

LIBERTY UNIVERSITY  
SCHOOL OF MUSIC

**Developing Right-Hand Finger Flexibility in Young Violinists:  
Teaching Collé, Martelé, Spiccato, and Sautillé through the Suzuki Literature**

Submitted to Dr. Yevgeniy Dovgalyuk,  
in partial fulfillment of the requirements for the completion of;

MUSC 689  
Masters Thesis Proposal and Research (A25)

by

Monica Thiriot

April 15, 2022

## **Abstract**

Much is written in violin method books about developing pitch, rhythm, and posture for young violinists. It is difficult to find examples of when to teach right-hand flexibility with bow techniques such as collé, martelé, spiccato, and sautillé. Although many violin teachers throughout the country use Suzuki literature to instruct their students, there are few written instructions concerning these advanced bow techniques in the literature. Instead, Shinichi Suzuki focused his studies on philosophy and the importance of a positive teaching environment, creating a beautiful tone by playing from the heart, ear training, and helping the youngest violin students reach their full potential. He left many of the specifics of bow technique to the individual teacher. Allowing individual teachers to determine when to teach bow technique has created a wide range of differences when practices such as collé, martelé, spiccato, and sautillé are taught, which can be frustrating and confusing for teachers. This research project will survey and interview violin and string teachers to determine how and when they teach these skills and then create a timeline using the music in the Suzuki literature to give teachers guidance for instructing students in developing these skills. The information will then be presented in a lecture-recital where the exercises and information will be demonstrated and explained, while showing how a professional violinist uses these skills. This will help all teachers who use the Suzuki literature determine the best course of action for their students as they help them reach their full potential.

*Keywords:* Suzuki, violin, collé, martelé, spiccato, sautillé, bow flexibility, bow hold, education, pedagogy

## Contents

<b>Chapter 1: Introduction</b> .....	1
Overview of the Project .....	2
Significance of the Project.....	3
Purpose of the Project.....	4
Intended Outcomes of the Project.....	4
System of Assessment of the Project .....	4
Limitations of the Project.....	5
Glossary of Terms .....	5
<b>Chapter 2. Literature Review</b> .....	8
Understanding Misconceptions: The Importance of Labeling.....	8
Teaching Right-Hand Bow Flexibility.....	10
Teaching Right-Hand Bow Flexibility in Suzuki Literature.....	11
<b>Chapter 3. Methodology</b> .....	13
Overview of Project Design.....	13
Relationship of the Literature to the Project Design.....	13
Project Plan.....	13
Project Implementation.....	14
<b>Chapter 4. Research Findings</b> .....	16
Martelé Bow Stroke .....	20
Playing “Off the String” .....	22
Developing Spiccato.....	23
Playing Sautillé.....	25

The Difficulties of Collé.....	27
<b>Chapter 5. Discussion.....</b>	<b>30</b>
Timelines for Introducing and Student-Led Application.....	32
Conclusion.....	34
<b>Bibliography .....</b>	<b>36</b>

## **CHAPTER 1: INTRODUCTION**

When a young student begins playing the violin, it is easy and logical to spend much of the lesson and practice time focused on the left hand. Therefore, it is essential to instruct a student in developing the left hand from the beginning. Many method books discuss developing pitch, rhythm, and posture. Several methods, including the Suzuki Method and the Mark O'Connor Method, emphasize teaching young children to play the violin, focusing on ear training. Teachers can easily find information on teaching left-hand principles for the violin. However, it is hard to find written examples of when to teach right-hand flexibility with bow techniques such as collé, martelé, spiccato, and sautillé. Music teachers worldwide have watched students attempt to play the violin with a tight right-hand bow hold, with straight fingers gripping tightly to the bow like a claw. A tense bow hold creates a lack of mobility in the right hand and hinders the progress of bow control and tone for the violinist. “Finger and wrist mobility are as fundamental to bow control as developing a proper bow-hand shape.”<sup>1</sup> Famous pedagogues such as Galamian and Kreutzer have written many fundamental exercises to teach and explain these techniques. Still, there is little to no literature on when to teach each skill throughout the Suzuki violin method books.

In the United States, many traditional violin instructors and Suzuki-trained violin teachers use Suzuki-developed literature to teach young students because of its logical and systematic approach to playing the violin. The recordings produced and the method books also

---

<sup>1</sup> Jacob M Dakon and Selim Giray, “Alternative Perspective on Right-Hand Finger and Wrist Mobility, Collé Action,” accessed July 18, 2021, [https://www.astastrings.org/Web/Resources/Featured\\_Resources/Coll%C3%A9%20action.aspx](https://www.astastrings.org/Web/Resources/Featured_Resources/Coll%C3%A9%20action.aspx), 32.

assist with pitch, rhythm, and phrasing. Teachers that have their students memorize the music know that doing so helps students concentrate on posture, playing by ear, and working towards producing a solid tone. Unfortunately, finding specific literature and examples of when to teach right-hand finger flexibility and bow technique is a challenge. Without clear guidance, teachers find themselves guessing and wondering if they are teaching these skills at the appropriate time for each student to prepare them for more advanced literature.

Some confusion also comes from the definition of each technique and how to articulate it to students. For example, many complicated bow strokes have similar techniques and require a teacher to study the terms and practice the technique to teach them correctly. Having a timeline of when to begin teaching a technique, what pieces work well to apply the technique, and then gaining an idea of when that technique should be comfortable for the student will give teachers the confidence to know that they are helping their students develop skills at the right time. In addition, this knowledge will help students progress and prepare for advanced literature.

### **Overview of the Project**

This project will interview and survey top Suzuki violin teacher trainers, violin teachers from around the country, professional violinists, and parents of Suzuki violinists to learn when others begin teaching *collé*, *spiccato*, *martelé*, and *sautillé*. A survey will also be sent out to string teachers, asking them what pieces within the Suzuki literature they use to teach and demonstrate these bow techniques and when they feel students should be able to perform the procedure comfortably. Finally, the interviews and surveys will be combined to create a tentative timeline for teachers to guide them when teaching bow techniques to their students. The lecture-recital will give examples of the bow techniques and when and how teachers integrate them into the pieces the students are learning. In addition, it will use examples from

the Suzuki literature and perform Stravinsky's "The Soldier's Tale," which showcases all four techniques professionally.

### **Significance of the Project**

According to an article in American String Teacher Association (ASTA) magazine, "we, as string teachers, understand that a lack of finger and wrist mobility will undoubtedly hinder the development of more advanced bow control."<sup>2</sup> While many teachers understand the importance of developing right-hand finger flexibility, many find teaching this skill overwhelming, complex, and time-consuming. School orchestras and private studios often have a wide range of student abilities and practice dedication. The wide range of music can often lead to students attempting to play higher-level music without the background bow technique needed to play the music competently. The lack of information on teaching these skills and how to add the techniques into pieces the students learn in school orchestras and private studios also causes students to use incorrect bow techniques. There is nothing directly written to develop these bow techniques within the Suzuki violin literature. Suzuki taught his students to play with very "sticky bows," and they played "on the string" until concerto levels. Suzuki left it up to individual teachers to determine when and how to teach many right-hand bow techniques. This project is significant because it will open communication between teachers with interviews and surveys. By studying other violin pedagogues such as Ivan Galamian and Carl Flesch, teachers will better understand when and how to teach *collé*, *martelé*, *spiccato*, and *sautillé* so that it does not feel burdensome in lessons that are already full and complex.

---

<sup>2</sup> Dakon and Giray, "Right-Hand Mobility," 32.

## **Purpose of the Project**

This project aims to create a timeline that corresponds with the Suzuki violin literature, which will show ideas for teaching collé, martelé, spiccato, and sautillé to students. Prepared teachers will be able to begin training the skills at the appropriate level, implement these techniques into pieces of music, and continue helping students develop these abilities until they can execute them independently. Through interviews and surveys with other teachers and studying literature from professional violinists and pedagogues, this timeline will show the variety of when to teach right-hand finger flexibility and show examples of implementing the technique throughout the Suzuki literature. It will present violin teachers with a range of ideas for teaching advanced bow skills on various levels to meet the needs of all students.

## **Intended Outcomes of the Project**

There are several essential outcomes anticipated from the project. These include collecting ideas for teaching collé, martelé, spiccato, and sautillé, finding out when music teachers teach these skills, and when teachers implement them into different pieces. It will also strive to learn how music teachers then develop and solidify their students' skills until students can perform them independently. Finally, this research project will help teachers better understand the processes needed for these bow techniques and help their students develop an advanced tone on their violins which will help prepare them to play music on all different levels.

