A Pedagogical Approach to Vibrato Styles
for Advanced Cello Students and Their Teachers

D.M.A. Document

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Abstract

Vibrato is an important technique that is often discussed in the learning process. At the advanced level, students need to form their own artistic sense of when to use vibrato, what kind of vibrato to use, and how to use the vibrato to enhance the music and achieve the composer’s intentions.

The purpose of this study represents two big issues: the first, in chapter two, is a discussion of different types of vibrato. This chapter provides a classification of vibrato into different possibilities of vibrato expression. The second issue, in chapter three, discusses the approach to teaching vibrato. This chapter lists the potential problems that students might have and presents exercises to solve the problems. Chapter four presents a way to interpret music which gives both teachers and students a guide to approach the music which will equip them with more confidence to explore their interpretation.
Dedication

The document is dedicated to my family, my teachers, and all my friends.
Acknowledgments

I am very grateful to many people that have contributed in direct or indirect ways to this document.

First of all, I would like to thank my advisor, Professor Mark Rudoff, who served as a model and inspiration for this document. At The Ohio State University, he has always supported and encouraged me in my performance and study. I believe those experiences will be important to me throughout my life.

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world for their unconditional love and support during the entire study in the U.S. Thank you.
Vita

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Fields of Study

Major Field: Music
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Chapter 1: Introduction

The human voice naturally vibrates, and this vibration beautifies the sound of the notes. Many singers apply vibrato in varying degrees to convey the feeling and character of the music through their artistry. In a similar way, using vibrato when playing the cello allows the performer express musical intensity. A slight variation in vibrato can make a huge difference to the music. Advanced students and their teachers should establish a common approach towards vibrato to make it easier to communicate musical expression. Using a variety of vibrato styles and techniques can produce different musical intensities, tone colors and mood modulations.

The use of vibrato as an expressive element is firmly established in current cello performance. Because vibrato is so important and so complex, it entails different teaching targets at every level of learning the cello. At the beginning level, students are introduced to the technique and they get used to incorporating vibrato into their playing. At the intermediate level students need to master the mechanics of vibrato and make it an integral part of their playing. At the advanced level, students need to become confident in using their own artistic judgments in deciding when to use vibrato and what kind of
vibrato to use to enhance the music. As a student progresses from the advanced level to the professional level, vibrato becomes an artistic subject to explore.

At the advanced level, students are not only required to master vibrato, but they also need to be able to explain their choice of vibrato at a particular spot in their playing. There is no right or wrong justification to a choice of vibrato; rather, the focus should be on the appropriateness of the vibrato in the musical context. Most of the time, advanced-level students make spontaneous decisions. Students at this level should learn to identify their weakness in their playing and should explore their practice techniques on their own. Doing so will enable them to become independent learners, which is important because at the professional level musicians often learn repertoire independently. Similarly, teachers must know how to teach their students (including beginning and intermediate level students) how to practice. Advanced students and their teachers need to learn to identify the problem and give suitable prescriptions according to the symptoms. For this reason, advanced students and their teachers not only have to know how to use different types of vibrato well but they also require the ability to identify and solve the problem.

However, unlike fingerings and bowings for which clear directions can be given, there is no cookie-cutter formula that can be applied to vibrato, which can lead to confusion as
students struggle to grasp the complexities of vibrato techniques. One of the most common remarks from a teacher to a student is, “use more vibrato.” What does that mean? What should students do to produce more vibrato? Should they make their vibrato wider or faster? It is extremely difficult for students to understand what kind of vibrato their teacher wants them to use. Therefore, it is important to have a systematic approach as a reference in order for students and teachers to communicate effectively. A systematic guide for students and their teachers can be established with a shared perspective on vibrato. Furthermore, students require better understanding of vibrato to apply the most suitable technique and style to their playing. In general, vibrato can be divided into four approaches: fast, slow, wide and narrow. These elements can produce many vibrato combinations. In addition, different combinations of vibrato can produce many more varieties; vibrato is not limited to one type of vibrato per note.

At this point, I would like to share my personal experience learning vibrato. Vibrato is my weakness but I did not realize the extent of the problem until I started to relearn vibrato. Before then, I always thought that my vibrato was not fast and wide enough. I thought that I only needed to work on my vibrato in continuous vibration to make it evenly fast and wide. However, in the process of relearning, I found that I
unconsciously incorporated vibrato into my playing without continuous vibrato motion. I also did not analyze and think about how to vary my vibrato in my playing. I was unaware that a slow vibrato and fast vibrato could create different moods. Most importantly, I did not know that there were many possible kinds of vibrato. As a result, my playing lacked variety, especially in tone color. As we perform music, we incorporate phrasing and feeling into our music.

This can be seen as a representation of ourselves, personal choices and ideas that we can use to enhance our music. When these musical ideas become part of our practice, it will habituate to become part of our playing. Such a level of playing is one that a professional player would want to aim for. Because I struggled with vibrato, I wanted to present a study that can help students like me to learn to practice vibrato. My experiences showed me some of the problems inherent in leaning and practicing vibrato successfully, and led to the exploration of the critical problems teachers and student face that I undertake in this study.

The purpose of this study is to discuss two major issues with understanding, teaching and learning vibrato: the first, discussed in chapter two, is a classification of vibrato into different possibilities of vibrato expression. It is my hope that these terms
will help teachers point out details directly and allow students to grasp the concept quickly, so they can achieve effective musical communication through vibrato. The classifications approach to the interpretation can guide students to the kind of vibrato best suited to the musical situation. The second issue, discussed in chapter three, is the approach to teaching vibrato. The chapter will list the potential problems that students might have and present exercises to solve the problems. Students and teachers can modify the exercises depending on the situation and need. This can also be another topic to explore in future research. Chapter four will present a way to interpret music that students and teachers can use in their playing as a potential model for to approach the music, which will equip them with more confidence to explore their interpretation.
Chapter 2: A Discussion of the Different Types of Vibrato

Different types of vibrato represent musical intensities, tone colors, and mood modulations. Singing spontaneously produces vibrato. Using vibrato in string playing is a technique that was added on to imitate singing. One way that the performer can differentiate his or her artistry is by selecting vibrato that suits what is written on the score and expresses the performer’s interpretation. A mature vibrato is distinguished by the musician’s control of speed and width from slow and narrow to fast and wide. There are many possible applications of vibrato. A fast and narrow vibrato can be applied in a certain passage of great intensity and a slow and wide vibrato can be applied in certain slow and lyrical places. There are many other possible combinations, depending on the musical context. It is true that vibrato is very personal, and in that sense, not completely teachable. However, this does not mean that it should not be taught.

First and foremost, when teaching vibrato techniques, it is important to have students listen to models to acquire an aural sense of vibrato. A musician learns the possibilities of vibrato by listening to other musicians. Singing is one of the models, but students also need to listen to a range of string playing as well, and possibly even oboe
and flute. Listening to models is important for developing an understanding of how artists use vibrato. Such listening experiences also provide the necessary foundation for any type of technical study like that described in this document.

It is hard for teachers to find a publication that discusses the different varieties of vibrato and how they apply to music. Some articles and publications written by teachers mention that they teach their students the different varieties of vibrato by giving them exercises to master all kinds of vibrato. However, the articles are not clear on how the different kinds of vibrato can be applied in playing. Instead, they mention that a true artist will know how to select a perfect vibrato to match the music to improve on tone. This clearly does not explain the reason for the choice of vibrato.

Talented students can produce a beautiful tone with their advanced technical abilities. However, are they able to classify the different types of vibrato? Can they explain why they chose a specific type of vibrato in their music? If students can describe their choices and explain why they made them, they will be able to bring out the expressive qualities in the music through the use of vibrato effectively. For this reason, I think teachers need to be able to distinguish different types of vibrato and be clear about how they would apply them to the music in order to teach students interpretation rather
than just techniques.

This study is for advanced students and their teachers. The study will start by analyzing combinations of vibrato technique.

**General Concept of the Vibrato**

Vibrato is controlled by the oscillation speed and width in the left hand, and by bow weight, bow speed, and the bow’s contact point. These factors can result in many combinations of vibrato. Each combination can be applied in different music patterns.

The oscillating motion of the left hand can be fast or slow in speed. The speed of the vibrato can be changed according to dynamics, note length, and expression of the music. Fast vibrato usually indicates an intense and powerful expression. Slow vibrato is usually used with a calm and soft expression. The width of the oscillating motion is the other feature of the left hand. The wobble of the pitch is controlled by the width. A wider oscillation can achieve a bigger range of pitch swing, and vice versa for a narrower oscillation. The effect of a wider oscillation can be very touching and strong. Conversely, the effect of a slow oscillating vibrato is calm and delicate.

Besides the left hand, the right hand can be another tool to develop the musical layers. In the right hand, bow speed, bow weight and bow contact point are the three
elements that will cause different sounds. Bow speed can be varied by the note length, the moving direction of the phrase, and dynamics. Fast bow movements can enlarge the string’s vibration, which produces a big volume. Slow bow movements can control the vibration, which produces a small volume. Bow weight plays a huge role in producing different kinds of dynamics. A heavy bow can enlarge the string vibration resulting in a big sound. On the other hand, a light bow limits the string vibration, which maintains the quality of the tone. The bow contact point is decided by dynamics and the position of the left hand. The right hand and the left hand are both important for the vibrato, but for the vibrato catalog, the left hand will be the main subject of discussion.

There are many things that one has to take into account when deciding the intensity of the vibrato: thickness of the strings, dynamic level of the phrase, contact point of the bow, and musical interpretation. The words fast and slow in this discussion do not imply the actual vibrato frequency. They are not a unit of measurement to count how many vibrations have to be made in fast or slow vibrato; they present an idea of the relative interpretation of music. Here, fast does not mean an equally fast vibrato for all fast vibrato categories. A fast vibrato may have different speeds in different examples. It might be on the faster side of a soft lyrical phrase; it also can be on the lower note which
has to vibrated more to bring out the clarity of the vibrato. In addition, slow to fast
vibrato can be applied when changing the dynamic level. For example, when playing an
effective crescendo, vibrato should begin slow and then gradually speed up. There are no
fixed formulas on how vibrato is applied to a piece of music. Rather, the performer
should interpret pieces individually and determine what kind of vibrato to use to convey
his or her interpretation effectively. Teachers can use the vocabulary of fast, slow, wide,
and narrow to help students decide what vibrato to use and adjust their vibrato depending
on the music they are playing.

