

AN INVESTIGATION INTO THE BOWING
TECHNIQUES IN PERFORMING
THE SELECTED WORKS BY
J.S. BACH, J.B. VANHAL
AND G. BOTTESINI

WAN MARINA BINTI MOHD ZAINI

SULTAN IDRIS EDUCATION UNIVERSITY

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THE SELECTED WORKS BY J.S BACH,
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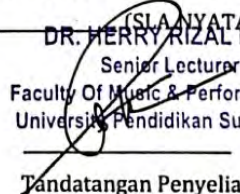
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ABSTRACT

Bowing technique is an important aspect of double bass playing because it affects the tone, articulation, and expression of the instrument. The ability to execute virtuosic solo works on a double bass demands a significant amount of practice in addition to a high level of competence. This study investigated the fundamental approach of the right-hand bowing technique in the musical selections of J.S Bach, J.B Vanhal and G. Bottesini which specifically include dynamic delivery and articulation. There are two outcomes of this study; (1) is in the form of the dissertation, while; (2) is in the form of two recitals that breaks down into two performances of Recital I and II. There are three research objective of this study. The first is to identify the bowing technical challenges in the selected works of J.S. Bach, J.B. Vanhal, and G.Bottesini. The second is to develop bowing techniques in the selected works of J.S. Bach, J.B. Vanhal, and G.Bottesini. The third is to perform the selected works in the form of Recital I and II. The methodology of this study is using an artistic research paradigm. The investigations of bowing techniques are being analysed through the score analysis and technical analysis perspective in which the finding are reported in the form of textual and video documentation. The findings of this study elaborates on the various bowing techniques on each selected work which reported in the form of artistic creative work dissertation and two recitals.

KAJIAN TERHADAP TEKNIK GESEKAN DI DALAM MEMPERSEMBAHKAN KARYA TERPILIH OLEH J.S BACH, J.B VANHAL DAN G. BOTTESINI

ABSTRAK

Teknik gesekan adalah aspek yang penting di dalam permainan double bass kerana ia memberi impak pada kualiti ton, artikulasi dan luahan (*expression*) alat muzik ini. Keupayaan untuk mempersembahkan komposisi solo yang sukar memerlukan masa latihan yang banyak di samping kepakaran yang tinggi. Pembelajaran ini bertumpu kepada siasatan tentang teknik gesekan di dalam komposisi J.S Bach, J.B Vanhal dan G.Bottesini di mana pengkhususan kajian adalah termasuk kepada pelaksanaan dinamik dan artikulasi. Terdapat dua bentuk output daripada kajian ini di mana; (1) adalah dalam bentuk disertasi manakala; (2) adalah dalam bentuk persembahan Resital I dan Resital II. Terdapat tiga objektif kajian di dalam pembelajaran ini. Objektif pertama adalah untuk mengenal pasti teknik-teknik gesekan pada tangan kanan yang berkaitan pada komposisi terpilih oleh J.S Bach, J.B Vanhal dan G. Bottesini. Objektif kedua adalah untuk menghasilkan teknik gesekan pada komposisi terpilih oleh J.S Bach, J.B Vanhal dan G. Bottesini. Objektif ketiga pula adalah untuk mempersembahkan komposisi terpilih di dalam bentuk Resital I dan II. Metodologi di dalam pembelajaran ini adalah menggunakan Kajian Artistik Paradigma. Pembelajaran untuk penyiasatan teknik gesekan adalah dianalisis melalui skor analisis dan teknikal analisis di mana dapatan kajian di laporkan dalam bentuk penulisan dan video. Dapatan kajian di dalam pembelajaran ini mengolah teknik gesekan pada setiap pilihan komposisi di mana kajian ini dilaporkan dalam bentuk penulisan kajian artistik dan dalam bentuk persembahan dua recital - Resital I dan Resital II.



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CHAPTER 1

INTRODUCTION

1.0 Introduction

This study focuses on a double bass solo music performance. The discussion is based on the selected pieces which represent the period from Baroque, Classical to Romantic. This study investigates the fundamental approaches of the right-hand bowing techniques in the selected music of J.S Bach, J.B Vanhal and G. Bottesini. The investigations of these techniques are in relating to the right hand bowing techniques focuses on the deliverance of the dynamics and articulations demanded in these selected works. Quoting from the performer's former double bass instructor – Andrehas Dehner "A good double bass sound lies all in the right hand bowing". Moved by this thought this study is inspired to be focusing and investigating of the right hand bowing techniques required in performing these highly technical demand of the selected double bass pieces.