## **System of Assessment of the Project**

This research project will use qualitative and quantitative methods to learn and find ideas. It will use research from the history of Suzuki in America and will attempt to find out why there is confusion in teaching different bow techniques. A brief survey given to violin teachers will

determine how they teach specific bow techniques and what pieces of Suzuki literature they use to implement these skills. Interviews with volunteer teachers will also share a deeper understanding of the subject. By mixing both methods, it will be possible to gather enough information to form a timeline for teachers to follow. Both the interviews and surveys will be concise, clear, and short so that teachers will participate.

### **Limitations of the Project**

This project is specifically designed to focus on how to teach youth right-hand bow flexibility using the music in Suzuki literature. While the principles learned can and should be used in teaching all violin students and used with other teaching methods, that perspective will not be studied. Another potential limitation is relying on other string teachers to respond to interviews and surveys. Gaining the wanted and needed perspective will be challenging if teachers are unwilling to collaborate and share their ideas. Uncooperative teachers could potentially limit the effectiveness of the research. With a wide variety of thoughts on when the subject should be taught, the most significant difficulty will be finding enough teachers willing to answer the questions that have experience teaching these advanced techniques. If enough teachers do not respond, it will be complicated to develop a valuable and helpful timeline for teachers.

### **Glossary of Terms**

Teachers must have the exact definition for each term if the project is practical. This section will define two different types of bow strokes to help teachers categorize and decide when they teach each stroke. These definitions are from Amanda Wall's website

www.amandawallstrings.org. She has combined famous resources to define bow strokes that are clear and simple to understand.<sup>3</sup>

**I. On-the-String Bow Strokes:** The first bowing style category is *detaché*, *legato*, or *staccato*.

- a. **detaché**– separate, broad bow strokes, but not *staccato* (or short)
- b. **legato**– smooth stroke without any spacing between changes of bow
- c. **marcato**– sharp stroke. Literally, well-marked
- d. **martelé**– detached and strongly accented bow stroke: “hammered;” see also *martellato*
- e. **martellato**– hammer-style bowing, detached stroke, usually upper half of bow
- f. **staccato**– a short note which can be produced with several kinds of bow strokes but indicates a note with required space between its ending and the beginning of the following note
- g. **piqué**– a *collé* bowing starting from the string (see *collé* bowing, under “off-the-string bow strokes”)

**II. Off-the-string bow strokes:** These bow strokes involve *staccato*, as they place different amounts of space between notes and articulate them differently than when the bow moves in a strictly horizontal plane.

- a. **spiccato**– one note per bow stroke; controlled bouncing or springing bow
- b. **simple brushed spiccato**– rather large, heavy, and slow strokes near the frog with no hand or finger movement

---

<sup>3</sup> Amanda Wall, “Violin Bowing- a List of Terms,” Amanda Wall Strings, October 2, 2013, <https://www.amandawallstrings.com/violin-bowing-a-list-of-terms-4157/>.

c. **sautillé**– very fast spiccato, usually done with the hand, like a finger détaché, with the hair hardly leaving the string while the wood bounces. It is a relatively light and sensitive, slightly bouncing stroke.

d. **collé**– “pinched” bowing at the frog done with fingers only, starting from above the string, touching, and then lifting, with fingers providing all of the movement. This results in a terse note with a sharp beginning and end. Usually, this is utilized when performing “backward” articulation, starting with an upbow in an uneven rhythm.

## **Chapter 2:**

### **LITERATURE REVIEW**

This project divides into several areas of research. The first area is understanding why teachers face misconceptions, confusion, and difficulty when teaching collé, martelé, spiccato, and sautillé. This topic includes clearly defining the terms and learning new techniques for teaching these bow skills. The next part of this project is discovering when Suzuki violin teachers begin teaching these skills, what pieces they use to implement the skills, and when they feel students should be able to perform these skills on their own. Finally, finding out information concerning the performance of these skills will be accomplished through surveys and interviews. The structure of the Suzuki violin method allows individual teachers to determine when they feel it is best to add in these techniques. However, teachers may find it challenging to decide when and how to insert them into their students' studies with very few written instructions. Creating a timeline for teachers will help violinists understand what they are working towards and help students reach their potential as violinists and musicians.

#### **Understanding Misconceptions: The Importance of Labeling**

Music teachers worldwide have watched students attempt to play the violin with tight, tense fingers that grip the bow. A rigid bow hold creates a lack of mobility in the right hand and will hinder the progress of bow control and tone for the violinist. Jacob Dakon and Selim Giray wrote an article for ASTA titled "Alternative Perspective on Right-Hand Finger and Wrist Mobility, Collé Action." This article states, "finger and wrist mobility are fundamental to bow control as developing a proper bow-hand shape."<sup>4</sup> The authors ask the question if everyone knows how important this technique is to the development of the student, why is it so difficult to

---

<sup>4</sup> Dakon and Giray, "Right-Hand Mobility," 32.

teach, and why do students struggle with the concept? They suggest that one of the reasons it is difficult to teach is that there are no method books with a program set up with ideas on how to teach bow hold flexibility. Most books are focused on teaching students “melodic, harmonic and rhythmical aspects of music literacy and string technique.”<sup>5</sup>

Another difficulty teachers face is knowing and understanding what words to use to describe this technique. They explain that it is essential for teachers to understand how to label the finger motion so that they can relate it to students. Pedagogues such as Ivan Galamian label finger and wrist mobility as a “system of springs.”<sup>6</sup> Others, such as Simon Fischer and Henry Barrett and Hamann and Gillespie, describe it. However, their ideas do not cover several aspects needed to give a complete picture of collé motion. Dakon and Giray suggest that “the field needs a more appropriate term for finger and wrist mobility that exemplifies its requisite motions and easily identifies with current bowing terminology.”<sup>7</sup> Ivan Galamian and his book *Principles of Violin Playing and Teaching*, Robert Gerle and his book *The Art of Bowing Practice: The Expressive Bow Technique*, and Amanda Walls’ string pedagogy website “Violin Bowing- A-List of Term” offer excellent references for a basic understanding of bow technique.

Susan Haugland, who wrote “Potential: Suzuki’s Mother Tongue Method and Its Impact on Strings in Music Education in the United States,” Karen S. Hendricks and her article “The Philosophy and Shinichi Suzuki: ‘Music Education as Love Education,’” and John Kendall’s, “MEJ Encore: Suzuki’s Mother Tongue Method” all discuss Suzuki’s impact and influence in the United States. His method continues today because Suzuki was more concerned with

---

<sup>5</sup> Dakon and Giray, “Right-Hand Mobility,” 32

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

teachers understanding the philosophy, allowing teachers flexibility in their teaching of the specific methodology. Suzuki enjoyed experimenting and trying new ideas. If an idea for education was not working, he would try something new. Suzuki expected teachers to take responsibility and find their answers. What has followed is many variations and a wide range of how to teach advanced bow techniques, making it difficult to find specific information for teaching children these techniques.

### **Teaching Right-Hand Bow Flexibility**

“There are few human endeavors more complicated, sensitive, and delicate than that of drawing a pleasing sound from a stringed instrument. A superior bow technique results from an untold number of contrasting yet complementary motions and combinations.”<sup>8</sup> The first step to the bow technique is learning how to hold the bow. In his Suzuki Violin School, Volume 1 International Edition, Shinichi Suzuki Violin School uses clear pictures and easy-to-understand descriptions as an excellent place first to study how young children can adequately hold the bow. Dr. Suzuki spent years studying all aspects of playing the violin. Specifically, he searched for techniques to help musicians relax as they learn complex music. For example, while there are several different styles of holding a bow, his version works particularly well for young children. Another book that offers excellent advice and suggestions is Edmund Sprunger’s *Building Violin Skills: A Set of Plans Designed to Help Parents and Children Construct Positive Practices*. Itzhak Perlman’s YouTube video “Itzhak on Bow Grip” is excellent for all violinists. YouTube offers many videos and exercises for teaching flexibility in the right hand for adults and advanced players. Videos from pedagogue Julia Bushkova like “Violin Techniques –

---

<sup>8</sup> Robert Gerle, *The Art of Bowing Practice: the Expressive Bow Technique* (London: Stainer & Bell, 2001), 15.