In the following discussion, the vibrato frequency should not necessarily be
directly translated from example to example. Every example should be treated as an
individual case. In short, the words that will appear in the following section are a way to
explain and represent a kind of thinking and interpretation; they do not provide an
absolute answer. Most importantly, the following detailed analysis of vibrato is not a
substitute for listening. Listening is an essential element in learning music. It is my hope
that the idea of vibrato categories will help students understand what they hear when they
listen to the models.
Vibrato Category

There are four big categories for the left hand vibrato: fast and wide, fast and narrow, slow and narrow and slow and wide. Each category can be divided into six types (See Tables 1 and 2).

<table>
<thead>
<tr>
<th>Speed of vibrato - Fast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast &amp; <strong>Wide</strong> (Vibrato Speed &amp; Width)</td>
</tr>
<tr>
<td>Fast &amp; Wide</td>
</tr>
<tr>
<td>Fast &amp; Wide</td>
</tr>
<tr>
<td>Slow &amp; Wide</td>
</tr>
<tr>
<td>Fast &amp; Wide</td>
</tr>
<tr>
<td>Fast &amp; Narrow</td>
</tr>
<tr>
<td><strong>Senza</strong></td>
</tr>
</tbody>
</table>

Table 1: Vibrato Categories: Speed of Vibrato-Fast.

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1 *Senza* is an Italian term that means “without.” Put together, *senza* vibrato means playing without vibrato.
In this study, the writer will focus on Romantic solo music as the main examples to discuss the usage of vibrato because it offers so many opportunities to make choices. Using *senza* vibrato in certain music, for example Baroque music, can make the piece sound pure. On the other hand, using vibrato in other kinds of music, for example music from the Romantic period, can enhance the musical expression and give it a different character.

Fast and wide vibrato is the most commonly used vibrato. This vibrato can apply in all kinds of music, including orchestra and chamber music. The function of fast and wide vibrato is to bring out the different layers of the music. This is usually the first type of vibrato that teachers will teach their students because students will be able to

<table>
<thead>
<tr>
<th>Speed of Vibrato - Slow</th>
<th>Slow &amp; Wide (Vibrato Speed &amp; Width)</th>
<th>Slow &amp; Narrow (Vibrato Speed &amp; Width)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow &amp; Wide</td>
<td>Slow &amp; Wide</td>
<td>Slow &amp; Narrow</td>
</tr>
<tr>
<td>-</td>
<td>Fast &amp; Narrow</td>
<td>Fast &amp; Wide</td>
</tr>
<tr>
<td>Fast &amp; Wide</td>
<td>Slow &amp; Narrow</td>
<td>Slow &amp; Narrow</td>
</tr>
<tr>
<td>Slow &amp; Narrow</td>
<td>Slow &amp; Narrow</td>
<td>Slow &amp; Narrow</td>
</tr>
<tr>
<td>Slow &amp; Wide</td>
<td><em>Senza</em></td>
<td>Slow &amp; Narrow</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td><em>Senza</em></td>
</tr>
<tr>
<td><em>Senza</em></td>
<td>Slow &amp; Wide</td>
<td><em>Senza</em></td>
</tr>
</tbody>
</table>

Table 2: Vibrato Categories: Speed of Vibrato – slow.
differentiate between *senza* vibrato and vibrato immediately.

Fast-narrow, slow-wide and slow-narrow are the three combinations which belong more closely to advanced level techniques. The challenge is how to apply these ideas to create more variety in the music.

If we graph the vibrato intensity on a rectangular coordinate system (the Figure below only uses the first quadrant) from 0 to 10 for *x*-axis and *y*-axis on speed and width relatively (See Figure 1), pure tone will be the origin (0, 0) and the maximum speed and width vibrato will be (10, 10). The region can show many possible combinations which can apply to different music.

Figure 1: Vibrato rectangular coordinate system.
To attain an advanced level of vibrato, the student requires the ability to combine different types of vibrato appropriately in a musical context. The following four categories are divided into vibrato variations. These are some suggestions and examples to help teachers and advanced students understand the possibility of the vibrato combinations. In the following pages, the pairs of numbers in parentheses following suggestions of vibrato styles refer to numbers that we might imagine plotted on the vibrato rectangular (speed, width) coordinate system.

**Fast & Wide Vibrato**

Fast and wide vibrato can be applied to almost all kinds of music. It requires a big steady motion to move the finger above and below the pitch by about a quarter tone range to create the big “wah-wah-wah” sound. Fast and wide vibrato is used in expressive phrases and also to connect notes in a continuous phrase, which measures flow in the music. The fast-wide vibrato requires rotation of the whole arm with an even and steady motion. Students should maintain the hand shape without getting tense, especially in the fingers.

* Fast-wide
Using a fast-wide vibrato through the entire value of a note ensures that the
dynamic level and tension are held consistently at the same level from note to note. The
beginning of the 1st movement of the Lalo Cello Concerto (See Music Example 1) is a
good example where a fast-wide vibrato can be applied extensively. Applying a fast-wide
(10, 10) vibrato to the beginning of the solo line will capture the attention of the listeners
immediately. The whole phrase, especially on the note E (measure 9), requires the
intensity of the vibrato to be maintained to connect the music flow going to the next note.
Apart from maintaining intense vibrato in the left hand, the bow should also move in a
medium-fast speed with a huge amount of bow pressure to produce a bigger and wider
vibration on the thick string.

Music Example 1: Lalo Cello Concerto the 1st movement beginning. ²

² Edouard Lalo, Konzert fur violincello und orchester: Ausgabe fur violoncello und
Another example is in the beginning of the 3rd movement of the Lalo Cello Concerto (See Music Example 2). A fast-wide (9, 9) vibrato is used in the left hand, while speed and pressure are applied to the bow to enhance vibration in volume. In this excerpt, teachers can suggest that their students raise their arm slightly to increase the space needed to make a wider rotation of the vibrato especially in lower positions. To maintain the volume and intensity, bow pressure needs to be applied with the bow close to the bridge.

Music Example 2: Lalo Cello Concerto the 3rd movement beginning. 3

The fast-wide vibrato is often used in the lower strings. It requires more bow and finger weight on the lower strings to produce a bigger volume because of the thickness of the strings. Although a thicker string requires more time to speak, it can bring out a piena voce sound. This example is from the beginning of the 1st movement of the Prokofiev

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3 Ibid., 8.
Cello Sonata (See Music Example 3); the larger oscillating motion in the left hand allows the vibrato to be heard more clearly. The bow needs to be controlled to ensure that it stays on the same lane in order to maintain and balance the volume.

Music Example 3: Prokofiev Cello Sonata the 1\textsuperscript{st} movement, beginning.  \textsuperscript{4}

\textbf{* Fast-wide to slow-wide}

It is common for phrases to end with an effect of a small \textit{crescendo} or \textit{decrescendo}. If the phrase ends with an effect of a \textit{crescendo}, a fast-wide vibrato is used. If the phrase ends with a \textit{decrescendo} effect, the vibrato used can be maintained at a slow-narrow speed or it can go from slow-narrow vibrato to \textit{senza} vibrato. A slow-wide vibrato often indicates that the music has not ended and will continue to the next note or

phrase. In addition, wider vibrato can be used on all the strings and positions, especially in the lower strings and lower positions.

In fast-wide to slow-wide vibrato, the speed of the vibrato goes from fast to slow which consequently means that the volume goes from loud to soft. Going from fast to slow does not imply that the vibrato speed drops suddenly. Rather, the vibrato switches to a slower speed relative to the speed of the fast-wide vibrato. The beginning of the 1st movement from the Elgar Cello Concerto illustrates this type of vibrato well (See Music Example 4). In measure 3, the half note C is played with a sforzando and then with a diminuendo. The music then has to flow to the next eighth note B to continue the phrase. A fast-wide (8, 8) to a slow-wide (6, 5) vibrato will be an appropriate choice for such a phrase. This type of vibrato gives the C room to vary the tone color and change the mood.

![Music Example 4: Elgar Cello Concerto the 1st movement beginning.](image)

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The notes D and D-flat in measure 13 of the 1st movement of the Lalo Cello Concerto (See Music Example 5), provides another example where fast-wide to slow-wide vibrato can be applied. Here, the mood switches from loud to soft in the fermata. Therefore, the vibrato needs to switch from fast-wide (8, 8) (very intense and very fast) vibrato to slow-wide (6, 7.5) (not as fast) vibrato. The vibrato gives the D a space to act like a turning point, which not only indicates a volume change but also gives the feeling of an extended note value.

Music Example 5: Lalo Cello Concerto the 1st movement, measures 11-13.  

* Fast-wide to slow-narrow

Changing from a fast-wide to slow-narrow vibrato in a single note is one of the most dramatic types in terms of setting the mood of the music. The function can be used to switch the mood from high tension to soft and calm. For example, in measure 58 of the

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1st movement of the Lalo Cello Concerto (See Music Example 6), a fast-wide (7, 6) to slow-narrow (5, 4) vibrato is used on the note G. A fast-wide vibrato is needed to emphasize the beginning of the note and is succeeded with a relative slower-narrow vibrato immediately.

![Music Example 6: Lalo Cello Concerto the 1st movement, measure 58.](image)

Another example of this type of vibrato is Bloch Schelomo (See Music Example 7). The beginning note A starts with an accent and a crescendo and then a diminuendo which links to the next phrase. The vibrato goes from senza (0, 0) to fast-wide (8, 6) in the crescendo to complement the increase in volume. This immediately changes when the volume in the following phrase subsides. The vibrato should change to a slow-narrow (6, 5) speed to end the note with a soft dynamic. The amount of bow hair used should also

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7 Ibid., 2.
vary with the changes in dynamics. As the crescendo is played, less to more bow hair is used and when the diminuendo is in effect, less bow hair is used. Using more bow hair provides more contact between bow and string, which produces a bigger vibration from the string, and vice versa. In this work, the composer requires a huge change in dynamic. This vibrato switching can give the note more room to develop. (The example of fast-wide to slow-narrow only refers to the decrescendo part of the note.)

Music Example 7: Bloch Schelomo, beginning. 8

* Fast-wide to fast-narrow

Fast-wide to fast-narrow vibrato is frequently used in sustaining notes. The example used here is the dotted half note G in measure 65 of the 1st movement of the Lalo Cello Concerto (See Music Example 8). For this example, a fast-wide (7, 7) to fast-narrow (6.5, 5) vibrato can be used. The music has a little caesura after playing the note G.

Wide to narrow vibrato lets the music tension release in the end, but the fast speed of the vibrato keeps the music flowing without any stop and goes to the next phrase.

Music Example 8: Lalo Cello Concerto the 1st movement, measure 65. ⁹

Another example of the use of this type of vibrato is the 2nd movement of Saint-Saëns Cello Concerto No.1. In measures 34-37 (See Music Example 9), the four dotted-half notes require a soft and delicate sound. Using a fast-wide (7, 7) vibrato in the beginning of each note to emphasize the pitch and then switching to fast-narrow (7, 6) vibrato will produce an effective phrase with an appropriate style. Also, the change of vibrato allows the notes to have variety and elegance in announcing the entrance of the solo.

