suite in G major Prelude*, mm. 1–7.

Block Chords

The opening four measures of this work constitute one of the most immediately recognizable passages Bach ever composed, making note accuracy absolutely imperative. The first step is to turn the passage into block chords, as can be seen below in figure 20. This will reaffirm note accuracy and define intervallic control while also allowing the player to hear the full sonority of each chord. Due to the sticking pattern, performing the excerpt in block chords demands the ability to produce quality double vertical strokes while maintaining an octave in the left hand and a second in the right.



Figure 20. Bach, *G major Prelude*, mm. 1–4 with block chords added.

Single Independent

For the single independent stroke, the Colt Cadets' warm-up DVAI is used as the exercise model for the next example, seen below in figure 21. In each measure, the full chord is played similarly to a block chord exercise. Then, each mallet plays four strokes per note, reinforcing quality rebound and velocity. This approach also provides an effective opportunity for the performer to explore variations in mallet placement along the bar. As the performer repeatedly plays one note, they can listen for the change in sound and articulation as the playing zone changes. When performing Bach, the articulation and duration of the note can be a strong tool to deepen expression. By listening for the variation in sound quality through bar placement and note repetition, the performer will gain a greater understanding of sound quality options.

Figure 21. Bach, *G Major Prelude*, mm. 1–4 combined with DVAI single independent stroke exercise.

Single Alternating

This example uses the same sticking pattern of the single independent, 1-3-2-4, but removes the extra notes, as seen below in figure 22. At this point, the piece begins to sound similar to the original part. Although the note order is different, the use of this standard marching permutation gives the impression of the original piece and will allow the player to

experiment with the shaping of the melodic line without being hindered by more advanced techniques.



Figure 22. Bach, *G Major Prelude*, mm.1–4 with single alternating strokes.

Lateral Strokes

For this example, the Phantom Regiment warm-up “Double Latte” is applied to the work. Although many lateral exercises could be used for the Bach composition, “Double Latte” is especially useful because it emphasizes a different chord tone through each sticking variation. A challenge of playing Bach, and this prelude in particular, is knowing which note in the chord to stress. By applying this specific exercise, the player will be able to listen for the chord tone that creates the most tonal variation in the overall phrase. For context, a section of the Phantom Regiment “Double Latte” exercise is included below as Figure 23. The initial sticking permutation of the exercise is: 4–3–2 | 4–3–2 | 4–3–1–2. The pattern is sustained across four chord groupings before shifting to the next permutation at letter A, where a new sticking configuration is introduced. The process continues through two additional sections, ultimately completing the full cycle of permutations.

The image shows a musical score for a lateral stroke exercise. It is divided into three systems of music. The first system (measures 1-7) has two staves: Keyboards (top) and Timpani (bottom). The Keyboards staff has a sticking pattern of 4 3 2 4 3 2 4 3 1 2. The Timpani staff has dynamic markings of *mf*, *p*, and *mf*. The second system (measures 8-14) has two staves: Kybds. (top) and Timp. (bottom). The Kybds. staff has dynamic markings of *mf*, *f*, *mp*, and *mf*. The Timp. staff has dynamic markings of *p*, *mf*, *f*, *mp*, and *mf*. The third system (measures 15-21) has two staves: Kybds. (top) and Timp. (bottom). The Keyboards staff has two sticking patterns: 4 3 1 2 4 3 1 2 4 and 1 2 3 1 2 3 1 2 4 3. The Timpani staff has dynamic markings of *p*, *mf*, *p*, and *mf*. A section marker 'A' is placed above measure 15.

Figure 23. Phantom Regiment, “*Double Latte*,” mm.1–21 lateral stroke exercise.

The same sticking patterns are then applied to the first four measures of the G major Cello Suite Prelude, as seen in figure 24, and continued in figure 25. By practicing the opening motif in this manner, the performer simultaneously develops technical strength and isolates each moving pitch within the harmonic structure. This approach encourages careful listening, allowing the player to perceive the weight and function of each note within the broader harmonic progression. Furthermore, this allows the dialogue between the voices to be brought out, shaping the forward momentum of the passage. Although the original source material is clearly heard, by integrating a new time signature and restructuring the harmony, the player is actively improvising.

GMaj

4 3 2 4 3 1 2

CMaj

F#dim

GMaj

A GMaj

1 2 3 1 2 4 3

CMaj

F#dim

GMaj

B GMaj

3 4 2 3 4 2 1

Figure 24. Bach, *G Major Prelude*, combined with “Double Latte,” mm. 1–36.