Spiccato VS Sautille” and even YouTube sensation Eddie Chin offer excellent advice for advanced students. In addition, Todd Ehle has incredible online violin lessons with practical and straightforward teaching methods for adults. In particular, he teaches how to develop the finger muscle power needed to move the bow correctly.

### **Teaching Right-Hand Flexibility in the Suzuki Literature**

Shinichi Suzuki was a genius in creating a system for teaching young children how to play the violin. He would be the first to encourage teachers to search for new ways to teach complex ideas. His method clearly shows that every child who wants to learn to play the violin can, and Suzuki was the first to develop a teaching method geared explicitly toward children who want to play the violin. He constantly pushed educators to realize that children are capable of complex musicality when taught correctly. His book *Nurtured by Love: Translated from the Original Japanese Text* is essential in understanding the premise for this research project.

In his book *The Suzuki Violinist: A Guide for Teachers and Parents*, William Starr was one of the first teachers to go through the Suzuki violin repertoire describing the technique needed for each piece in English. He provides a step-by-step guide for teachers to know precisely what techniques should develop at each level.

Many teachers follow William Starr’s guidelines, but more teachers are beginning to help students acquire advanced skills on earlier pieces. Dick William is a teacher that believes in teaching what is considered advanced bow technique at an early age. He wrote an article for the Suzuki Association of the Americas called “*Preparing the Bow for Book 4*,” He claims that by the time a student begins book four, they should be able to perform the specific bow techniques, including detaché, spiccato, and collé. For many Suzuki students, they begin book four between the ages of eight and twelve. The ability to perform these skills relies on several different

elements, including the child's size and mobility development and the quality of the bow. For example, tiny violins may not be able to reproduce these techniques. Dick William lists several excellent practical exercises that work for advanced older students. Still, there is considerable debate about when teachers should teach these skills.

## **Chapter 3:**

### **METHODOLOGY OF THE RECITAL:**

The lecture-recital presentation bases its demonstration on a mixed approach. It will use both quantitative and qualitative methods to answer questions, beginning by sharing the history of teaching young children to play the violin with the Suzuki method here in America. Then, it will continue by sharing the survey results from violin teachers. A brief survey sent to teachers will determine when they begin teaching specific bow techniques, when they start applying them to pieces within the Suzuki violin literature and when they expect students to perform the technique comfortably. Then, using Suzuki literature for demonstration purposes, the results from the survey will be presented. The lecture-recital will conclude with a performance of Stravinsky's "The Soldier's Tale," which showcases all four bow techniques.

#### **Relationship of the Literature to the Project Design**

The research project aims to combine resources and information to create a central location where teachers can find information on teaching young students right-hand bow flexibility. It is essential to understand why there is a discrepancy among teachers and understand what has been done in the past with famous pedagogues such as Galamian, Kreutzer, Flesch, and Suzuki, John Kendall, Itzak Perlman, YouTube teachers, and string educators actively teaching today. While there are hundreds of examples of teaching bow techniques, there is very little information about when to teach them. Therefore, it is crucial to study past curriculum and combine it with current teacher instruction.

#### **Project Plan**

The plan for this project begins with studying the information available and then surveying violin teachers around the country. Teachers asked to participate in the survey will be

active participants in Suzuki training that the researcher has met throughout the country. In addition, contacting various state Suzuki violin associations to ask about participation will be included. It will also reach out to local teachers that teach string classes. The survey will ask teachers when they begin teaching the exercises for collé, martelé, sautillé, and spiccato, what pieces they use to demonstrate the bowing, and when they feel students should be proficient in performing the bow technique on their own. After gathering the information, teachers will see a larger picture of teachers timeframe to instruct students in right-hand bow flexibility. Next, a lecture-recital demonstration will present the findings by showcasing teacher-suggested excerpts. Finally, the recital will conclude with a demonstration of using these skills in advanced violin literature.

### **Project Implementation**

#### **I. Recital and Lecture Plan:**

1. Present purpose of lecture/recital
  - a. Why is this research needed?
2. Present the results of surveys, interviews, and research.
  - a. When do teachers begin teaching the bow technique?
  - b. When pieces do teachers use to implement the bow technique within the Suzuki violin literature?
  - c. When do teachers expect students to become proficient with the skill to perform it independently?
3. Demonstrate examples of the survey findings using models from the Suzuki violin literature.

4. Demonstrate how these bow techniques are used in professional literature with examples from Stravinsky's "The Soldier's Tale."

5. Perform a trio version of Stravinsky's "The Soldier's Tale."

## **Chapter 4:**

### **RESEARCH FINDINGS**

#### **“Teach the Twinkles with Tchaikovsky Violin Concerto in Mind”**

In 1985 a small 11-year-old girl stood in front of a group of Utah’s top Suzuki violin teachers. She was there to demonstrate to the teachers a “new” way of teaching Veracini’s Gigue in book five of the Suzuki violin literature. Previously, the piece had been taught almost robotically, with the notes performed in the middle of the bow; the bow played very “sticky” and connected to the string. The new way incorporated playing the piece at the bottom half of the bow. In addition, it included playing “off the string” for both up and down bows using a beginning spiccato or collé motion. One difficulty with this new version was playing off the string for the down and the up bow so that the music did not sound like “hiccups.” During the 1980s, there were concrete ideas about when to teach different techniques within the Suzuki literature, with many teachers basing their teaching techniques on a series of masterclasses Dr. Suzuki presented at the University of Wisconsin in 1976. Vibrato, sightreading, and shifting to other positions were taught in book four. Playing “off the string,” collé, and spiccato, along with more right-hand bow flexibility, was only introduced in the advanced books closer to concertos. Waiting until students were playing advanced music served several purposes. These include helping students produce the best tone out of tiny violins, assisting students in staying together when playing as a group, and lining up left-hand fingers with the bow so that students could create a clear tone. Rarely did a teacher deviate from this timeline. Although, at that time, teachers did not understand that Dr. Suzuki had begun a new method of learning to play the violin for very young children, he made a program with strong parental support. His program relied on listening to recordings, repetition, encouragement, group classes, graded repertoire, and

delayed note reading until students were proficient in producing good tone on the instrument.<sup>9</sup> He created a philosophy with a methodology that could change to fit the needs of all students. He struggled with calling it a “method” because he considered his ideas more of philosophy with a methodology open to experiment and change. According to the Suzuki Association of Americas website, the Suzuki method is different from other methods because:

- Suzuki teachers believe that musical ability can be developed in all children.
- Students begin at young ages.
- Parents play an active role in the learning process.
- Children become comfortable with the instrument before learning to read music.
- Technique is taught in the context of pieces rather than through dry technical exercises.
- Pieces are refined through constant review.
- Students frequently perform individually and in groups.<sup>10</sup>

Following these guidelines, teachers can add techniques to fit the needs of each student when they feel it is appropriate. Some students grasp concepts quickly and immediately add technique to newer pieces, and some need more time and preparation. A four-year-old child could play the graduation piece from book one differently from a seven-year-old student, and the technique should adapt according to the needs. Teachers with struggling students may teach complex techniques using only the most accessible review pieces until they can add them to more complex music.

---

<sup>9</sup> “About the Suzuki Method.” Suzuki Association of the Americas. Accessed February 18, 2022. <https://suzukiassociation.org/about/suzuki-method/>.

<sup>10</sup> Ibid.

Little is written about when and how to teach different bow techniques within the Suzuki methodology and philosophy. Technically, most Suzuki violin literature comprises music from the Baroque period. Suzuki introduced most of these pieces with very “sticky” bows so that students could produce a robust and solid tone. When Suzuki visited the United States in 1976, he worked with American students in recorded masterclasses that have since been released and grouped by subject. In these classes, he spent much time working with students on creating a beautiful solid tone and only worked with advanced students on additional right-hand bow flexibility.<sup>11</sup> Some teachers speculate that Suzuki used music from the Baroque period throughout all violin levels because students would be using a similar bow technique throughout the first eight books allowing students to focus on other aspects of creating music. After American teachers had taught his method for a few years, they wondered how to apply more difficult bow strokes to music from the baroque era. Students in America also had access to better violins. They did not stay in the smallest violins for as long as their Japanese counterparts, which also helped students perform these techniques correctly. A violin student’s Suzuki journey begins with Twinkle Twinkle Little Star variations, with Baroque-style bow technique in mind.<sup>12</sup> In Japan, Suzuki also had tiny, young children playing advanced music. Their small instruments and physical capabilities possibly limited their capacity to perform music from other periods. It is interesting to note that Suzuki’s subsequent literature for viola, cello, and bass, while still beginning with Baroque music, introduces music from other musical periods more prominently starting in books four and five. Studying these pieces allows students opportunities to develop other bow techniques earlier. One of the most famous Suzuki pedagogues

---

<sup>11</sup> A lecture and demonstration lesson on changing strings given by Shin'ichi Suzuki at the American Suzuki Institute, Stevens Point, WI., August, 1976 - UWDC - UW-Madison Libraries, accessed March 15, 2022, <https://digital.library.wisc.edu/1711.dl/PE7BNCEWN7EJS86>.