This study integrates two elements as a whole. One is the dissertation and two is a public recital that breaks down into two performances of Recital 1 and 2. This dissertation mainly focuses on the investigation of the right-hand techniques which shall deepen my personal understandings by documenting a detailed analysis using the techniques in the selected pieces. The considerations of the techniques adopted distinctively in each piece are also interrelated by its compositional and stylistically perspectives which I shall also briefly discuss in this research. I understand that good fundamentals of the right hand techniques measures one's technical ability in executing challenging musical meanings and expressions. This research shall contributes into striving for an enjoyment in my double bass recital.

1.1 Inspiration/Background of Study

1.1.1 Inspiration

Referring to my experience as a performer, the double bass seems to be more popular as an accompaniment instrument either to be seen in a jazz band setting or in a string section of a full orchestra. The ability to execute virtuosic solo works on a double bass demands a significant amount of practice in addition to a high level of competence. Even though very few people have been able to reach this level of mastery, there are still talented double bass soloists making their way up through the ranks of today's music landscape. Machado (2005) notes that despite advances in technology, the rarity of double bass soloists persists, and many people view them as an anomaly. This is despite the fact that there are more instruments available today than ever before.



A common trait that I could perceive as I listened to the professional soloist double bassists such as Gary Karr, Joel Quarrington, Duncan McTier, Edgar Meyer, Thomas Martin, Edicson Ruiz and many equivalent others, is that each one of them owns an intense projected sound that elevates their names as double bass soloists. This intense projected sound is what I refer to as a good tone quality. This good tone quality is being achieved when the double bass is resonating at its optimum due to the pressure imposed on the strings using the bow played by the right hand. The definition of a good tone quality is a process that one needs to develop to be conceptualized in their minds. As suggested by Moss (2006), “Stringed instrument performers and teachers have long advocated listening to singers, both live and on recordings, to gain an individual concept of sound in the mind of the student”. (p.1). Therefore, we understand the conceptualized sound in one’s mind may differ. The history of one’s experiences and music listening shall shape the definition of a good tone quality in one’s mind. Parallel to having a vivid conceptualized sound in one’s mind, there are many other technical aspects that contribute to a good deliverance sound generation and good tone quality in one’s playing.

The quality of tone produced during a double bass recital contributes a great measure in the quality of a double bass recital. Achieving the concept of a good tone quality and good sound production in all selected repertoire is the main focus of this study. The good sound production is undeniably lies on the work of the right hand as mentioned by Moss (2006, p. 1) “and without the right hand, as string player makes no sound”. Many university students and teachers have a lack of understanding in achieving a good sound production. Furthermore, Moss also described:





String teachers and students immerse themselves in the verbiage of “an esoteric art,” rather than relying on the inherent logic of the instrument and bow to develop systematically an expressive technique. In the absence of expressive technique, students and ensembles muddle through their repertoire without realizing that “sound is the easiest medium to use in a purely artistic way”. (Moss, 2006, p. 5)

This lack of understanding of grasping the techniques required limits one’s performing ability. In contrast, as elaborated by Karr (1970) “Mastering your right-hand technique will unquestionably lead you to new worlds of expressiveness and freedom” (p.14).

This research allows me to improve my comprehension skills discussing the problem areas in achieving the techniques required so that the repertoire can be delivered successfully. I aim to perform the complete movements of the selected works composed during the three different periods- from baroque, classical to romantic era. The processes in performing the selected works shall improve my understanding in the historical perspective of the instrument, as well as the understanding of the musical styles of the selected repertoire.

I personally chose the selected repertoire for one common trait, which is the elegance in its melodies for all the three masterpieces. In addition, managing to perform all the challenging musical phrases of each piece in a 60-minutes double bass recital enhances my skills as a double bass player. The Unaccompanied Bach’s Cello Suite No.2, Vanhal Concerto in D Major and Bottesini Concerto in B Minor are widely played all over the world by university students and professionals. The rational for choosing the selected repertoire and transcription are as follows:



1.1.1.1 Bach Cello Suite No. 2

During my undergraduate years back in 2009, I used to play only the Prelude of this Cello Suite No. 2 which I personally transcribed to A Minor. This experience has urged me to perform this complete work of The Cello Suite No.2 in A Minor for my masters degree recital. Apart from contributing an alternative transcription of this Suite transposed to A minor for the future UPSI's students who wish to play this piece in the future, this study provides a detailed suggested fingerings and bowings to help students play this particular suite. This suite in addition represents the musical style of during the Baroque period in which the style of music that I wish to enhance my musical knowledge of.