Figure 25 displays a musical score for a piece combining Bach's *G Major Prelude* with "Double Latte," measures 37–60. The score is written in treble clef, 3/4 time, and features a key signature of one sharp (F#). The piece is divided into seven staves. The first three staves show the original Bach melody. The fourth staff, marked with a 'C' in a box, includes fingering numbers (2 1 3 and 2 1 3 4) under the first two measures. The fifth and sixth staves show the "Double Latte" variation, which is a rhythmic and melodic transformation of the original. The seventh staff shows the final measure of the piece.

Figure 25. Bach, *G Major Prelude*, combined with "Double Latte," mm. 37–60.

Variations on Japanese Children's Songs

Keiko Abe's *Variations on Japanese Children's Songs* stands as a landmark work in the solo marimba repertoire. Drawing on Japanese folk melodies from her youth, Abe creates a deep and rich musical sound scape that showcases her compositional style. Ostinato bass lines, the use of dissonance, particularly minor seconds and augmented fourths, and extreme registers of the instrument are prevalent throughout the work and have become synonymous with her style. Over her almost eighty-year career, Abe has successfully created her own vocabulary that is based on her upbringing as a pianist and her Japanese heritage. By combining exercises from marching percussion and applying them to a section of Abe's work, the "P.I.T." method creates a structure to integrate a known vocabulary to a predetermined melodic and harmonic structure, thus improvising.

29 *ff* *mf*

33 | *mf*

x = dead stroke

Figure 26. Keiko Abe, *Variations on Japanese Children's Songs*, mm. 29–36.

To integrate my isolated stroke-type exercise, the music needs to be changed subtly to facilitate the stroke-type being developed. When applying the P.I.T. Method, there will inevitably be a time when the music does not fit perfectly to the original music. This will require the player

to make variations like doubling notes, using combination strokes, or extending and filling in phrases. This example demonstrates how a passage can be modified to follow this method.

For the sake of this exercise, I will be looking at measures 32 through 36, seen above in figure 26. This section features one of the signature components from the work, highlighting the left-hand ostinato that is utilized throughout the piece.

Block Chords

The initial modification, which transforms the phrase into block chords as seen below in figure 27, requires an alteration on the first beat and the use of a combination stroke, defined as an immediate transition between two distinct stroke types. In this instance, mallet one begins by playing independently before shifting to a double vertical stroke for the remainder of the measure, necessitating a combination of single independent and double vertical strokes. Although this specific combination was not isolated in the analysis of front ensemble exercises, it represents a common and essential technique found throughout four-mallet repertoire.

The second modification involves assigning the right hand to play on every eighth note within the measure, thereby reflecting the rhythmic framework typical of standard block chord exercises, also seen in figure 27. Practicing the passage in this manner encourages fluid control of the right-hand double vertical stroke while simultaneously fostering precise intervallic control in the left hand.

Figure 27. Keiko Abe, *Variations on Japanese Children's Songs*, mm. 32–66 combined with double vertical strokes.

Single Independent

For the purpose of this single independent stroke example, the excerpt has been limited to the first measure, as extending this approach across the entire passage would result in considerable length. This can be seen in figure 28. Practicing the material in this manner

The image displays five systems of musical notation for piano, arranged vertically. Each system consists of two staves: the upper staff is the right hand and the lower staff is the left hand. The key signature has one flat (B-flat), and the time signature is 4/4. The exercise focuses on the left hand playing single notes and chords, while the right hand plays chords. The notation includes various rhythmic values and articulation marks.

Figure 28. Keiko Abe, *Variations on Japanese Children's Songs*, mm. 32 with Single Independent strokes.

continues to reinforce the single independent stroke while also encouraging the development of new phrasing and musical interpretations. Because the original excerpt relies almost exclusively on the single independent stroke in the left hand, this breakdown targets and strengthens the intended technical skill.

Single Alternating

To execute the single alternating exercise in this passage, the initial G is performed by alternating mallets one and two. This is visible in Figure 29. While alternating

Figure 29. Keiko Abe, *Variations on Japanese Children's Songs*, mm. 32–36 with single alternating strokes.

mallets on a single pitch within one hand is not a common performance practice, it serves to further reinforce the single alternating stroke type. The right hand continues to employ

alternating strokes, and because the melodic material is organized in odd groupings, the performer must shift chord shapes at varying points within the phrase.