⁹ Lalo, Konzert, 2.
* Fast-wide to senza

It is easy to identify fast-wide to senza vibrato which is usually used at the end of a phrase. One such example can be found in measure 21 of the 1st movement of the Lalo cello Concerto (See Music example 10). The phrase happens at the end of introduction where the cello sustains a long note in the last two measures. The vibrato used at the beginning of the note is fast-wide (7, 7) vibrato which becomes slower and narrower until senza vibrato is used at the end of note which also gives rise to an effective decrescendo from broad to calm.

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*Senza to fast-wide*

This example contrasts with *fast-wide to senza* mentioned above. In this example, the vibrato used goes from *senza* to fast-wide. This kind of vibrato is used at the beginning of the note. The note A in the beginning of the Bloch *Schelomo* (See Music Example 11) includes an *accent* and a *crescendo*. This is followed by a *diminuendo* which connects to the next phrase. *Senza* to fast-wide (8, 6) vibrato is an approach to perform the *crescendo* in switching the volume. Starting with *senza* vibrato plus *accent* to start the note in the beginning gives the rest length of note more room to grow up the volume and intensity. (The vibrato in this example is only derived from the *crescendo* part of the note.)

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Music Example 11: Bloch *Schelomo*, beginning.  

Another example that can be studied is the second note of measure 44 in the 3rd movement of the Elgar Cello Concerto (See Music Example 12). The second B-flat in that measure is the beginning of a new phrase where the pitch is the same as the previous one. The first note of the measure ends very softly. Therefore, a vibrato that grows from *senza* to fast-wide (7, 7) immediately in the second note of the third beat can be used. This will connect the tension of the former phrase to the next phrase. Also, using *senza* vibrato in the beginning of the phrase can give the music room to breathe.

Music Example 12: Elgar Cello Concerto the 3rd movement, measure 44.  

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To perform a fast and narrow vibrato, quick, steady and tight movement is required. The four fingers of the left hand have to be close to each other and the thumb has to gently touch the neck when vibrating. The finger playing the pitch has to touch the string with a speedy rotation from side to side. The fast and narrow vibrato requires rotation of the whole hand with an even and steady motion. Students should maintain the hand shape without tensing the fingers.

* Fast-narrow

Fast-narrow vibrato is often used in quick rhythms or moving lines. The function is to emphasize the changing harmony or to stress the first note of each group to emphasize the downbeat.

The 2nd movement of the Shostakovich Cello Sonata is a good example. An accent is placed on the first beat of measures 66–67 (See Music Example 13). Therefore, it is good for performer to add a big fast vibrato (8, 5) and press the bow to raise the volume and hold back the tempo.
In measures 16, 18, 20 and 21 of the 2nd movement of the Franck Cello Sonata (See Music Example 14), a rapid and intense vibrato (8, 6) is an idiosyncrasy. In performance, students can apply some bow weight together with the left hand’s vibrato. This immediately creates a desirable sound effect.

In measures 1, 4, 8, 10 and 12 of the 1st movement of the Saint-Saëns Cello

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Concerto (See Music Example 15), a fast-narrow vibrato (8, 6) can be applied to the first note of each descending sequence. The first note of each sequence not only announces the start of a new phrase, but also adds a new dynamic level to each phrase. Pulling the bow with a little bow weight and releasing the weight immediately for each of these first notes gives an articulate accent. The immediate release of the bow results in continuous movement of the bow with speed which can enable the rest of the phrase to flow smoothly.

Music Example 15: Saint-Saëns Cello Concerto the 1st movement, measures 1, 4, 8, 10, and 12.  

Another example is from measures 86-118 of the 1st movement of the Shostakovich Cello Concerto No.1 (See Music Example 16). High bow speed and fast-narrow (8, 6) vibrato are required in this big and brilliant melody. The space between each note in higher registers is much smaller than in lower registers. Students have to maintain the center of the pitch by using narrow vibrato in high registers. In choosing vibrato, students should deliberate on the register and thickness of the string.
Music Example 16: Shostakovich Cello Concerto No.1 the 1st movement, measures 86–118. 

In this example, as in any piece of music, selecting a suitable vibrato brings out the different characters of the music. It is not necessary to vibrate all the notes from beginning to end. Making a conscious decision to use senza vibrato can also be a choice when interpreting music. When students are learning to choose suitable vibrato, teachers should give students advice and suggestions carefully. Teachers should not allow students

to vibrate excessively, and neither should students avoid using vibrato. As the Chinese literature saying goes: “Too much is as bad as not enough; we are afraid of the lack of balance between the extremes.” Therefore, teachers and students should understand what amount of vibrato is appropriate for the piece and find a balance that best expresses the intent of the music.

* Fast-narrow to slow-wide

A fast-narrow to slow-wide vibrato is used in a phrase where the volume goes from loud to soft such as *diminuendo*. In measure 15 of the Bloch *Schelomo* (See Music Example 17), there are two melodies in different octaves where this type of vibrato can be applied. The vibrato should change from fast-narrow in the E-flat to slow-wide in the B. The volume switches from high register and strong volume to lower string and soft volume to present the *decrescendo*, and vibrato takes one of the roles to control the volume. In addition, students can add some varieties of vibrato in each E-flat. The speed of the vibrato can be slow-fast-slow and the width of the vibrato can be narrower when played the first time and wider the second time. These little details add life to the music.
* Fast-narrow to slow-narrow

The most common application for fast-narrow to slow-narrow vibrato is in long notes and ending notes. This technique is used to emphasize the beginning of the note and then decrease the volume to sustain the rest of the note length. In the last two notes of the 2nd movement of the Debussy Cello Sonata (See Music Example 18), a fast-narrow (6, 5) vibrato can be used for the higher A and then gently switch to a slow-narrow (4, 5) vibrato to connect to the lower A. The lower A continues with slow-narrow vibrato into the third movement. It is important that the vibrato should not come to a complete stop at the end of second movement because the function of the vibrato is to connect the music to the last movement.

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Music Example 18: Debussy Cello Sonata the 2\textsuperscript{nd} movement, the last two notes.  \textsuperscript{19}

\textbf{* Fast-narrow to fast-wide}

Vibrato can be one of the tools used to change the volume and mood of a piece.

Fast-narrow to fast-wide vibrato is commonly used in longer notes or singing phrases.

For example, in measures 15-33 of the 1\textsuperscript{st} movement of the Elgar Cello Concerto (See Music Example 19), the dynamic level grows with each measure phrase. In order to reach the first climax, the vibrato and bow speed should increase more and more to create intensity.

Music Example 19: Elgar Cello Concerto the 1st movement, measures 15-33.  

Measures 111-114 of the 2nd movement of the Shostakovich Cello Concerto No.1 (See Music Example 20) provide an example of how this type of vibrato can be applied, taking into account the string and position where the notes are played. The six F notes occur in different registers, from high position thin string to lower position thick string.

To ensure that vibrato is effective in bringing out the differences in the F-sharp notes, the

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20 Elgar, Concerto, 1.
left hand vibrato has to increase width and speed to achieve the crescendo in volume. The bow pressure also needs to gradually increase to the last (and loudest) F note.

Music Example 20: Shostakovich Cello Concerto No.1 the 2nd movement, measures 111-114.  

In measures 4 and 5 of the 1st movement of the Elgar Cello Concerto (See Music Example 21), the half note B with fermata starts from piano dynamic and increases through a crescendo to a fortissimo. The vibrato width has to increase as the dynamic gets louder to bring out the volume. The bow can move close to the bridge to get a bigger sound.

Music Example 21: Elgar Cello Concerto the 1st movement, measures 4-5.  

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21 Shostakovich, Concerto, 8.
22 Elgar, Concerto, 1.
* Fast-narrow to *senza*

When the note ends with *senza* vibrato, it usually means that it is the end of a phrase. The last note of the 1st movement of the Saint-Saëns Cello Concerto (See Music Example 22) is an example of how a fast-narrow (6, 5) to *senza* vibrato can be applied in music. The combination of fading away and *ritardando* allows the sound to continue even after the bow has left the string.

Music Example 22: Saint-Saëns Cello Concerto the 1st movement, the last note. 23

* Senza to fast-narrow

When *senza* to fast-narrow vibrato is used, it usually means that the note or phrase is about to start. The beginning of the 3rd movement of the Shostakovich Cello Sonata (See Music Example 23) provides an example where such a vibrato can be applied.

23 Saint-Saëns, 1er concerto pour violoncelle et orchestre, Op. 33, 4.
The movement starts with a pianissimo dynamic. The note starts from senza vibrato to avoid having a volume that is too loud in the beginning. In addition, it is better for students to pay attention to their bow to secure the sound smoothly. The bow can also move closer to the fingerboard with less bow hair used to produce a soft sound.

Music Example 23: Shostakovich Cello Sonata the 3rd movement, beginning.  

Another example is from measure 102 of the 2nd movement of the Shostakovich Cello Concerto No.1 (See Music Example 24). This measure contains a diminuendo and poco ritardando. When compared to a low note, a listener’s ear can easily catch on to a high pitch. Therefore, the note C can be heard more easily when compared to the note E in this measure. To ensure that the correct musical effect is conveyed to the listener, students can play the note C senza vibrato in the beginning which can avoid the unbalanced volume and makes the volume much easier to control.

24 Shostakovich, Sonata, 11.
Slow and wide vibrato is rarely found in solo music. The vibrato is occasionally used in accompaniment parts. This vibrato can be found in the section of lower registers and lower strings. As mentioned in the introduction, it is hard to define what speed a slow vibrato belongs under. Most of the time, these terms are used comparatively to describe the relationship between the vibrato used in two phrases; in other words, a teacher might say, “play this phrase slower and wider than the last one.” Students should be careful when using this vibrato, and avoid an “unconscious lazy” vibrato. The slow-wide vibrato requires rotation of the whole hand with an even and steady motion. Students should keep the hand shape and finger without tension.

* Slow-wide

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In measure 23 of the 1st movement of the Brahms Cello Sonata Op.99 (See Music Example 25), a slower and narrower vibrato is used compared to the previous measure. The two notes are played on the same string with the first one in a higher register and the second one in a lower register. The space between notes in the higher register is much narrower compared to the space between notes in the lower register. Therefore, students need to careful that their vibrato does not get too wide in the high register. Moreover, the note B in measure 22 can be played using slow to fast vibrato. In the next measure, the note can be played using slow to even slower vibrato to make the music flow more interestingly.