<sup>12</sup> Kendall, John. Interview by Monica Thiriot. Suzuki Book 2 Training. Washington, D.C. 2005.

in the United States, John Kendall, spent many years studying with Suzuki. He taught that Suzuki was constantly experimenting with new techniques and ideas. Suzuki's main philosophy did not change, but the basic process of teaching and playing the violin transformed as he grew as an educator.<sup>13</sup>

Suzuki created a philosophy and put together the literature to study. Still, he left it up to individual teachers to decide how to teach basic techniques to each child. Hundreds of violin teachers receive additional training from official, certified Suzuki teacher trainers every year. Each trainer teaches according to their personality and opinions on when to teach specific techniques. They show other teachers what they have found works best for their students as they help each student learn the techniques required to become proficient in playing on each level. There are many variations and thoughts about when it is best to teach each skill.

The researcher for this project was the girl selected to perform the “new” bow technique for the Suzuki teachers in Utah back in 1985. In speaking with some of the teachers in attendance, the changes to teaching more difficult techniques came not from Dr. Suzuki but violin pedagogues within the United States. Within the United States, teachers found that if they were to “teach the twinkles with Tchaikovsky’s violin concerto in mind,”<sup>14</sup> they needed to teach students more than just sticky bows in baroque pieces. Teachers preparing students for advanced concertos after the Suzuki literature required that they begin teaching spiccato or collé motion before book nine or ten and the Mozart Concertos. Consequently, teachers in the last twenty-five years have experimented with

---

<sup>13</sup> Kendall, John. “Mej Encore: Suzuki's Mother Tongue Method.” *Music Educators Journal* 83, no. 1 (1996): 43–46. <https://doi.org/10.2307/3398994>.

<sup>14</sup> Child, Karen. Interview by Monica Thiriot. Advanced Suzuki Violin Teacher. January 2022.

finding ways to teach these techniques within the Baroque pieces in the literature. For example, if teachers are teaching the Twinkle Variations “with Tchaikovsky’s violin concerto in mind,” it becomes necessary to decide when students should begin learning different bow techniques, what techniques should be applied, and when students should feel comfortable with the styling. These are the main questions this research project set out to find.

### **Martelé Bow Stroke**

The martelé stroke is a “decidedly percussive stroke with a consonant type of sharp accent at the beginning of each note and always a rest (or space) between strokes.”<sup>15</sup> In an article in *Strings Magazine*, Laurel Thomsen says that martelé provides “the consonant sounds that make music interesting, provide contrast to smoother, vowel-sound strokes, and add clarity to passages in general.”<sup>16</sup> Martelé is a french word that means hammered. According to Elizabeth A. H. Green in her book “*Orchestral Bowings and Routines*,” it is considered “the underlying foundation on which ultimate clarity of style is built.”<sup>17</sup> The accent in this stroke requires preparatory pressure on the bow, almost like pinching the string. The violinist must physically see the bow move down on the string and feel the hair grip the string. This pinch is necessary as it creates the note’s essential accentuation but is immediately released in a simple détaché stroke. Martelé can be used with any amount of bow, from using the entire bow or a small area. Because preparation for this stroke is necessary, violinists often lift the bow off the

---

<sup>15</sup> Ivan Galamian, *Principles of Violin Playing & Teaching* (Brattleboro, VT: Echo Point Books & Media, LLC, 2017), 71.

<sup>16</sup> Ibid.

<sup>17</sup> Galamian, 71.

string when it is played near the frog of the bow. Then it is placed on the string again with pressure or by pinching the string. According to pedagogue Galamian, it is “necessary to add that the fingers and hand must be flexible and yielding, true to their nature as springs.”<sup>18</sup>

According to Stephen Clapp, violin professor and dean emeritus at the Juilliard School, “the most important element of the martelé stroke is the silence, while the most notable characteristic is the pinch.”<sup>19</sup> With countless articles and books about teaching martelé and why it is essential for a violinist, the difficulty now lies in determining when to teach martelé.

According to the survey associated with this project, sixteen of the twenty teachers that answered this question stated that they introduce the martelé stroke when students are in book one. In addition, six teachers said they teach it from the beginning with the first “Twinkle Variation,” and eight teachers wait until the middle of the book with “Allegro” and “Andantino.” The two charts below show when teachers introduce martelé and the pieces they specifically use to teach the bow stroke. Please note: Pieces are listed in order by book level.

<b>When do you introduce martelé?</b>	<b># of Teachers</b>
Twinkles	6
Allegro	7
Andantino	1
Gossec Gavotte	1
Book 1	2
Book 2	1
Book 3	1
Book 6	1

<b>What pieces do you use to teach the martelé stroke?</b>	<b># of Teachers</b>
Twinkle	11
May Song	2
Allegro	10
Andantino	2
Book 1 pieces	2
Gavotte in D Major	1
Book 4 (Vivaldi's)	3
Kreutzer 42 #7	1

---

<sup>18</sup> Ibid. 71.

<sup>19</sup> Stephanie Powell, “How to Master Martele,” Strings Magazine, March 7, 2017, <https://stringsmagazine.com/how-to-master-martele/>.

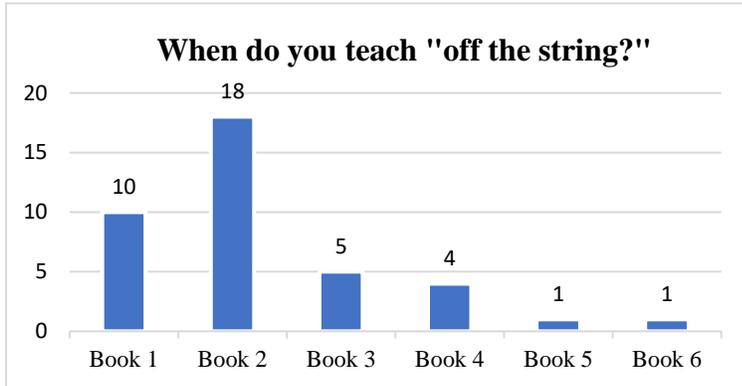
According to this survey, teachers overwhelmingly feel that students should begin learning the martelé stroke in book one, and most of the repertoire teachers used to teach the stroke were also from book one. Therefore, it is no surprise that sixteen of the twenty-eight teachers felt that students should be comfortable playing a basic martelé stroke by the end of book one. However, twelve teachers thought it takes a little longer to develop this stroke, with six saying students should have it set by the Vivaldi Concerti in book four. Several teachers noted that a proper martelé stroke is a lifelong skill to develop but still expected students to play with a confident beginning martelé stroke by the end of book one.

<b>When should students feel comfortable playing martelé?</b>	
Twinkles	3
Allegro	4
Allegretto 1	1
Andantino	1
End of book 1	7
Book 2	4
Book 4	6
Books 2-4, begin, develop 4-8	1
End of book 6	1

### **Playing Off the String**

Once a student has developed a solid tone, they can begin lifting the bow off the string after playing a note to create a definite space before the following note. Playing off the string is often performed at the frog or the lower part of the bow. When asked in the survey when they begin to teach students to play “off the string,” most teachers listed several pieces. Twenty-nine teachers responded, listing thirty-nine pieces, with several repeated answers. Ten teachers listed pieces in book one, while eighteen listed ones in book two, and ten teachers, specifically listed “Hunter’s

Chorus” as the piece to use. A few teachers continue with Dr. Suzuki’s “sticky bows” until students are in book three with “Humoresque” and Becker’s “Gavotte,” and others wait until book four or later.