Lateral Strokes

This section, as seen in figure 30, varies the original excerpt in that it keeps the root note of G continued throughout the passage so as to maintain a lateral stroke in the left and right

The musical score consists of five systems, each with two staves. The key signature has one flat (B-flat). The right hand (top staff) plays a melodic line with eighth notes and quarter notes, while the left hand (bottom staff) plays a rhythmic accompaniment of eighth notes. The piece maintains a lateral stroke by keeping the root note of G in both hands throughout the passage.

Figure 30. Keiko Abe, *Variations on Japanese children's Songs*, mm. 32–36 with lateral strokes added.

hand. The lateral stroke in this implementation creates a passage that is idiomatic of solo marimba literature as seen in works like Albeñiz's *Asturias Leyenda* as arranged by Leigh Howard Stevens, and *Astral Dance* by Gordon Stout.

My Lady White

This example is taken from the second movement of David Maslanka's work, *My Lady White* (1980); *Spring...Birds Sing...A Gift of Rings*. Maslanka was an influential American composer best known for his contributions to wind ensemble and percussion repertoire, with his work *My Lady White* described as "among the best tonal literature for solo marimba today."⁷⁵ Maslanka notes that the work was inspired by Robert Graves's poem "With the Gift of a Ring" as well as Graves's lifelong pursuit of the mythical White Goddess, which informs the title of the composition.⁷⁶

Maslanka's works are frequently performed by collegiate and professional wind ensembles and his marimba solos, *My Lady White* (1980) and *Variations on a Lost Love* (1977) have been performed extensively and grown to wide acceptance by the percussion community.⁷⁷ His solo percussion compositions exhibit these same qualities, presenting technically demanding passages, making them an excellent test case for my method. I will demonstrate how the breaking down

⁷⁵ "My Lady White," David Maslanka Works, accessed December 17, 2025, <https://davidmaslanka.com/works/my-lady-white/>.

⁷⁶ Corey Robinson, "Depiction Through Evocation, Representation, and Introspection: An Examination of David Maslanka's Unaccompanied Marimba Solos" (DMA diss., University of North Texas, 2018), 4.

⁷⁷ *Ibid.*, 82.

this passage will isolate specific technical skills and provide a framework for performers to improvise their own musical ideas.

Figure 31 is the original part from the second movement of the solo. This passage utilizes fast lateral strokes with the sticking 1-2-4-3, a common sticking in marching and solo marimba literature.

Figure 31. David Maslanka, *My Lady White*, movement 2 mm. 41–46.

Block Chords

The initial step in breaking down this passage is to apply block chords, as seen in figure 32, drawing on approaches similar to *Block Chords* (Cavaliers D&BC), *Bridges* (Seattle Cascades D&BC), *Vertical Strokes* (Impact Percussion), and *Hyperspace* (Burlison high school). This method simplifies the musical material by aligning all four mallets rhythmically and harmonically, allowing the performer to focus on balance, tone quality, and stroke consistency. In this

Figure 32. David Maslanka, *My Lady White*, movement 2 mm. 41–46 with block chords added.

adaptation, each beat of the original passage is subdivided into two eighth notes, both of which are played simultaneously by all four mallets using a double vertical stroke.

By reducing the passage to block chords, the player establishes a clear technical and musical foundation before introducing more complex sticking or independent patterns. This approach reinforces uniformity of motion and sound while promoting an even distribution of weight across all mallets. Once the passage can be executed confidently and consistently in this form, that ability provides a stable framework from which additional layers of rhythmic variation, independence, and improvisational material can be gradually introduced.

Single Independents

The musical score consists of six staves of music in 8/4 time. Each staff contains a sequence of chords and rhythmic patterns. The chords are labeled as follows:

- Staff 1: GMaj, DMaj, CMaj, DMaj
- Staff 2: GMaj, DMaj, CMaj, DMaj
- Staff 3: GMaj, DMaj, CMaj, CMaj#11
- Staff 4: Emin, GMaj, C#dim7, C#11
- Staff 5: GMaj, DMaj, CMaj9, DMaj
- Staff 6: GMaj, D7, Bdim, F#dim7, GMaj

The score concludes with a 10/4 time signature change at the end of the sixth staff.

Figure 33. David Maslanka, *My Lady White*, movement 2 mm. 41–46 with single independents added.