1.1.1.2 Vanhal Double Bass Concerto in D Major

The earliest concerto ever written for the double bass was found during the Classical period. The two concertos that has been famously representing the classical era, one from Dittersdorff and another from Vanhal. Between these two, I have decided to work on the Vanhal Concerto. In my opinion it carries a more elegance in its melodies on the double bass as a whole composition and it is a more famous concerto to be played for most professional orchestra auditions.



1.1.1.3 Bottesini Concerto in B Minor

Another two famous concertos that represent the romantic era and widely played for orchestral auditions are one, Bottesini Concerto No. 2 and The Koussevitsky Double Bass Concerto No. 2. I have personally chosen the Bottesini Concerto No 2 in B minor to be played in my recital for its likeable melodious cantabile lines. This concerto demonstrates a virtuosic playing which comprises the techniques of the various thumb positions and harmonic in the upper half of the bass. The intense projected sound is the aim for this recital and the studies of the right hand bowing techniques shall in hope to contribute in achieving a good double bass tone.



1.1.2 Background of Study

There have been several studies conducted on the repertoire and techniques of the double bass, which have explored the history, development, performance and compositional practices of the instrument's music. Some of these studies include:

"An analysis of Double Bass Vibrato" by James Paul Mick (2012): The paper examines the use of vibrato in double bass performance and provides an in-depth analysis of different vibrato techniques used by double bass players. The analysis provided data to help music educators to create more efficient and consistent ways in teaching vibrato to university students.

Overall, "An Analysis of Double Bass Vibrato" provides a valuable contribution to our understanding of double bass performance practice and technique, particularly





in the area of vibrato. The paper is well-researched and provides a detailed analysis of different vibrato techniques, making it a valuable resource for both students and professionals in the field.

One limitation of the study is that it focuses primarily on the Western classical tradition and does not explore vibrato techniques in other musical styles, such as jazz, folk, or popular music. This means that the study may not be applicable to double bass players who specialize in these genres. Another limitation is that the study is based primarily on existing literature and does not involve original empirical research.

Additionally, the study is limited in its scope, focusing primarily on vibrato technique and not exploring other aspects of double bass performance, such as bowing or finger techniques. While vibrato is an important aspect of double bass playing, it is just one component of a larger and more complex performance practice.

The methodology used in "An Analysis of Double Bass Vibrato" by James Paul Mick involves a combination of historical research, theoretical analysis, and practical examples. The historical research component involves a survey of existing literature on the use of vibrato in double bass playing, tracing the evolution of vibrato technique from the Baroque period to the present day. The theoretical analysis component involves an examination of the physical mechanics of vibrato, including the role of the fingers, hand, and arm in producing the vibrato sound. The practical examples component involves the use of musical examples to demonstrate different types of vibrato and their application in various musical contexts. This includes both written





music examples and recorded examples of performances by professional double bass players.

"Analysis and Performance Guide for Figment III By Elliot Carter" by Nahee Song (2012): This study discusses Carter's unique compositional tools that potentially highlights double bass as a solo and virtuosic instrument. This research discusses the compositional efforts that Carter took working closely with a professional bass player and a pedagogy. An analysis of Carter's modern approach of performance practice also being explored hereto provide as a valuable reference for players.






This study discusses the historical aspect of the instrument, the earliest recognized virtuoso players; like Sperger, Dittersdorf, Dragonetti and Bottesini, and major earlier composers who have contributed to double bass repertoire before the composer Elliott Carter. In addition, this research also includes a survey of transcribed works for double bass which presents The Bach's Cellos Suite and Schubert's "Arpeggione" Sonata. Apart from the mentioned, the main focus of this study is the presentation of the technical analysis Elliott Carter's composition *Figment III* for double bass like the harmonic structure being used. Finally, this study also provides the performance guides discussing in briefs on the technical requirements employed for *Figment III*.

This study is significant in documenting the information thorough investigation and analysis of this modern work which may become as an important reference for future performers. However, the limitation of this study only focuses on the compositional analysis and technical analysis of *Figment III*.