<b>Pieces Listed by Teachers</b>	
Andantino	2
Minuets (book 1)	2
Happy Farmer	3
Gossec Gavotte	2
Long Long Ago (bk 2)	5
Hunters Chorus	10
Lully Gavotte	1
Gavotte from Mignon	1
Book 2	1
Book 3	5
La Cinquotine	1
Book 4 (Seitz)	4
Country Dance (bk 5)	1
Book 6	1

### Developing Spiccato

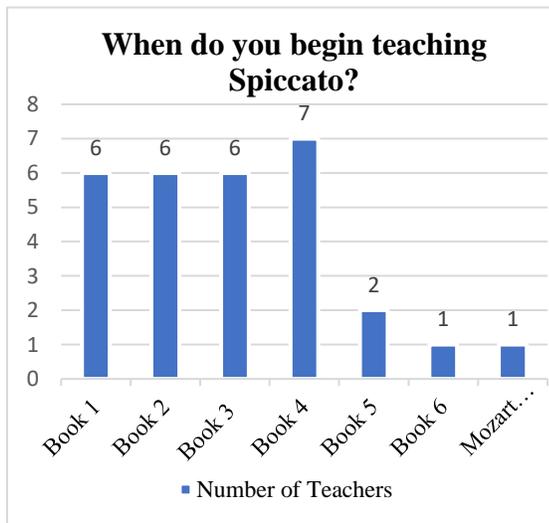
“A general characteristic of the spiccato is that the bow is thrown down on the strings for every note and... lifted again.”<sup>20</sup> The violinist must use an arc-like movement with their arm, wrist, or fingers to execute this bow technique. It can be represented in this manner . The amount of curve on the arc determines the type of sound or the produced tone. If the arc is more flat,  the tone will have greater substance, and if the bow has a larger vertical drop  and is more narrow and deep, the sound is more percussive. Some Suzuki violin teachers have students practice this movement by calling it “The Smile”<sup>21</sup> exercise. They have students

<sup>20</sup> Galamian, 75.

<sup>21</sup> Credited to Cathryn Lee.

practice moving in the arc with the entire arm, then from the elbow down, using the wrist and fingers, and then just finger motion. In spiccato, the main action comes from the arm, with the fingers and wrist taking a slightly more passive role. Typically, spiccato is performed in the bottom two-thirds of the bow.

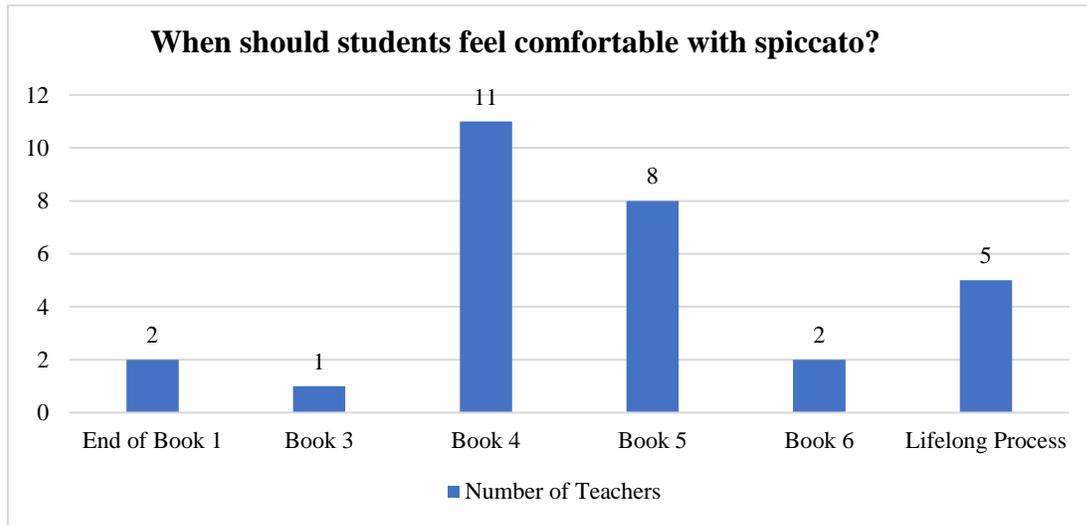
In the survey, twenty-five of the twenty-nine teachers felt that spiccato should be taught in books one through four, divided almost evenly. Regardless of when they thought it was appropriate to begin teaching spiccato, more than half of the teachers had students review book one-pieces, including the “Twinkle Variations,” “Perpetual Motion,” and “Etude.” Five teachers mentioned several of the pieces in book three that are conducive to spiccato, including Martini’s “Gavotte,” Becker’s “Gavotte,” and Bach’s “Gavotte in D Major.” Five additional teachers commented that they introduced spiccato in book four with the Seitz student concertos.



What pieces do you use to introduce spiccato?	
Book 1 – Twinkles, Perpetual Motion, Etude	12
Book 1 – Andantino to Gavotte	6
Book 2 – Long, Long Ago, Hunter’s Chorus, Gavotte from Mignon, Lully Gavotte, Boccherini	5
Book 3 Pieces	5
Book 4 – Seitz Concertos	5
Book 4 – Perpetual Motion	1
Book 5 – Country Dance/German Dance	2
Cathy Lee’s Bow Exercises	1
Mozart Violin Concerto	1

From the survey results, book four is a pivotal book with eleven teachers expecting students to be confident and comfortable playing spiccato in book four. Conversely, eight teachers felt that book five was when students should easily play spiccato. Five teachers were

clear that playing all variations of spiccato is a lifelong learning process, and they would not say when students should be able to integrate this skill into their playing completely.



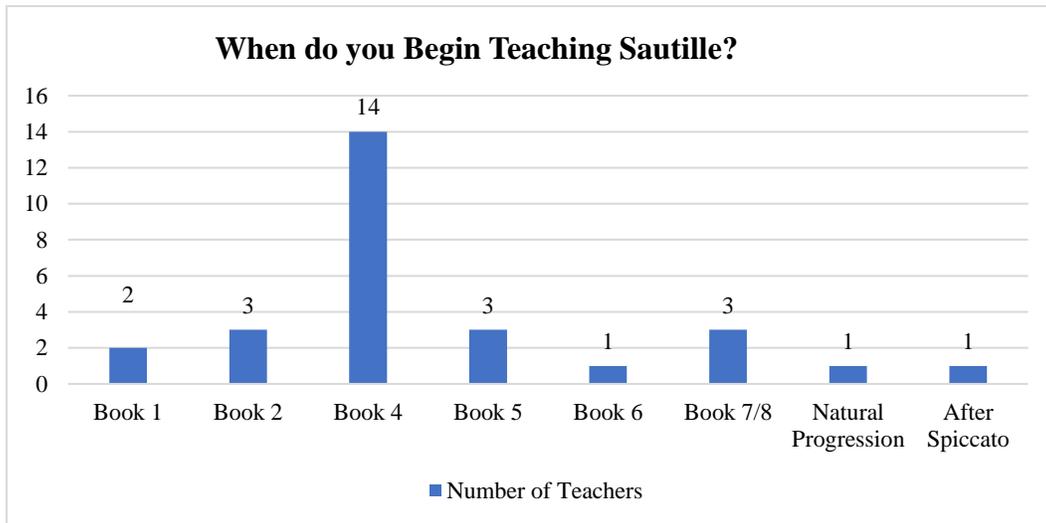
### When to Play Sautillé

Sautillé also uses a “jumping bow”<sup>22</sup> like spiccato; however, with sautillé, there is no lifting the bow off the string. One critical element in playing sautillé is determining where it will best work on each student’s bow. If performed in the correct place for the tempo, the bow will jump or bounce off the string. Another essential part of sautillé is using the proper bow hold. If students grip the bow too tightly or press too hard on the third and fourth fingers, the bow will not bounce. In this bow technique, the motion comes through the arm and the wrist, with the finger’s passive. According to the survey, sautillé offered the most consistent answers. Most teachers begin teaching sautillé in book four, with a couple teaching it in books six, seven, and eight. The consistency in responses may come because the pieces in book four and book six

---

<sup>22</sup> Galamian, 77.

seem encouraging in allowing a student to begin developing that skill. One teacher pointed out the importance of students being comfortable with spiccato before they are allowed to work on sautillé, which could also explain why some teachers wait until book four.