Once the player has mastered the passage using block chords, the next step is to incorporate single independent strokes as seen in figure 33. For this exercise, each chord has been doubled in duration, allowing the performer to execute two single independent strokes as sixteenth notes. Although this example demonstrates only two notes per chord, players are encouraged to expand the pattern to four, eight, or more to further develop single independent technique.

Single Alternating

The third pattern employs a single alternating sticking, seen below in figure 34. This sticking pattern is commonly referred to as “13–24,” denoting the sequence in which the mallets are used. The pattern returns to the phrase length of the block chords exercise, aligning with the original passage of the piece, however, performers are encouraged to extend these phrases as a means of incorporating improvisational techniques.

The figure displays three staves of musical notation in 4/4 time, illustrating single alternating strokes. The notes are grouped into pairs, each pair corresponding to a specific chord. The chords are labeled above the notes:

- Staff 1: GMaj, DMaj, CMaj, DMaj, GMaj, DMaj, CMaj, DMaj
- Staff 2: GMaj, DMaj, CMaj, CMaj#11, Emin, GMaj, C#dim7, C#11
- Staff 3: GMaj, DMaj, CMaj9, DMaj, GMaj, D7, Bdim, F#dim7, GMaj

The notation shows the rhythmic placement of these chords, with the first two staves in 4/4 and the third staff transitioning to 5/4 time.

Figure 34. David Masanka, *My Lady White*, movement 2 mm. 41–46 with single alternating strokes added.

Lateral Strokes

The fourth isolated stroke type is the lateral stroke and employs the sticking pattern 1 2 3 4. The sticking pattern is then applied in the “*Broccoli*” pattern, as previously demonstrated in the *Variations on Japanese Children’s Songs* excerpt. This example also applies the “gridding” concept. The result can be seen in figure 35.

The figure displays three staves of musical notation in treble clef. The first staff is in 4/4 time and contains eight measures of music with lateral strokes. Above the staff are the following chord annotations: GMaj, DMaj, CMaj, DMaj, GMaj, DMaj, CMaj, and DMaj. The second staff continues the piece and includes the following chord annotations: GMaj, DMaj, CMaj, CMaj#11, Emin, GMaj, C#dim7, and C#11. The third staff changes to 5/4 time and includes the following chord annotations: GMaj, DMaj, CMaj9, DMaj, GMaj, D7, B dim, F#dim7, and GMaj.

Figure 35. David Maslanka, *My Lady White*, movement 2 mm. 41–46 with lateral strokes added.

All Four Strokes Combined

The next stage involves combining the four stroke types and the exercises from which they are derived. This process introduces structured improvisational techniques into the learning of the piece by drawing directly on the practiced material and established concepts. The resulting short improvisation, seen below in figure 36, is constructed through the application of these four exercise structures and the intentional shifting between them.

The musical score consists of five staves of music. The first four staves are in 4/4 time, and the fifth staff is in 5/4 time. Each staff is annotated with chord names above the notes. The chords are: G Maj, DMaj, CMaj, DMaj, CMaj, CMaj#11, Emin, GMaj, C#dim7, C#11, GMaj, DMaj, CMaj9, DMaj, GMaj, D7, B dim, F#dim7, and GMaj.

Figure 36. David Maslanka, *My Lady White*, movement 2 mm. 41–46 with all stroke types applied.

Finally, I have included an excerpt from one of my solo pieces, *Oh Red, Red Rose*, which draws directly on *My Lady White* and the process I used to practice this part. I introduced an exercise similar to “Broccoli” but incorporated groupings of five notes rather than four to create

a feeling of forward momentum and making the melodic line in the right hand more apparent.

This can be seen figures 37, 38, and 39.

The image displays a musical score for the piece "Oh Red, Red Rose" by Nathan Smith, covering measures 57 through 67. The score is written for piano and consists of four systems, each with a grand staff (treble and bass clefs). The key signature is three sharps (F#, C#, G#). Measure 57 begins with a fermata on a whole note in the right hand and a half note in the left hand, with the word "niente" written below. From measure 58 onwards, the right hand features a melodic line of quarter notes, while the left hand plays a rhythmic accompaniment of eighth notes, often using a five-finger fingering (indicated by the number '5'). The time signature changes from 2/4 to 3/4 at measure 62 and back to 2/4 at measure 65. The piece concludes with a final cadence in measure 67.

Figure 37. Nathan Smith, *Oh Red, Red Rose*, mm. 57–67.