Another example is from the 2nd movement of the Brahms Cello Sonata Op.99. In measure 31 (See Music Example 26), the note changes from A-flat to D-flat which has

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shifted from higher pitch to lower pitch in thick string. Because the volume level is the same, the lower pitch notes require a much wider but slower vibrato to maintain the same volume.


* Slow-wide to fast-wide

The slow-wide to fast-wide vibrato is used when the volume increases. In measure 266 of the Bloch Schelomo (See Music Example 27), the long note A is played with a crescendo to a sixteenth note B. The vibrato speeds up from slow (6, 5) to fast (8, 6) to produce the effect of an increase in volume. It can also be combined with different amounts of bow hair and bow lanes (move from close to fingerboard side to bridge side) to enhance the music.

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27 Ibid., 4.
* Slow-wide to fast-narrow

It is interesting that slight differences in vibrato can create different varieties of musical color. Measures 34-35 of the 1st movement of the Brahms Cello Sonata Op.38 (See Music Example 28) provide such an example. The dynamics in these bars contain a crescendo and a diminuendo which are played with the pitch and music flow. In measure 34, the second note, E, pushes the dynamic forward to the next bar. The vibrato can start from slow-wide (5, 7) and move to fast-narrow (8, 6) though the pitch. The variation in vibrato is not huge, but it allows the music to flow even smoother and gives the music life. Also, using vibrato this way can avoid a false accent on A-flat.

28 Bloch, Schelomo, 6.
* Slow-wide to slow-narrow

A slow-wide to slow-narrow vibrato can be used when the music begins with a soft passage or at the end of a phrase. One example of when such a vibrato can be used is in measures 72 and 73 of the 2nd movement of the Grieg Cello Sonata (See Music Example 29). The long note A starts with *pianissimo* followed by a *diminuendo*. The vibrato can start from slow-wide (4, 4) and gradually get narrower and narrower to almost nothing at the end of the note.

Music Example 29: Grieg Cello Sonata the 2nd movement, measures 72–73.  

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* Slow-wide to senza

A vibrato that goes from slow-wide to senza vibrato is used on the ending note to end the phrase, especially when the dynamic is soft. A slow-wide vibrato is applied to lower strings and lower positions. The vibrato can be applied to the last note of the 2nd movement of the Shostakovich Cello Concerto No.1 (See Music Example 30). A clear slow-wide vibrato is needed in the long sustaining note C to hold the note until the orchestra has finished playing. The vibrato can be slower and narrower, eventually ending with senza vibrato to finish the phrase.

Music Example 30: Shostakovich Cello Concerto No.1 the 2nd movement ending.  

* Senza to slow-wide

Using the same example, this type of vibrato can be used on the first note of the

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3rd movement of the Shostakovich Cello Concerto (See Music Example 31). Since the first note is the same pitch as the last note of the 2nd movement, a senza to slow-wide vibrato can retain the mood from the previous movement. By exerting some bow pressure, the note can be heard immediately.

Music Example 31: Shostakovich Cello Concerto No.1 the 3rd movement beginning.  

**Slow & Narrow Vibrato**

Slow and narrow vibrato seems rare in solo music, except in higher registers and in quiet music. This type of vibrato usually can be found before or after another kind of vibrato. For example, this type of vibrato can be used before a fast-wide vibrato which can bring out a dramatic intensity. The slow and narrow vibrato requires rotation of the

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32 Ibid., 10.
hand with an even and steady motion. Students should keep the hand shape without getting tense, especially in the fingers.

* Slow-narrow

In measures 12-17 of the 2nd movement of the Lalo Cello Concerto (See Music Example 32), the melody is played with a dolce expression. A slow-narrow (6, 5) vibrato can be applied to ensure smooth musical flow. A few measures later, the melody is repeated again. A slow-narrow vibrato can be used the first time with a soft dynamic and a wider and faster vibrato can be used the second time to develop the intensity.

Music Example 32: Lalo Cello Concerto the 2nd movement, measures 12-17. 33

* Slow-narrow to fast-wide

The vibrato starts from slow to fast and moves from to narrow to wide. This type of vibrato can be found in many places but the most common place is when the music is

33 Lalo, Konzert, 6.
heading towards the climax. For example, in measure 26 of the 1st movement of the Elgar Cello Concerto (See Music Example 33), Elgar uses the leading note (D-sharp) to the tonic (E) to create a broad feeling that leads to a higher dynamic level. The slow-narrow to fast-wide vibrato will enable the music to achieve the intensity appropriate at the different levels.

Music Example 33: Elgar Cello Concerto the 1st movement, measure 26.  

Another example where this type of vibrato can be applied is in measure 95 of the 1st movement of the Shostakovich Cello Sonata (See Music Example 34). The spot contains three repeated B-flat notes with a ritardando. A wider and faster vibrato is required for each consecutive B to reach the next phrase which begins a forte dynamic and an accent.

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34 Elgar, *Concerto*, 1.
Music Example 34: Shostakovich Cello Sonata the 1st movement, measure 95.  

*Slow-narrow to fast-narrow*

The beginning of the 1st movement of the Rachmaninoff Cello Sonata (See Music Example 35) is an example of how slow-narrow to fast-narrow vibrato can be used. In the first two phrases, the notes rise up by a half step with a *piano* dynamic. The slow-narrow to fast-narrow vibrato can be applied here. The first note is played in soft and continuous vibration to the next note. In the second note, a vibrato pressing slightly hard in the beginning of the note could emphasis the downbeat of the new measure. The fast-narrow vibrato can gradually become slow-narrow vibrato to end the phrase.

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In addition to the example mentioned above, this vibrato can also be used in crescendo. In some instances, a crescendo may be immediately followed by the diminuendo. One example is the beginning of the 1st movement of the Grieg Cello Sonata (See Music Example 36). The note E is played with a crescendo which leads to the note F. This requires a quick slow-narrow to fast-narrow vibrato for the entire note value. Bow pressure beginning with normal and moving to hard is required to perform the dynamic indicated.

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* **Slow-narrow to slow-wide**

In measure 9 of the Fauré Elegy (See Music Example 37), the dynamic is *pianissimo* but the dynamic in the next measure is *piano*. The vibrato in note C starts with slow-narrow (5, 6) and progresses on to slow-wide (5.5, 7) in a very short time, and switches back to slow-narrow (4, 4) vibrato again to finish the phrase. Although the switch is very small, it makes the note more interesting.


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* **Slow-narrow to *senza***

This idea is similar to the one we discussed before. This type of vibrato is often used on the ending note, especially in soft dynamics. In measures 5 and 9 (See Music Example 38) from the Cadenza movement of the Shostakovich Cello Concerto No.1, the *diminuendo* in each melody is played with a group of descending notes. A slow-narrow to

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*senza* vibrato can be used to end the phrase. In addition, the volume in the *crescendo* of the second group of descending notes can be bigger than the first group. The duration of the descending group of notes in the second time is shorter than the first time. Therefore, students need to control the vibrato carefully.

Music Example 38: Shostakovich Cello Concerto No.1 the 3rd movement, measures 5 and 9.  

The last note of the 2nd movement of the Brahms Cello Sonata op. 99 (See Music Example 39) is another example that can be analyzed. It can be played with a *senza* to slow-narrow vibrato and back to *senza* vibrato to create a full one-note phrase.

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*Senza to slow-narrow*

Again, this is a similar idea to the one we discussed above. This type of vibrato is used at the beginning of a phrase, and requires a soft dynamic. In measure 6 (See Music Example 40) of the Fauré *Elegy*, *senza* vibrato is used in the very beginning of the first note and eases into vibrato so that the measure starts off smoothly.

A *senza* to slow-narrow (5, 4) vibrato can be applied to the first note of the 3rd

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movement of the Elgar Cello Concerto (See Music Example 41). Since the phrase ends on this note (the first note in measure 44), it is important that a continuously slow-narrow vibrato is not used to connect to the next note B. In order to finish the phrase, a short *senza* vibrato can be used in the beginning of the note to release the tension and hold back the tempo and volume.

![Music Example 41: Elgar Cello Concerto the 3rd movement, measure 44.](image)

Summary

The following table (See Table 3) provides general guidelines to assist teachers and students in choosing their vibrato. These characteristics are the common types that we can observe from the music.

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42 Elgar, *Concerto*, 8.
<table>
<thead>
<tr>
<th>Type</th>
<th>Uses</th>
</tr>
</thead>
</table>
| Fast-wide    | 1. Can be used in parts that require strong intensity.  
2. Used in the lower position (except soft dynamic).  
3. Can be used in the sustaining note which allows the music to flow to the next note.  
4. Often used in loud dynamics. |
| Fast-narrow  | 1. Can be used in parts that require great intensity.  
2. Can be used in all dynamics.  
3. Often used in higher positions.  
4. Can highlight the important note in a group of notes. |
| Slow-wide    | 1. Used in soft dynamics.  
2. Often used in slow music.  
3. Used in playing in the lower strings.  
4. Used in the lower position.  
5. Can be played in accompaniment note. |
| Slow-narrow  | 1. Can be used in soft dynamics.  
2. Often used in slow and quiet music.  
3. Used in notes that are played in higher strings.  
4. Often used to begin or finish the phrase.  
5. Can be played in accompaniment note. |
| Any type to fast-wide | 1. Used in building musical layers.  
2. Usually carries a crescendo or loud dynamic. |
| Any type to fast-narrow | 1. Usually used in the higher registers or in shifts to high registers.  
2. Usually played with a crescendo. |

Table 3: Simple Vibrato Guidance
Table 3 continued

| Any type to slow-wide | 1. Used when the dynamic level goes to soft.  
2. Often used in the lower register or in shifts to lower position. |
|-----------------------|------------------------------------------------------------------------------------------------|
| Any type to slow-narrow | 1. Used when the dynamic usually goes to soft.  
2. Can be used when closing the phrase.  
3. Used when the music carries a *decrescendo*. |
| Any type to *Senza* | 1. Usually used in finishing note.  
2. Often used when the next note needs preparation for shifting or string crossing.  
3. Used in a soft ending  
4. Can be played in accompaniment note. |
| *Senza* to Any type | 1. Used at the start of a note  
2. Often used when the note length is long, and continues with a *crescendo*. |

**Conclusion**

Students have to consider phrasing, dynamic marking, bow usage and tempo among other details as they make choices about using vibrato. There are many factors that will result in different interpretations, but the most important factor is the performer.