Most teachers introduce sautillé in Bohm’s “Moto Perpetuo” and sections of the Seitz Concertos. Several teachers use music outside of the Suzuki literature to teach sautillé with pieces like Monti’s “Czardas” and Kriesler’s “Sicilliene and Rigadaun.” In the typical Suzuki style, one-third of the teachers commented that they begin teaching students the technique using the “Twinkle Variations,” “Perpetual Motion” (book 1), and “Etude.” Eleven teachers expect students to use sautillé on their own by the end of book four, but the rest of the teachers allow the skill time to develop and do not expect students to feel confident with it until the later Suzuki books.

<b>What pieces do you use to teach sautillé?</b>	
Book 1 – Twinkles, Perpetual Motion, Etude	10
Seitz Concertos	5
Perpetual Motion - Bohm	9
Kriesler – Sicilliene and Rigadaun	1
Fiocco Allegro	1
Czardas	2
Sevcik Exercises until advanced	1
Not Sure	1

<b>When should a student feel comfortable with sautillé?</b>	
Book 3	1
Book 4 – Perpetual Motion	11
Book 5	1
Book 7	4
Book 8	1
Fiocco (book 6)	2
La Folia – Book 6	1
No expectations – just naturally introduce	3

### **The Difficulties of Collé**

Some confusion with definitions occurs when martelé is performed with small strokes, using only your fingers and wrist, similar to the collé stroke. According to Jacob M. Dakon and Selim Giray, collé is a “relatively small collaborative motion involving the right wrist, hand, and fingers. It is produced by placing the bow on the string with a ‘light pinch’ at the beginning of the stroke and immediately lifting it to prepare the next note.”<sup>23</sup> The main difference is that collé requires active fingers that lead the stroke. Other strokes the fingers take on a more passive role. Often collé is notated in music as an “off-string martelé or a combination of spiccato and martelé.”<sup>24</sup> According to Galamian, “In the collé, the bow is placed on the strings from the air, and at the moment of contact, the string is lightly but sharply pinched. Simultaneously with the pinch, the note is attacked. After the instantaneous sounding of the note, the bow is immediately slightly lifted off the string in preparation for the next note.”<sup>25</sup> In French, collé means “stuck” or

---

<sup>23</sup> Colle Action, 33.

<sup>24</sup> Gerle, *The Art of Bowing Practice: The Expressive Bow Technique*, 67.

“glue.” Another difference between a finger martelé and a collé stroke is that the preparation time is significantly reduced. The active fingers in the collé create a sound creating “a pizzicato with the bow.”<sup>26</sup> In general, the performance of the stroke takes place at the lower half of the bow. However, occasionally other sections of the bow may be used as well. Galamian states:

The collé is a critical practice of bowing, invaluable for acquiring control of the bow in all its parts. Added to this, it is musically very useful as a stroke that combines the lightness and grace of the spiccato with the incisiveness of the martelé. Played at the frog gives the same sound effect as a light martelé played at the point and, in general, can replace the martelé when the tempo is too fast for the latter. The collé can give more emphasis to specific notes in a spiccato passage and can be used as an aid to slowing down the spiccato bowing when necessary.<sup>27</sup>

In the most accurate definition, collé is not a stroke used in Baroque music and a rarely performed in solo violin works. However, a collé motion with the fingers will help all violinists create a better sound, relax their fingers, and prepare for other types of bow strokes. According to the survey, a few teachers expect students to use flexible fingers by the end of book 3, but most of the other answers ranged from book one through book seven throughout the Suzuki books. Several teachers commented that they never actually teach collé within specific music. Instead, they start teaching it with bow hold exercises in book two or three and then talk to students about keeping their hands relaxed. They also teach the technique using scales and Wohlfahrt’s *60 Studies* exercises. Several teachers mentioned a few pieces used to teach the technique, including Martini’s “Gavotte” in book three and Bach’s “Gavotte” in book five. Teachers also introduce it into music with the “Long Long Ago Variation,” “Hunters Chorus,”

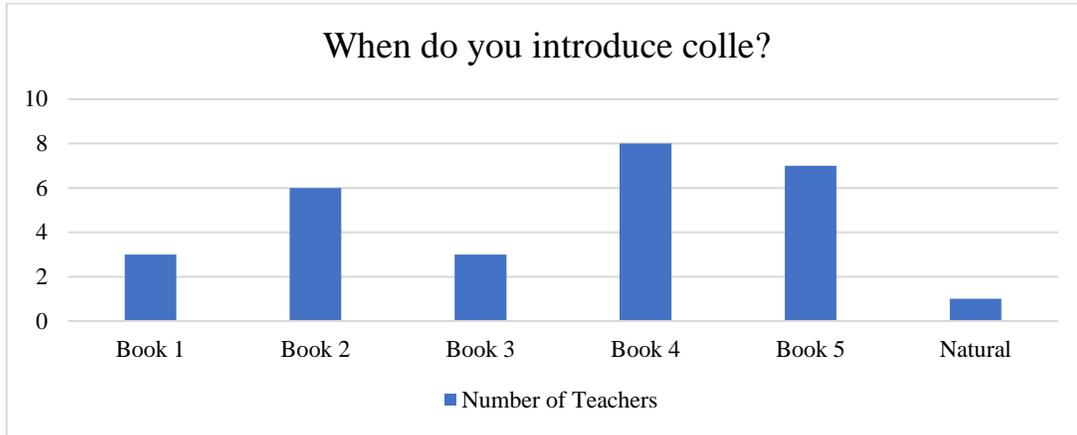
---

<sup>25</sup> Galamian. 73.

<sup>26</sup> Ibid. 74.

<sup>27</sup> Ibid.

and the Seitz concertos. One teacher mentioned that they like to use pop music to teach this technique!



What pieces do you use to introduce colle?	
Only Bow Exercises	1
Wohlfahrt, No 15	1
Sevcik	1
Scales (approx. book 3)	2
Twinkles	3
Perpetual Motion Singles	6
Book 1 Review	2
Long Long Ago, book 2	3
Hunter's Chorus	3
Lully Gavotte	1
Martini Gavotte	4
Becker Gavotte	2
Seitz	3
Book 5 Gavotte	1
Country Dance	1
Gigue	1
The Boy Paganini/Extra	2

When should students feel comfortable with colle?	
Exercises until natural	1
Twinkles	1
End of book 1	1
Lully Gavotte	1
Book 2	1
Martini Gavotte	2
Book 3	2
Becker Gavotte	1
Seitz	1
Book 4-5	6
Book 5 – Bach Gavotte	2
Book 5 – Gigue	1
Book 5 – Country Dance	1
Book 5/6	1
Book 7	1
Book 8	1

## **CHAPTER 5:**

### **DISCUSSION**

The journey for this project began in 2020 when this researcher had two violin students accepted into the music programs of their choice, and two different professors told them they needed to work on a “collé motion” before school started in the fall. While understanding that this is an advanced skill, the teacher felt she had failed her students. She questioned when and how this should have been taught to the students so that other students would be better prepared. Questioning how to teach colle began a study on teaching bow techniques that included attending Suzuki teacher training, studying articles, and watching many YouTube videos to learn and improve. The result was that there were no clear answers. Still, this research project found some guidelines for teachers about playing the violin, teaching with the Suzuki Method, and teaching bow techniques to help each student reach their potential.

Shinichi Suzuki wrote very little about the bow technique, focusing on a “sticky” bow that produces a strong, confident tone. However, his philosophy and willingness to try new ideas and experiment allow teachers to find out for themselves how they will teach each technique and when. For some teachers, students spend up to half of their beginning lesson times on bow technique, and beginning students can often spend an entire year learning bow control by playing just the Twinkle variations. Others push through the Twinkle Variations faster, focus on bow technique during the student’s daily review, and then begin working on specific bow techniques as the student plays more advanced pieces found in books four and above. Some teachers feel five minutes a day of bow hold exercises is plenty of time, and some teach bowing techniques within the actual piece or with scales, etudes, or review pieces. Finally, some teachers are just searching for ways to help students stay motivated and practice every day. Helping some

students may only include a quick check to make sure the fingers on the bow are in the correct place at the beginning of a piece. Just as every student is different, every teacher needs to find their path with each student. The right way for some highly motivated families is to spend 15 minutes a day on bow exercises with their beginners. For other children, different modifications need to happen. The Suzuki Method allows teachers to work with the parent and the child to figure this out. With open communication, teachers can determine what they will prioritize and then create their plan for introducing a bow technique, implementing it, and what they will continue to do so that students become fluent with the technique.