The image displays a musical score for the piece "Oh Red, Red Rose" by Nathan Smith, covering measures 68 through 82. The score is written for piano and is organized into five systems, each with a grand staff (treble and bass clefs). The key signature is one sharp (F#), and the time signature is 3/4. The score features a complex rhythmic pattern with frequent changes in meter, including 3/4, 4/4, and 3/2. The bass line is characterized by a steady eighth-note accompaniment, often marked with a '5' (finger number) and slurs. The treble line consists of a series of eighth notes, some with slurs and some with accidentals (sharps). The piece concludes at measure 82 with a final sharp sign in the bass line.

Figure 38. Nathan Smith, *Oh Red, Red Rose*, mm. 68–82.

The image displays two systems of musical notation for a piano piece. The first system, starting at measure 83, features a treble clef with a key signature of two sharps (F# and C#) and a bass clef. The right hand plays a series of eighth notes, while the left hand plays a sequence of chords, each marked with a '5' below it, indicating a fifth finger fingering. The second system, starting at measure 85, shows a treble clef with a key signature of two sharps and a bass clef. The right hand has a long, flowing melodic line with a slur and a fermata, while the left hand plays a simple accompaniment of quarter notes.

Figure 39. Nathan Smith, *Oh Red, Red Rose*, mm. 83–88.

Through the gradual recombination of the four primary stroke types, improvisation is introduced by the player not as a separate or abstract skill, but as a natural extension of established technique. As I have demonstrated with my own composition, these improvisations can serve as a basis for students to compose their own works, drawing on an established vocabulary that is idiomatic for the instrument.

Conclusion

This document addressed a persistent pedagogical divide in keyboard percussion instruction; while many students achieve remarkable technical fluency within the highly structured setting of marching percussion, they seldom transfer those same practice methodologies, and almost never the creative possibilities they afford, into solo marimba performance. By reframing front ensemble exercises as a common technical language, this study articulated a systematic path from the uniformity-centered practice of marching percussion to the study of solo marimba literature in order to develop improvisation and deepen musical understanding of the repertoire. This method situates improvisation as the logical extension of organized technical study rather than positioning improvisation as a genre specific skill confined to traditions like jazz. In doing so, students will move beyond basic repetition of other players and toward a holistic musical understanding that results in a novel and creative performance.

As discussed in Chapters 1 and 2 of this study, meaningful practice must be anchored in a clear theoretical framework and guided by a purposeful structure. A clear parallel can be seen in the pedagogical approach of the front ensemble to Ericsson's distinction of purposeful and deliberate practice. Front ensemble rehearsals are structured to include defined objectives, thoughtful repetition, structured feedback, and targeted problem-solving. This practice framework should then be applied to the study of solo marimba to support the development of skills such as improvisation. Through the isolation and integration of specific variables like stroke type, improvisation techniques can be learned similarly to the way players learn to improvise in jazz.

In Chapter 3, through the analysis of fifteen different front ensemble packets, it is clear that a uniform approach exists from group to group and level to level. This shared taxonomy is

important because it establishes broad access to the founding technical principles, built out of vocabulary students already possess. By combing solo repertoire with specific stroke types and exercises, the approach transforms the “how do I start improvising?” problem into an easy and replicable task; isolate a stroke type, pull an excerpt from piece of solo literature, apply a known marching exercise, and recombine materials creatively. In this way, improvisation happens as a result of combining already learned skills rather than a leap into unstructured freedom.

This research also acknowledges limitations. The packet analysis reflects a wide but not exhaustive sample. Future research could strive to analyze a greater number of front ensemble packets to gain as wide a sample source of exercises as possible. In addition, the use of rote instruction alongside written exercises warrants further study to better understand how rote-based exercises are learned and varied when they are not explicitly documented within the packets. Because the P.I.T. Method requires access to a collection of commonly used exercises, its overall effectiveness is dependent on a student’s exposure to that collection of knowledge, making it less effective for students without a marching percussion background. Through the dissemination of the method to students and instructors in the form of a method book, its effectiveness could be further refined. By identifying which exercises yield the strongest outcomes, and which aspects of the method prove more or less effective, the method can be honed to develop the most efficient and impactful learning strategy possible.

Ultimately, this document argues that learning to improvise on the marimba does not require a separate curriculum, but rather a thoughtful integration of existing technical exercises based in marching pedagogy with solo repertoire. By merging previously learned exercises with solo marimba literature, the performer develops the ability not only to execute the notes on the page, but to understand the technical language well enough to create new and novel

performances. The implementation of this method moves the performer beyond replication and closer to finding their own voice.

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