A slight difference in interpretation between two people will result in different vibrato choices, which will in turn affect the musical outcome. The vibrato discussion in this
chapter originates from my learning process as a student. When I was learning vibrato, I struggled to select an appropriate vibrato. From this experience, I became interested in how teachers explain or instruct their students on the application of vibrato. The vibrato motion is not only taught in the beginning level; the teacher also has to approach the topic on how to choose various vibrato at the advanced level of learning the cello. Teachers need to use clear and accurate explanations when teaching their students instead of just asking students to use their imaginations. The main goal of this chapter is to help both teachers and students share a common vocabulary of vibrato terms to have a common understanding. The different types of vibrato discussed in this chapter describes vibrato more precisely and gives teachers a forthright vocabulary to use and share with students. Because these terms are based on students’ knowledge of music and connect deeply with the expressive qualities of the music being played, students can understand and apply appropriate types of vibrato more naturally and intuitively. This method provides stronger guidance and clarifies the types of vibrato.
Chapter 3: Vibrato Exercises

To teach vibrato, teachers should understand the technical details and should be able to analyze the problems students are having with vibrato. There are many study guides and technical studies available today. However, most of them focus on beginning students. It is hard to find a book that discusses how to develop a variety of vibrato techniques for advanced students. This chapter will focus on the techniques or ideas that the cellist uses to develop vibrato as part of his or her artistry as it applies to advanced students and their teachers. It is my hope that this can be a reference for their teaching and studying.

The teacher is often the best model for a beginning student. The teacher takes the beginner student through a piece in a step-by-step process that includes providing the student with fingerings and bowings, which are fundamental building blocks in developing good playing technique. It is crucial that a teacher provides such rudimentary information to the student because part of the responsibility of the teacher is to ensure that the student fully understands the piece and can carry out effective practice at home. In the process of learning, students gradually develop their technique and improve their
playing skills. When they reach a certain level, they will have the ability to work on a piece on their own without seeking guidance from their teacher, and they will be able to sight-read and figure out all the basic framework like notes, rhythm, fingering and bowing on their own. When the student has reached this level of ability, the teacher needs to work with the student on musical interpretation. At this next level, students will start to be more critical of their playing. As students make the transition to becoming independent learners, one of the many challenges they will face is to make the music more interesting within the parameters of the written music. Another challenge students face is incorporating their interpretation and playing style into the style of the music from the various time periods they are exploring. The way they utilize their vibrato is one way that will help them to develop their style. Most students are not aware of their vibrato; some use wide vibrato in all kinds of music while others use variations of vibrato width without being aware of how those vibratos may apply to the music. Vibrato is a device that can create many interpretations of a piece of music. As we mentioned before, using vibrato in singing beautifies phrasing and expresses feeling, but it needs to be supported with a solid technique and clear interpretation of the music. The same can be said when playing the cello. Mastering vibrato can vary the sound effect of a slow, fast, wide,
narrow, accelerating or decelerating vibrato according to the musician’s preference.

Therefore, students and teachers should understand the concept and techniques of vibrato. They need to know how to use it, and more importantly how to explain the choice of vibrato that would be most effective for the music being played.

**Developing Professional Vibrato**

Developing vibrato technique requires a refined control of body motion. Proper body posture protects the performer from injury that may result from unnecessary pressure on the body resulting from poor posture. Once students have assumed a correct, comfortable posture, the teacher can begin to work on vibrato technique.

The following illustrates some principal vibrato issues and provides exercises for those who need to develop and refine their vibrato skill. The journal article “Perceived Pitch of Violin and Cello Vibrato Tones among Music Majors” mentions three views of vibrato. The first one is the vibrato oscillates from the in-tune pitch and above, the second is the vibrato oscillates equally above and below the conceived pitch, and the third is the vibrato oscillates primarily from the in-tune pitch and below.\(^{43}\) There are a variety of

opinions regarding vibrato, but in my opinion, the vibrato should oscillate equally above and below the pitch, which will help the cello players to vibrate the pitch more evenly and steadily. In the book *Cello Technique: Principles and Forms of Movement*, Gerhard Mantel affirms that by vibrating around the pitch center, “the tone that the listener hears is exactly in the middle between the extreme pitches of the vibrato,” which supports my opinion.

*Playing With and Without Vibrato*

It is important that the student is able to identify the quality of vibrato. The purpose of this practice is to allow students to listen to the differences in sound between vibrato and *senza* vibrato (without vibrato). The advanced students and their teachers may ask the following questions as reference to practice identifying the quality of vibrato:

* What do you hear that is different between vibrato and *senza* vibrato? Does it sound throbbing or flat?

* Does the difference between vibrato and *senza* vibrato make a difference to the music? Does it produce an undulation in the pitch of the note or sympathetic vibrato with string?

* What does applying vibrato (or not) do to vary the musical expression?

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Note: Using different combinations of vibrato in a single note or phrase will convey different sound effects. In the previous chapter, we talked about the categories of vibrato. Each type has its own specific character; for example, fast-wide can produce intensity and a strong impression, and slow-narrow can create a thin, soft feeling.

* Is vibrato necessary for the music?

Note: Vibrato is one of the techniques that are listed in string pedagogy. Teachers need to establish the ability in their students to sense how, when and why to play vibrato. Students must be consciously aware of playing vibrato without being reminded. This question is a good starting point for those students who did not possess the conscious understanding of playing vibrato. Teachers can use this question to rebuild students’ sensitivity for playing vibrato and train students to be aware the different types of vibrato.

These questions will help students to realize the importance of vibrato and encourage them to want to add vibrato into their music. The following specific exercises take students through a systematic series of steps to train their intuitive understanding of vibrato by providing practice and instruction in various vibrato techniques.
Exercise 1

1. Play repeated whole notes with the whole bow in quarter note equal 60, four beats per bow without vibrato.

2. Find the best quality of tone the student can achieve without vibrato. When the best tone quality is found, have the student repeat the note at least four times and ask him or her to remember the sound and the feeling of playing the note.

3. Play with vibrato. Compare both sounds and feel and identify the differences.

Check Point:

* Teachers can play for students without telling them whether they are playing with vibrato or *senza* vibrato. Ask students to identify the difference by themselves.

Notes:

* Use the whole note exercise from thick string and lower register to thin string and higher register.

* Apply fast-wide, fast-narrow, slow-wide and slow-narrow vibrato to this exercise.

* This exercise can be used in any scales, etudes and pieces. This is a good exercise for slow practicing.
**Exercise 2**

1. Pick a phrase and play it one time *senza* vibrato.

2. Practice the phrase and apply all kinds of vibrato, including different widths and speeds on the same notes and same patterns.

3. Explore the possibilities and decide what kinds of vibrato the student would like to use and have the student explain why to the teacher.

Notes:

This exercise can be used more than one time in different periods in the progression of learning a piece. Students may change their idea after reaching a different level of maturity in their knowledge of the music.

The purpose of this exercise is to allow students to think about the choice of vibrato, and to think and listen more deeply to the music. In the beginning of the learning process, students usually receive information from their teachers without questioning, because everything is new to them; hence, they receive information passively. The drawback of such learning is the students can only catch a superficial amount of information from the score and only minimally internalize that information into their playing. Because of this, they might neglect thinking about the reasons for playing in the
way they were taught. Teachers can choose to use certain exercises at different times, depending on the students’ mastery of the music. The different levels of learning will give different results. For example, after students have been learning a piece for some time, the teachers may choose to assign the ‘senza vibrato’ exercise (Exercise 2) in order to help them rethink the use of vibrato. They may or may not change their decisions about their vibrato. Regardless of the decision, the exercise provides them a chance to rearrange their thoughts and to increase their confidence.

Advanced students should have the ability to establish their own musical thinking, and these questions and exercises can help them become better independent learners.

* Producing an Even Vibrato

Professional performers are required to play even and continuous vibrato. Students usually learn a moderate speed vibrato at first. After they get used to the motion and develop muscle memory, they can start to vary the vibrato. Practicing vibrato with different speeds and widths is very important. Knowing when to speed up and slow down vibrato is challenging, but equally important. The basic technique is not hard, but it is important to build a solid foundation of the vibrato technique. Therefore, to recap,
students should learn to play vibrato evenly, and then they can start to control their
vibrato with different combinations, varying the width and speed.

**Exercise 3**

1st Stage

1. Hold a plastic bottle containing water in the left hand. The bottle can be filled with
   varying amounts of water each time the exercise is carried out.

2. Shake the bottle and listen to the sound.

3. Check the sound feedback from the bottle. Use the same shaking motion to get an even
   sound over various measurements of time, such as two shakes per second for ten
   seconds.

2nd Stage

* Try this exercise (bottle shaking motion) while involved in another activity, such as
   watching TV, or carrying on a conversation.

Notes: The shaking motion can train the automatic vibrato motion.

**Exercise 4**

1. Pick a Scale (See Music Exercise Example 1: Use D major scale as an example). Set
   the metronome to quarter note equals 60, and begin with vibrating twice in a beat, and
then using the same tempo vibrate three times in a beat, then four times in a beat (See Music Exercise Example 2), and so on.

Music Exercise Example 1: Scale Exercise.

Music Exercise Example 2: Rhythm Patterns.

2. The tempo can be varied in each set.

Check point:
* Make sure the left hand is always loose.

* Remain even and smooth in left hand motion.

Notes:

* This exercise can be practiced with different widths and speeds. Each time, students should use only one kind of vibrato width and speed. After they can do the vibrato evenly and naturally, they can start to put different combinations into the exercise.

(Ex: Quarter note equals 70, three times in a beat, over 10 beats with wide vibrato, four times in a beat, over 8 beats with narrow vibrato and six times in a beat, over 6 beats with wide vibrato.)

* Use this exercise to practice transitioning from thick string and low register to thin string and high register.

* This exercise can be applied in scales.

* Students may increase the daily practice duration step by step. Don’t overdo the exercise.

**Exercise 5**

It is usually difficult for students to make the shaking motion even and slow. Here is another exercise that may help them to solve the uneven motion problem.
1. Play dotted rhythms (See Music Exercise Example 3) in a beat in a period of time. The first time starts from the in-tune pitch and makes the long note on the lower pitch side (finger is close to cello nut side) and the short note on the high pitch side.

2. The first time, begin with quarter note equals 60. Repeat the pattern in a period of time until t is even.

3. Raise the tempo gradually each time.

4. After students feel comfortable in this rhythm pattern and in different tempos, ask students to change the rhythm pattern to the longer note on the higher pitch side. Run the same step 1-3 again.

5. Use this exercise to practice transitioning from thick string and low register to thin string and high register.

6. This exercise can be applied in scales, etudes and pieces.
Music Exercise Example 3: Dotted-Rhythm Scale.

* Vibrato Gradations

A mastered vibrato is distinguished by its speed and width from slow-narrow to fast-wide. There are many levels of vibrato. In Chapter 2, we graphed the vibrato on a rectangular coordinate system, with the levels of vibrato from (0, 0) to (10, 10). This means we have levels 0-10 for vibrato speed and 0-10 for vibrato width which can be applied to the vibrato gradation to create many combinations. However, it is hard to exactly quantify the vibrato width and speed in real playing. Don’t overdo the gradations.