Another discovery of this project was observing the teacher trainers. Several times throughout each training, an attendee in the class would offer suggestions and ideas, and often the teacher trainers would take note of a new idea with the thought of using it with their students. The Suzuki Teacher Trainers are comfortable teaching on every level, yet they are still learning, experimenting, and trying new ideas. The great motivator Zig Ziglar said, “I’m a constant learner. You need to be a constant student because things change, and you have to change and grow. And I emphasize the word ‘grow.’”<sup>28</sup> The best Suzuki Violin Trainers in the country did not immediately have an answer to every question. They had differing opinions and thoughts and were continually searching for ways to help their students gain a love and appreciation of music. They listened and learned while they were teaching.

One effective method observed is including at least five minutes of lesson time specifically dedicated to bow exercises that will develop finger flexibility. Having a specific

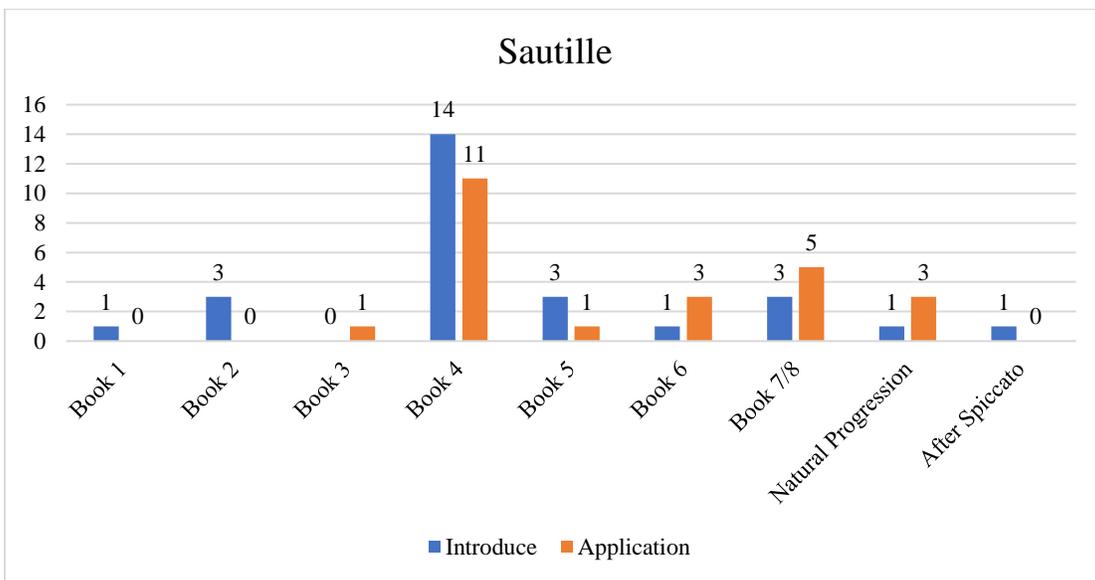
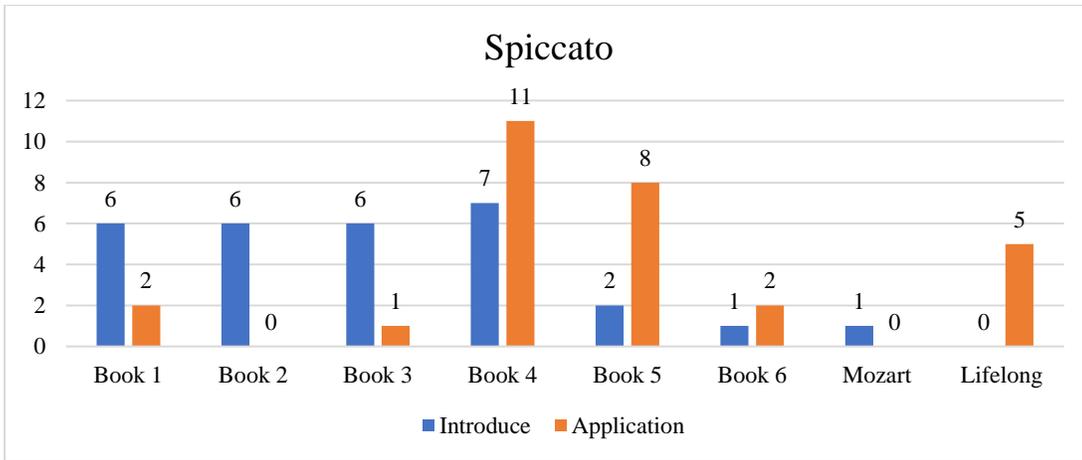
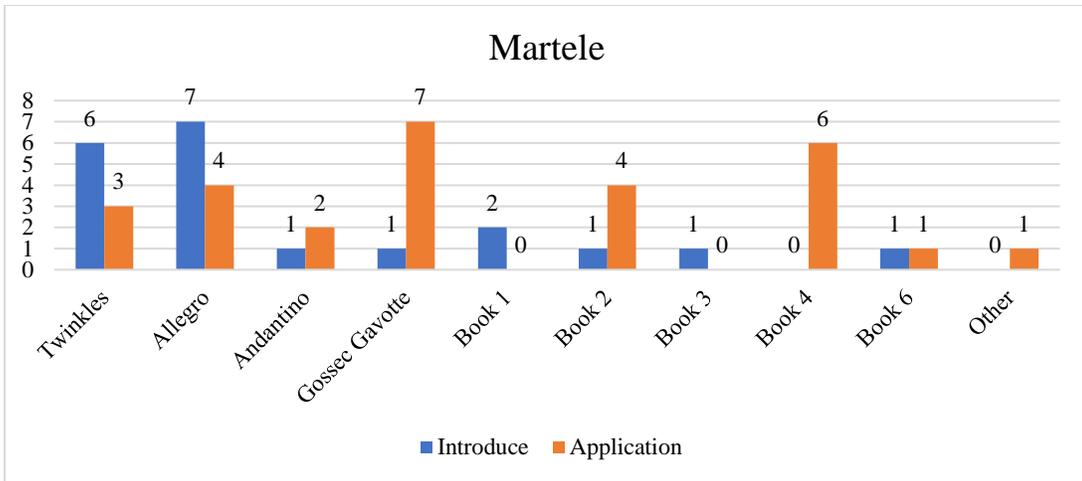
---

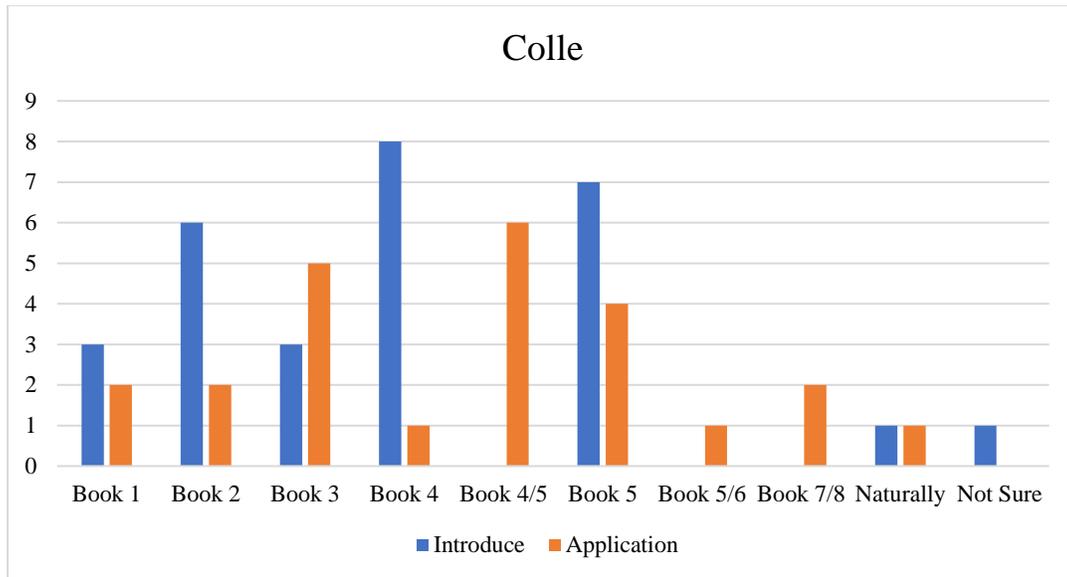
<sup>28</sup> Ziglar, Zig. I'm a constant learner. June 21, 2016. <https://www.allgreatquotes.com/quote-470878>.

routine in place helps students develop and increase the speed with each exercise to add additional skills. Keeping bow practice to approximately five minutes keeps even the youngest students from feeling bored or overwhelmed. At first, the movements feel awkward to the students and can take more time, so beginning with two to three exercises works well. As students become comfortable with the exercise, it is essential to add additional exercises to develop other techniques. Choosing which bow hold activities, to begin with, may feel overwhelming, and teachers may feel inundated with options. With many YouTube videos and suggestions from articles, it is not easy to know where to start. Ultimately, teachers need to choose what technique they would like to develop and begin. Once a teacher starts teaching these exercises, it becomes easier to determine what is beneficial to the student and what additional activities to include.