We will divide the practice into speed practice and width practice.
Exercise 6

Speed practice

1. Pick a scale. (Music Exercise Example 1: Use D major scale as example)

   2. Set the metronome to quarter note equals 60, and with this tempo, vibrating twice in a
      beat in a period of time, three times in a beat in a period of time and four times in a
      beat in a period of time.

   3. Speed up the tempo in each round, from 60 to 64, 64 to 68 and so on.

Check Point:

* Make sure the left hand is always loose.

* Make sure the vibrating motion remains even and smooth.

Note:

* The exercise can be used flexibly on all the strings and registers.

* This exercise is designed for students to train their hand to have more flexibility.

* This exercise can be applied in scales.

Width practice

1. Pick a scale. (See Music Exercise Example 1: Use D major scale as example)

2. Set the metronome to quarter note equals 60. Play narrow vibrato, vibrating twice a
beat in a period of time.

3. Use the narrow vibrato and let the same vibrating motion gradually become wider and wider but remain even and smooth.

4. Set the same tempo, quarter note equals 60, vibrating three times a beat, four times a beat with increasing vibrato width in each beat, and so on.

5. Tempo changes can apply in this exercise as well.

Note:

* It might not make sense in some parts (for example slow-wide vibrato on the A string high register. This can rarely be seen in the music.)

* This exercise is designed for students to train their hand to have more flexibility.

* This exercise can be applied in scales.

* **Continuous Vibrato and Connected Vibrato**

  For most students, there are vibrato gaps between notes. The common situation is: students have stopped vibrating unconsciously to prepare the motion to switch to the next note or shift to a different position. This makes the music sound dead at the end of the note and flat at the beginning of the note. In fact, it is a huge problem for advanced students that the unconscious stopping action causes an interruption in the music flow.
The exercises in this section are designed for students to get used to playing note by note with continuous vibrato. Students need to have the sense of continuous vibrato to achieve a professional level of vibrato. This is why this problem needs to be addressed.

**Exercise 7**

1. Apply the following music frames (See Music Exercise Examples 4-6) to play scales (D major scale as example).

Music Exercise Example 4: Continuous and Connected Vibrato Scale Practice-1.
Music Exercise Example 5: Continuous and Connected Vibrato Practice-2.
Music Exercise Example 6: Continuous and Connected Vibrato Practice-3.
2. Apply different bowings to the exercise. (See Music Exercise Examples 7-8.) For example, start with down bow the first time and up bow the second time.

Music Example 7: Bowing: Down Bow (From Music Example 5).

Music Example 8: Bowing: Up Bow (From Music Example 6).

3. Practice using fast-wide, fast-narrow, slow-wide, and slow-narrow vibratos with each of the above exercises.

4. Use the different combinations of the vibrato to practice. For example (See Music Exercise Example 5) practice D E, E F#, in fast-wide vibrato; F#G GA AB, in fast-narrow vibrato; and BC# C#D in slow-narrow vibrato, and so on.

5. Use the metronome to keep the tempo. Maintain the same tempo until students feel comfortable to go on to the next tempo.
Check point:

* Listen carefully to the connection between each note and the change of bow; students should not stop in any circumstance, especially in shifting.

Exercise 8

1. Practice the following music examples. (See Music Exercise Examples 9-16)

Music Exercise Example 9: Shifting on One String. (Using D string as example).
Music Exercise Example 10: Finger-Crossing on Two Strings.
(Using A and D strings as example).
Music Exercise Example 11: Crossing Strings with Fingers 1&2.

(Using A and D strings as example).

Note: Finger pattern can be applied in 1-2, 2-3, and 3-4 fingerings.
Music Exercise Example 12: Crossing Strings with Fingers 1&3.
(Using A and D strings as example).
Note: finger pattern can be applied in 1-3 and 2-4 fingerings.
Music Exercise Example 13: Crossing Strings with Fingers 1&4.
(Using A and D strings as example).

Music Exercise Example 14: Shifting with Fingers 1&2.
(Using A and D strings as example).
Note: finger pattern can be applied in 1-2, 2-3, and 3-4 fingerings.
Music Exercise Example 15: Shifting with Fingers 1&3.
(Using A and D strings as example).
Note: finger pattern can be applied in 1-3 and 2-4 fingerings.

Music Exercise Example 16: Shifting with Fingers 1&4.
(Using A and D strings as example).

2. Students can apply different bowings in practice. For example: start with down bow the first time and up bow the second time.
*Vibrato with Different Bow Placements and Their Dynamic Relationship*

It is difficult for students to master bow control, since the cello bow is long and the distance between bridge and fingerboard is wide. It is especially challenging in the upper part of the bow. However, as this study concentrates on the left hand vibrato, the exercises provided for the right hand will focus on helping the vibrato only.

Bow weight means how much pressure has to be put on the bow. It also can be different depending on the bow placement. In *Sound Innovations for String Orchestra - A revolutionary Method for Beginning Musician (2010) Teacher’s Manual*, Bob Phillips, Peter Boonshaft, and Robert Sheldon divide the bow placement into three lanes which they call piano lane (near the fingerboard), mezzo forte lane (center) and forte lane (near the bridge). The piano lane will use less arm weight and faster bow speed. The mezzo forte lane will use a medium amount of arm weight and a medium-fast bow speed, and the forte lane will use more arm weight and a slower bow speed.  

**Exercise 9**

1. Practice a three-octave scale. Each set of notes uses a whole bow and stays at the same

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bow placement throughout the whole set.

2. Practice a three-octave scale with different bow placements (piano lane, mezzo forte lane, and forte lane). Bow placement depends on the positions and strings, but should match the volume as equally as possible.

3. Use different parts of the bow to practice, such as the middle part of the bow, upper part of the bow, etc. Each time, pick one type of bowing to practice. (Ex: Forte lane plus middle part of the bow)

Check points:

* Keep both hands working individually.

After students can control the bow well through the whole scale, it is time to work on both hands: vibrato and bow control with dynamic changes.

**Exercise 10**

1. Play the following music example (See Music Exercise Example 17). Follow the dynamic markings carefully.

2. Apply the three lanes in this practice. Students should adjust the bow placement according to the position in the left hand and the dynamic marking.

3. Play with a metronome from slow to fast tempo.
4. Use whole bow to practice.

5. Think about the relationship when working with dynamics in both hands. Explain to teachers what you thought.

Music Exercise Example 17: Dynamic Practice.

Note:

* This exercise can be used in scales.
* The vibrato width and speed will change with different dynamic marking. It will get faster and wider through the *crescendo* and get slower and narrower through the *decrescendo*.

The following table (See Table 3) shows the dynamic relationship with both hands.

<table>
<thead>
<tr>
<th>Dynamic</th>
<th>Right hand (Bow)</th>
<th>Left hand (Vibrato)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic - Soft</td>
<td>Piano lane (Close to fingerboard)</td>
<td>Slow narrow</td>
</tr>
<tr>
<td></td>
<td>Less weight</td>
<td>Slow wide</td>
</tr>
<tr>
<td></td>
<td>Slower speed</td>
<td>Fast narrow</td>
</tr>
<tr>
<td>Dynamic - Medium</td>
<td>Mezzo piano lane</td>
<td>Slow narrow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slow wide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fast narrow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fast wide</td>
</tr>
<tr>
<td>Dynamic - Strong</td>
<td>Forte lane (Close to bridge)</td>
<td>Fast narrow</td>
</tr>
<tr>
<td></td>
<td>More weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faster speed</td>
<td>Fast wide</td>
</tr>
</tbody>
</table>

Table 4: Dynamic Relationship with Both Hands.

* **Effects of vibrato on intonation**

Intonation is always a big challenge for string players. When students practice, they should not only rely on finger memory, but should also sharpen their pitch acuity.
Advanced students are required to go beyond just producing the correct pitch. They need to take into consideration the contact point of the finger on the string, the relative pitch to the preceding or the following note, or to the key of the piece. All the above factors need to be secured to push the intonation more accurately.

According to *The Harvard Dictionary of Music*,

Vibrato is produced by rocking the left hand, usually from the wrist, as a note is played. A common problem that students may make is when they play with a tight and small vibrato to secure their intonation.⁴⁶

From observing real performances and videos, I found out that students stopped vibrating unconsciously to prepare the motion to switch to the next note or shift to a different position. This is because they are unsure of the intonation of the note, especially after a big shift or string crossing. The solution would be to practice to get the pitch accurately in a short time.

**Exercise 11**

1. Use an etude book to practice intonation and vibrato.

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2. Use Popper 40 Studies High School of Cello Playing Opus 73, No.27\textsuperscript{47} as an example.

Play the sixteenth notes as quarter notes in length, and use a quarter note equals 40 as the tempo to practice both intonation and vibrato.

3. The tempo can be varied, but students have to make sure the tempo is slow enough to work both on intonation and vibrato; the vibrato should occur on every note.

Check Point:

* Maintain the vibrato evenly, smoothly and continuously.

Note:

* This practice can be applied to all the music that students are learning.

* Improve the weaker finger / Individual finger vibrato practice

It is ideal to vibrate with just one finger because this will allow the finger to have a wider rotation on both sides. However, not all students have hands that are big and strong enough to vibrate comfortably with one finger. Therefore, they need to use two fingers to vibrate. The 2\textsuperscript{nd} finger of the left hand can aid the 1\textsuperscript{st} finger by touching its nail (See Picture 1) when vibrating. This can give the finger more strength to press and vibrate the string to produce a clear and wider tone. The same applies for the other fingers.

Exercise 12

1. Practice an octave scale. Each of the notes uses a whole bow. Each bow contains two full beats with quarter note equals 60.

2. Play four beats in a bow.

3. Only use one finger to play the vibrato. If the student cannot execute the vibrato effectively with one finger, use the other finger to assist the finger.

Check Point:

* The four fingers should be close to each other.
Exercise 13

1. Repeat each note four times in a scale.

2. Each repetition of the note should be played with a different finger, for example, in D major scale (See Music Exercise Example 18).

Music Exercise Example 18: Finger Exercise on the Same Note though a Scale.
Check point:

* Try to make the vibrato width and speed sound similar from finger to finger.

* Using Fingertip and Finger Pad in Vibrato

There are two kinds of hand shapes used when playing. The first one is a C shape, in which the fingertip touches the string (See Picture 2). The finger in this shape will be almost perpendicular to the fingerboard and the same for the thumb to the cello neck. The whole hand shape will look like a letter C (See Picture 4). We call this shape a C shape.

The other hand shape is a U shape. The hand uses the finger pad (Pee picture 3) to press the string. The fingers and thumb will be flatter in touching the string. The hand shape looks like rotated letter U, so we call this shape a U shape (See Picture 5). Simply stated, the C shape is often used on the A and D strings. The U shape is more common on the G and C strings.
Picture 2: Fingertip

Picture 3: Finger pad

Picture 4: C shape

Picture 5: U shape
Exercise 14

1. Use the fingertip to play repeated whole notes with the whole bow in quarter note equal 60, four beats per bow in scale.

2. Use the finger pad to play repeated whole notes with the whole bow in quarter note equals 60, four beats per bow in scale.

Note:

* These shapes will be not appropriate in some places. The main purpose of this exercise is to practice the feeling of touching the entire width of the string.

* Use this exercise to practice moving from thick string and low register to thin string and high register.

* This exercise can be applied in scales.

* This exercise is designed for students to train their hand to have more flexibility.

* Forearm preparation

   There are some spots such as higher register and lower string that our hand cannot fully reach because of limits in the flexibility of the arm. The solution will be to raise the arm to extend the space for the hand to reach the string. In this motion, the thumb plays a key role. In the lower strings, the fingers need to press hard in creating
vibrato. At the same time, the thumb and four fingers placed on the cello neck will be shaped flat. In order to get more flexibility in the fingers, release the thumb contact from the neck to let the arm move forward and out. The thumb will be slightly touching the edge of the neck which is close to the thin string side. In the high register such as D string, the fourth position, the thumb can move forward to allow the arm move forward in vibrato.

Besides the higher register and lower string, the arm angle can be another element to assist the vibrato. Students can raise the left shoulder and arm in the first finger in the first position which can help the hand get more space to rotate.
Conclusion

Music is always developing and no one can predict what it will be like in the future. However, the vibrato will stay the same in music written in each historical period such as the romantic period and early 20th century music. The style of each period will remain, and the characteristic in each period will not be changed in the future. The same style requires the same techniques, and problems may surface from those techniques. The problems discussed in this chapter are frequently seen in performance. This chapter covers common problems that students have and provides the exercises to solve those problems. It is not necessary that students follow step-by-step to complete all the exercises. Rather, the exercises supply a kind of practicing and thinking manner. Depending on the case, the exercises can be mixed to respond to the problem.

After they improve their technique, students can incorporate the technique into their playing. Students can have more flexibility in handling the music. The skill will become one of the tools they use to interpret the music they play in the future.
Chapter 4: Applying Vibrato Interpretation to Music

Many people think that the choice of vibrato is personal and is something that cannot be explained. Although musical interpretation is personal, there are still some principles that professional performers follow. The character of a piece and the stylistic qualities of a composer can be better understood by reading relevant literature and history. By carrying out research, students can understand the life of the composer, where his ideas came from, the process of the composition and the background of the society at the time.

In *The Composer’s Advocate: A Radical Orthodoxy for Musicians*, Erich Leinsdorf (1981) asserts:

Indispensable partners of knowledge are imagination, thoughtful intelligence, and ultimately the willingness to forget ourselves in the service of what we undertake to represent—the composer and his music.

To accomplish this goal we must agree on several premises….:
1. Great composers knew what they wanted.
2. The interpreter must have the means at his disposal to grasp the composers’ intentions.
3. Music must be read with knowledge and imagination-without necessarily
believing every note and word that is printed. 48

As Leinsdorf suggests, performers need to understand the musical expression that is appropriate for the period that the piece was composed in. By understanding the musical style of the period, they will express the composer’s thoughts, which will portray a more accurate interpretation of the piece. In music, interpretation is a performer’s way of communicating personal ideas. However, this does not mean that interpretation is without boundaries. The laws of music are similar to the laws of society: members of society have the freedom to make choices within the laws of the country. Performers have the freedom to make interpretive choices within the boundaries of the musical score.

The following section refers to the 1st movement of the Dvořák’s Cello Concerto as an example for discussion. The discussion will focus on the usage of vibrato. Again, the discussion here is based on the music score. There are many ways of interpreting the music and there are no right or wrong answers. I believe the most important thing is to pursue what the intentions of the composer are for using vibrato, which is one of the tools that can contribute to a more expressive performance.

Music Analysis

This concerto is in a sonata form; the orchestra plays a long introduction which contains the first and second theme. The music begins with a clarinet solo (Subject 1) without any introduction (See Music Example 42), and is accompanied by the lower strings. The layering of the music gradually increases with the addition of instruments to increase the orchestration. The volume and texture grow until the first climax in measure 23, which is a tutti in ff. After the climax, the music transits with a modulation played by multiple instruments. After the music gets softer, the horn brings out the melody (Subject 2) followed by the clarinet (See Music Example 43). The music becomes softer to prepare for the entrance of the solo.

Music Example 42: Dvořák Cello Concerto full score, beginning. 49

Music Example 43: Dvořák Cello Concerto full score, measures 56 – 70.  

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Ibid., 6-7.
The cello begins its first subject with *Quasi improvisando* to announce its entrance. In the first half of the exposition, measures 87-138, the music contains two elements: ascending notes and descending notes. These two elements give this section energy and flow.

The second subject in the exposition begins from measure 139. Contrary to the first subject, the second subject begins with an expressive melody. The lyrical melody
reintroduces the horn and clarinet solo in the introduction. The music moves to the transition section quickly. The sextuplet notes in the cello play an important role in pushing the music forward and modulating through different harmonies. As a matter of fact, the first note of each beat represents the melody in the wind section. The key modulates through each group of rhythm patterns. The sextuplet notes finally arrive in a new key. The exposition ends on a D major chord that introduces the development.

The first subject is announced again in the opening of the development section within the orchestral interlude. The melody starts in the violins and switches to the lower strings. The melodic variation brings out the new rhythm pattern which leads the music to the new key. The first subject in the solo part appears again in the new minor key and goes into another transition very quickly. The new transition contains groups of sixteenth notes, which starts a new melody in the music. The notes continue to ascend until the end of the development section.

The recapitulation section starts with the short second subject in the orchestra *tutti* and then goes into the solo with the same second subject. The music represents the second half of the exposition and then goes back to the first subject in measure 223. The ending of the movement uses the same rhythm patterns that were used before and
combines with the ascending notes in the solo part. The ending of the first movement uses the first subject to present the triumphal atmosphere.

Vibrato interpretation

A very intense, powerful vibrato is needed in the beginning of the first subject in cello (See Music Example 44). The bow has to be close to the bridge using heavy bow weight to support the powerful vigor. It requires a fast-wide vibrato \((10, 10)\)\(^{51}\) to reach the volume of the brilliant opening. The performer can raise the left arm to support the left hand and the second finger can touch the first finger’s nail closely to assist the finger by providing more weight to do the rotation. The first two bars (Measure 87 and 88) need continuous vibrato, especially on the B, and because the note is repeated four times in the bars with short passing tones, the vibrato has to be maintained with the same oscillation and width, or with increasing oscillations and width toward the end of note to drive the music forward and maintain intensity. In the next measure (measure 89), the same intensity of vibrato has to be kept, especially in the third beat D-sharp. The note can have a short slow-narrow to fast-narrow vibrato. The vibrato can bring out the feeling of a forward motion, which can make the music more interesting. After four bars from the

\(^{51}\) Refers to the 2nd Chapter: Vibrato rectangular coordinate system.
solo entrance, the same rhythm pattern from the first subject appears again with a different pitch. It also requires the same intensity of vibrato, the fast-wide (10, 9) vibrato, to emphasize the second statement of the theme. The rationale of using a smaller width vibrato in the second statement of the theme is that the space from note to note in fourth position is smaller than in the first position. Even though the vibrato in measures 91 and 92 is narrower than in measures 87 and 88, it still has the same intensity through speed. Since the cello plays the first statement of the theme, a full intensity vibrato is needed to attract the audiences’ attention. The second time of the first theme, a louder dynamic fortissimo is used. The same width intensity of the vibrato in fourth position can produce a more powerful effect, because the string length is shorter than in first position and can ring more easily. In the situation where the width of vibrato is the same, the shorter length string will vibrate more than the longer length string. On the contrary, in the situation where the dynamic is the same, the lower position needs wider vibration than the high position to produce the same dynamic.
Music Example 44: Dvořák Cello Concerto solo part, measures 87-88 and 91-92.  

The music becomes more technical and virtuosic at measure 95 (See Music Example 45). Here, the performer can give the third and fourth beat a slight vibrato to emphasize the beat. The vibrato primarily underscores the beats, but can also bring out the *sforzando* without the bow bouncing and pressing too much. The fast note-groups first end in measure 99, which is a whole note F-sharp (See Music Example 46. The cello plays the note and the orchestra fills the rest of the parts. The vibrato in this note does not stay the same throughout. It should be played from fast-wide to slow-wide. The reason for choosing a fast-wide (9, 9) vibrato in the beginning of the note is that the beat and pitch need to be emphasized as the note is arriving. For the rest of the measure, the orchestra will take the melodic role. The vibrato can switch to a slow-wide vibrato immediately, which can reduce the volume to achieve the sound effect to connect

smoothly to the next measure. The quick switch can also create a *fp* naturally. To play the
vibrato in this note, the left arm should be raised up a little bit to move the hand closer to
the lower string. Also, the hand shape can be U-shaped to assist the hand to have more
flexibility to touch the fingerboard, allowing the finger to have more support from the
hand so the finger can firmly vibrate. A similar idea happens two measures later, in
measure 101, on the F-sharp, which is on a thinner string. Here, the hand can go back to
its normal place and resume a C-shape. This vibrato still needs to be fast-wide (8, 8). The
*fp* lets the vibrato switch to slow-wide and lets the orchestra melody come out. The
change in vibrato intensity between the lower note vibrato (9, 9) and the higher note
vibrato (8, 8) is necessary because the lower note needs to be relatively faster and wider
in order to help the vibrato to be heard, while the high note is more easily heard with a
fast-wide vibration.
The second group of fast notes is followed by a small trill section. From measure 110, this is a variation which originates from the first subject. The four bar phrase is reduced to a two bar phrase. Every first and third beat of the first measure of the phrase is a quarter note. Those notes need a fast-narrow vibrato to stand out above the other notes. For the ascending and descending eighth notes in measure 115, 117 and 119 (See Music Example 47), the performer needs to transition the vibrato from fast-narrow (7, 7) to fast-

\[ \text{\textsuperscript{53} Ibid.} \]
\[ \text{\textsuperscript{54} Ibid.} \]
wide (8, 7.5) and back to fast-narrow (7, 7) through the whole measure in order to play
according to the dynamic markings.