### **Timelines for Introduction and Student-Led Application**

Simplifying the timeline charts into two categories helps teachers quickly see when they introduce a technique and expect student-led application. The blue column shows the number of teachers and when they introduce the bow stroke, and then the orange column shows when teachers feel students should be comfortable with the technique. The pieces or books are in consecutive order and describe when teachers introduce the technique in blue and when they think students can apply it on their own in orange.





### Conclusion

At the beginning of this journey, the goal was to find a specific timeline so that teachers would know exactly when to begin teaching martelé, collé, spiccato, and sautillé. However, the researcher discovered many correct times to teach these skills. Seeing the variations of when and how other teachers teach bow technique allows a teacher greater flexibility to place the child's education and love of music as the first goal while making sure they gain the skills needed to push themselves to their highest abilities. This project allows teachers to find guidelines to create a timeline for individual students. The most effective teaching is when there is a clear plan for accomplishing each goal for the student. The variety of choices is not a detriment. Instead, it reflects each teacher's individualism and experience. It allows teachers to find variations of when they can prepare students for new skills and how they can implement the skill, and it gives a better idea of when the individual student should comfortably play the skill.

Further studies into this subject include finding out how teachers initially present and explain the different bow techniques. The study would also include finding out which exercises teachers currently employ, and which ones have resulted in the most success. Additional study would also include holding the bow appropriately and learning the why teachers use different styles. For example, does a specific type help a student with other techniques? All bow technique begins with a good bow hold, which is also an important aspect. Following Suzuki's example, it is up to each teacher to discover and experiment with what works best for their personal teaching style and the student's learning style.

## Bibliography

- A lecture and demonstration lesson on changing strings was given by Shin'ichi Suzuki at the American Suzuki Institute, Stevens Point, WI., August 1976 - UWDC - UW-Madison Libraries. Accessed March 15, 2022. <https://digital.library.wisc.edu/1711.dl/PE7BNCEWN7EJS86>.
- Bushkova, Julia. "Violin Techniques - Spiccato VS Sautille." YouTube. YouTube, October 29, 2018. <https://www.youtube.com/watch?v=b47hOjscnXU>.
- Chin, Eddie. "How to Produce Effortless Spiccato with Elegance and Control." YouTube. YouTube, June 15, 2015. <https://www.youtube.com/watch?v=X2FnKV8tYb4>.
- Calvelo-Hopkins, Cecilia. "The Power of 'Holding.'" Suzuki Association of the Americas. Accessed March 7, 2021. <https://suzukiassociation.org/news/power-holding/>.
- Creswell, John W., and J. David Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: SAGE Publications, 2018.
- Dick, William. *Preparing the Bow for Book 4*. Suzuki Association of the Americas. Accessed February 21, 2021. <https://suzukiassociation.org/news/preparing-bow-for-book-four/>.
- Dakon, Jacob M, and Selim Giray. "Alternative Perspective on Right-Hand Finger and Wrist Mobility." Collé action. Accessed August 8, 2021. [https://www.astastrings.org/Web/Resources/Featured\\_Resources/Coll%C3%A9%20action.aspx](https://www.astastrings.org/Web/Resources/Featured_Resources/Coll%C3%A9%20action.aspx).
- Flesch, Carl. *SCALE SYSTEM: Scale Exercises in All Major and Minor Keys for Daily Study*. Allegro Editions, 2015.
- Galamian, Ivan. *Principles of Violin Playing & Teaching*. Brattleboro, VT: Echo Point Books & Media, LLC, 2017.
- Galamian, Ivan, and Frederick Neumann. *Contemporary Violin Technique*. New York: Galaxy Music, 1966.
- Garson, Alfred. "Learning with Suzuki: Seven Questions Answered." *Music Educators Journal* 56, no. 6 (1970): 64–154. <https://doi.org/10.2307/3392719>.
- Gerle, Robert. *The Art of Bowing Practice: The Expressive Bow Technique*. London: Stainer & Bell, 2001.
- Haugland, Susan L. "Potential: Suzuki's Mother Tongue Method and Its Impact on Strings in Music Education in the United States." *American String Teacher* 59, no. 2 (2009): 28–31. <https://doi.org/10.1177/000313130905900205>.

- Hendricks, Karen S. "The Philosophy of Shinichi Suzuki: 'Music Education as Love Education,'" *Philosophy of Music Education Review* 19, no. 2 (2011): p. 136, <https://doi.org/10.2979/philmusieducrevi.19.2.136>. Khle, Todd, professor V. "Violin Lesson #44; Colle' Bowing." YouTube. YouTube, November 4, 2007. <https://www.youtube.com/watch?v=ZCwYTJNCJyA>.
- "Homepage." Suzuki Association of the Americas. Accessed July 31, 2021. <https://suzukiassociation.org/>.
- Kendall, John. "MEJ Encore: Suzuki's Mother Tongue Method." *Music Educators Journal* 83, no. 1 (1996): 43–46. <https://doi.org/10.2307/3398994>.
- Kyle, Todd. "Violin Lesson #44; Colle Bowing." YouTube. YouTube, November 4, 2007. <https://www.youtube.com/watch?v=ZCwYTJNCJyA>.
- Kreutzer, Rodolphe, and Edmund Singer. *Forty-Two Studies or Caprices for the Violin = 42 Studies or Caprices for the Violin*. New York: G. Schirmer, Inc, 1923.
- Merlin Thompson. "Authenticity, Shinichi SUZUKI, AND 'Beautiful Tone with LIVING SOUL, Please.'" *Philosophy of Music Education Review* 24, no. 2 (2016): 170. <https://doi.org/10.2979/philmusieducrevi.24.2.04>.
- Perlman, Itzhak. "Itzhak on Bow Grip." YouTube. YouTube, August 3, 2011. <https://www.youtube.com/watch?v=6r0WW-KN6VM&t=11s>.
- Powell, Stephanie. "A Technique Reset Can Be Useful at Any Level." *Strings Magazine*, August 7, 2017. <https://stringsmagazine.com/a-technique-reset-can-be-useful-at-any-level/>.
- Powell, Stephanie. "How to Master Martele." *Strings Magazine*, March 7, 2017. <https://stringsmagazine.com/how-to-master-martele/>.
- Sprunger, Edmund. *Building Violin Skills: a Set of Plans Designed to Help Parents and Children Construct Positive Practices*. St. Louis, MO: Yes Pub., 2012.
- Starr, William J. *The Suzuki Violinist: a Guide for Teachers and Parents*. Miami, FL: Summy-Birchard Inc., 2000.
- Suzuki, Shin'ichi, Kyoko Iriye Selden, and Lili Selden. *Nurtured by Love: Translated from the Original Japanese Text*. Van Nuys, CA: Alfred Music Publishing Co., Inc., 2012.
- Suzuki, Shin'ichi, and Mary Louise Nagata. *Ability Development from Age Zero*. Secaucus, NJ: Warner Bros. Publications, 1981.
- Suzuki, Shinichi. *Suzuki Violin School, Volume 1 International Edition*. Van Nuys: Alfred Music Publishing Company, 2020.

Wall, Amanda. "Violin Bowing- A List of Terms." Amanda Wall Strings, October 2, 2013. <http://www.amandawallstrings.com/violin-bowing-a-list-of-terms-4157/>.

Witter, Danae. "The Suzuki Method and beyond for the Advancing Violin Student." *American String Teacher* 65, no. 4 (2015): 40–43. <https://doi.org/10.1177/000313131506500408>.

Ziglar, Zig. "I'm a Constant Learner. You Need to Be a Constant Student Because Things Change, and You Have to Change and Grow. and I Emphasize the Word 'Grow.' - Zig." AllGreatQuotes, June 21, 2016. <https://www.allgreatquotes.com/quote-470878/>.