Music Example 47: Dvořák Cello Concerto solo part, measures 115, 117 and 119. 55

The first subject rhythm pattern appears again from measure 128 (See Music
Example 48). A fast-narrow vibrato is needed in each note. In each rhythmic pattern, the
first dotted quarter note needs a fast-wide (8, 8) vibrato, and then it needs to switch to a
slow-narrow (7, 7) vibrato, so as to emphasize the first beat of each measure. Also, the
half note, which is in the third and fourth beat, can be played with a fast-wide (8, 7)
vibrato to an even more fast-wide (9, 8) vibrato to drive the music to the next measure.
The slight speed change can push the music forward to the next measure, which
maintains the power and intensity of the melody. After the four similar measures, the

55 Ibid.
music changes in dynamic and mood very quickly. The *sforzando* note, which shifts from the lower register to the higher register, needs to be treated carefully. The performer should avoid shifting over or under the pitch. The note needs to vibrate right away. A gap in vibrato will result in a discontinuity of the music. The interesting thing is, some performers will choose to ignore the *sforzando* and begin the note softer, which can reduce the finger pressure in shifting. Regardless of whether the performer chooses to play it softer or louder, the continuous vibrato is the only thing that cannot be changed.

After the high note, the music becomes softer, and the pitch and register gets lower as well. The vibrato can be changed to a slow and a little bit narrower one compared to the previous few bars.

![Music Example 48: Dvořák Cello Concerto solo part, measures 128-138.](image)


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56 Ibid., 1-2.
In the second theme, the oscillations of the vibrato should be practically equal.

In the soft passage, it is very obvious if the vibrato is not continuous and connected between notes.

The melody from the second subject first appears in the orchestra introduction, which is played by the horn and clarinet. Because it is first played by the horn and clarinet, we have to think of their melody when working on this section. The vibrato should be used continuously and connected through the whole section. There are two types of interpretations in this passage that are commonly heard. The biggest difference between the two versions is in measure 143 (See Music Example 49). Some players choose to make the music softer and more connected in the second statement of the subject, while some players like to make the note even stronger to increase the intensity.

Music Example 49: Dvořák Cello Concerto solo part, measure 143. 57

57 Ibid., 2.
The second subject (See Music Example 50) begins with a fast-narrow vibrato (8, 7) on the note A. The vibrato used on the second note, F, progresses from a slow-narrow (8, 7) vibrato to a fast-wide (9, 8) vibrato. Doing so will enhance the melody line and help with phrasing. In measure 141, the first note D is followed by the note A. In this leap, a gradation in vibrato speed can be used. The note D can begin with a fast-wide (8, 7) vibrato and proceed on to a slow-narrow (7, 6). After connecting to the A note, a slower vibrato (6, 5) can be used. In the next measure, the vibrato intensity can be increased again. In measure 143, two kinds of bow interpretations can be used in the music. In the softer interpretation, the vibrato should be played from fast-wide (7, 6) to slow-narrow (5, 4) and the bow placement will move from the mezzo forte lane to the piano lane. In another interpretation, the vibrato starts from slow-narrow (6, 5) and moves to fast-wide (8, 7) and the bow moves from the mezzo forte lane to the forte lane. Regardless of which interpretation is chosen for measure 143, the second statement of the melody starts with a stronger dynamic level than the first one. In measure 145, the second and third notes shift from lower A to high A. The vibrato on the lower A can start from a slow-narrow (5, 6) and move to a *senza* vibrato. The high A can begin with a *senza* and grow to a fast-narrow (6, 5) vibrato. In the third phrase, measure 147, the hand shifts to a high position.
Therefore, the vibrato can be narrower. The bow has to be controlled to stay in the same place. The vibrato will continue to get wider from measures 154 (8, 7) to 156 (8, 9).

Music Example 50: Dvořák Cello Concerto solo part, measures 139-156.  

In the following passage (from measure 172) (See Music Example 51), the pitch gets higher with each sequence. Therefore, the vibrato used can get wider or faster with each sequence. For example, on the second and fourth beats of measures 172 and 173, the vibrato needs to grow from a fast-narrow (8, 6) to an even more fast-narrow (9, 7) vibrato with each time, keeping the same intensity by maintaining the same speed and width of

\[ \text{Ibid.} \]
vibrato. Although the mechanical intensity is maintained by the player, the audio intensity is increased from a listener’s perspective because the pitch and dynamic level increase. In addition, some bow pressure can be applied at the beginning of the note with an increase in the bow speed to enlarge intensity. In measure 176, the half note ends the phrase. The vibrato applied to this note can move quickly from a senza vibrato to a fast-wide vibrato (8, 7). The arrival of the note signals the entrance of the horns, which then use dynamics and expression to connect to the next phrase in the solo cello. The same idea occurs in measure 184; the difference this time is that the vibrato should be used right away. Since this section consists of sixteenth notes, it already gives the music a feeling of forward motion. The note F presents another climax and a fast-narrow (9, 6) vibrato should be used.
In the last three notes (See Music Example 52) of the exposition section, the performer should use the U-shaped left hand to support the finger and give it more strength and articulation to press on the fingerboard. A fast-wide vibrato is necessary to build up intensity.

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Music Example 51: Dvořák Cello Concerto solo part, measures 172-184.\(^\text{59}\)

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\(^{59}\) Ibid., 3.
In the development section (See Music Example 53), the music in the solo part begins with *pianissimo* dynamic level. This creates a gentle atmosphere in a minor melody which originates from the first subject. In measure 224, the pitch ascends with each note and the vibrato used can increase in speed while keeping the same width. For the next two measures, the melody descends and a slower and narrower vibrato can be used. The same idea can be applied to the next four measures as the dynamics get stronger and then become softer.

\[\text{Music Example 52: Dvorak Cello Concerto solo part, measures 191-192.}^{60}\]

\[\text{Ibid.}\]
Music Example 53: Dvořák Cello Concerto solo part, measures 223-239. 61

**Conclusion**

The Dvorak Cello Concerto is a popular work in the repertoires of most cellists. The music contains large varieties of dynamics, pitch, and techniques. One of the reasons I chose this music as an example is that I want readers to be able to look at a frequently played piece of music more carefully and rethink the music. Since this is a very famous concerto, students will most likely have the chance to listen to a live performance or recording before they start to work on the music. They usually form a first impression in their minds before they start attempting to play the music. This might result in a problem where students think they know the piece well enough without questioning the accuracy of their interpretation. They work on the music from memory, and do not analyze the music or attempt to understand the musical background. Nowadays, many performers

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61 Ibid., 4.
choose to pursue a “personalized” interpretation; in other words, they follow the markings on the score selectively. This might be valid for a professional artist. Many students, however, play what they think is right or imitate the interpretation from the recording. They do not know how to communicate these musical ideas effectively, because they are still learning how to deal with musical interpretation. They are not yet ready to have this kind of liberty, since it may change the composer’s intentions. Teachers should be aware of this issue and correct their students once they notice it happening.

One of the important roles for a teacher is to guide the advanced student. Before allowing students to search for their own style, teachers should help students learn how to establish the right thinking process and correct practice method. Students have to know how to study the music and perform the music in congruence with the intention of the composer. As students, they need to make the performance more historically accurate.

This interpretation combines the materials from the former chapters. Not all the materials in the previous chapters appear in this specific music example, but the materials provide a way to approach the music and work on vibrato interpretation. The interpretation that is provided here is directly from the music. Although vibrato is just one of many aspects of a performance, it adds spice to the music which can create a more
exciting and diverse performance. Not only can vibrato beautify the melody, it can also bring the listener to a different level of enjoyment. In addition, different thinking processes will be used to approach different interpretations.

In this chapter, I presented an example with my interpretation. Since interpretations are in some ways personal, another person may not agree with what I have suggested. However, what is most important is to possess an expressive plan and vibrato applications to support that plan in learning music. This requires reading the music slowly and accurately, listening to the music carefully, and playing the music meaningfully.
Chapter 5: Conclusion

Music is constantly evolving. Most of the different kinds of vibrato discussed in this paper are applicable to the Romantic period and early 20th century music. Music composed during this time leaves room for more freedom and personal predilection. These factors result in many individual interpretations. However, this does not mean that the music interpretation is without any boundaries. Many students do not realize that being true to the original music is the most important thing when they are still learning music interpretation. Some students imitate the playing style of famous performers because they do not have a good understanding of the music and only copy what they hear. They perform what they imagine from memory. This results in music that lacks life. I remember talking to a friend who is a composer, who told me: “I do not like to give my performers a music demo. The music is new to them and I would like to receive a new interpretation from them instead of a duplicate of the demo. The sound which they have copied is pretty close to what the demo sounds like, but it seem like they lose their thought.” From the conversation, I realized that real interpretation is different from copying music. Students need to understand the music, analyze the music, and put those
ideas together to create their opinions which might be wrong, but at least they stay true to the composer’s intention. When applying vibrato, as a matter of personal taste, a part of interpretation, students cannot lose sight of the requirements of musical style. It is good advice for students to understand the context of the music before choosing their vibrato. Students need to attain the ability to pursue the original music first. And then, approaching their own reasonable interpretations will make their music much easier to accept.

At the advanced level, the choice of vibrato in a new piece requires these two considerations: analysis and experience. Students need to exercise their ability to analyze the music and decide on the vibrato they want to use. The classifications mentioned in chapter two provide guidance for students as they choose a suitable vibrato. The second factor, experience, develops musical judgment and taste. This requires a heightened use of visual and auditory senses which helps to hone musical sense and personal interpretation. It also is a skill that needs to be established through practices, performances and studies. Through these experiences, students can use specific types of vibrato at their own will. In the process of teaching vibrato, teachers should encourage students to play with musical awareness. A weak vibrato is a common result if players do
not scrutinize their progress often. A slight change will make a huge difference in the music.

Teachers should not treat all their students the same because no two students are alike. It is a challenge for the teacher to judge every student’s playing standard. Each student has his or her own characteristics and it is the responsibility of the teacher to discover the student’s strengths and weaknesses in order to give the most suitable advice. Similarly, the advice given to each student with regard to vibrato will be different. Therefore, the teacher should treat each problem with the student’s use of vibrato as an individual case. Moreover, the teacher should be careful with his or her observation of each student, especially when distinguishing between weakness and bad habits. A bad habit can be fixed in a short amount of time; a weakness requires lots of time to be improved on. Teachers should be careful when identifying the problems of each student and administering appropriate exercises or advice to them.

Because of the importance of the vibrato technique in playing the cello, there is an ongoing need for additional research on interpreting vibrato, and a lot more research and analysis can be done on vibrato and its teaching applications. This study, based on my learning experiences, discusses possible vibrato classifications and offers practical
exercises. Vibrato is a huge component in learning the cello, especially when students approach advanced and professional levels. A small motion can produce a huge difference in musical effect. Mastering vibrato not only requires short-term practice but also long-term experience. May this be an encouragement to all musicians to engage in continuous development of their artistry.
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