The method employs here based on an analysis of the compositional and technical aspects of the composition. In addition, a close interview was conducted with “Don Palma” who Elliott Carter has dedicated or written this composition for. This interview depicts a closer underlying justifications behind the composition.

"Experts and Excerpts : The application of Giovanni Bottesini's Complete Method for the Contra-Basse to the preparation of orchestral excerpts taken from the works of Giuseppe Verdi" by Alexandra Patricia Giller (2015): This study identifies separate technical and musical considerations in each excerpt of Verdi's, then applying the Bottesini's treatise *Complete Method for the Conte-Basse* to address the technical and musical issues identified.

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  This dissertation is significant in contributing to a more informed interpretation of double bass literature. In addition, another varied interpretation of the selected excerpts are being presented in this study.
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This study only limits to the works of Giuseppe Verdi's using the treatise from Bottesini's Complete Method for the *Contre-Basse* as a tool to solve the identified musical issues. This may serve as an alternative structure if other works and other treatise to be used.

The methods being employed in this application are; first, to identify the separate technical and musical considerations in each excerpt taken; and then finding sections of the excerpt that may be used to work on each specific issue, or in which Bottesini has mentioned his approach based from his treatise.

"The Double Bass in Recital : Some Practical Aspects of Solo Technique " by Jay Ronald Grauer (1961): This research discusses some of the practical aspects of solo technique from the literature of the Baroque, Classical, Romantic and Modern periods to provide a basis for a better understanding of the nature capabilities, and limitations of the double bass in recital.

This research also discusses on the distinct characteristic of the physical shape and the comparison of its tunings between a solo and an orchestral bass. This research also informs on the historical timeline of the solo tunings based on geographical locations since the 1750s to present. An informed tunings of double bassists virtuoso like Bottesini and Koussevitzky also been included here to provide a better understanding of the performance characteristics of these solo compositions were

This study aims to provide a more informed analytical commentary on selected solo double bass compositions and transcriptions for public performance. This information is significant to aid a performer in selecting repertoire thus in accommodating to prepare for a double bass recital. This study contributes to a better understanding of the capabilities and limitations of the double bass in recital.

This research limits the discussion and commentary only constraint to the selected repertoire. The commentaries of the selected solo works are pertaining to its historical, analytical and practical characteristics of the pieces.

This dissertation compiles the selected solo repertoire dated from baroque, classical, romantic to modern as one of the methods of research to this study. Then, these solo pieces are studied from its historical perspective, compositional issues and technical aspect ; an analytical commentaries provide an adequate understanding in hope to contribute an insight to the many questions concerning the double bass and its solo literature.

“Favoured Sound Production Exercises of Selected Violin, Viola, Cello, and Double Bass Pedagogues : An Analysis and Adaptation” by Kirk D. Moss (2006) : This study identify and describe favoured sound production exercises of selected contemporary violin, viola, cello, and double bass studio teachers. The study focuses on developing a technique that can be used for school string class in developing the string player’s right hand.

The significant of this study could help to lay the groundwork for a resource by collecting the favoured sound production exercises used by selected master pedagogues – these exercises could be used and adapted in the heterogenous string class.

This study does not receive consideration from a certain specified works and literature – e.g works from pedagogues who earned reputation through teaching children, work of string pedagogues who are researchers, work of string pedagogues known as group string teachers, specialized style of bowing or music etudes unless they pertain to specifically identified exercises, books or articles mainly addressing bowing proper, etudes or isolated repertoire and lastly lengthy exercises that consumes an entire class period to implement.



The method used to develop these exercises were developed based on the data of interviews collected with pedagogues, relevant documentary analysis and literature review. These exercises documented were being tested on a sample group of students and a structure follow-up interview were being conducted to understand on the effectiveness of these exercises.

“On Pedagogical Methods For Jazz Double Bass” by Alfred J. Polidoro (2018): This study explores the pedagogical literature for both classical and jazz double bass. It highlights the need for a more comprehensive method for jazz double bass playing and seeks to provide techniques that can be used to improve jazz double bass performance.



Specifically, the study suggests using pivoting, the use of the third finger, and the thumb techniques as advancements to classical techniques. These techniques are then applied to standard jazz melodic and excerpts taken from famous jazz solos. The study aims to limit the discussion of left-hand techniques to selected excerpts from the jazz repertoire.

The study's background highlights the importance of developing pedagogical methods that are specific to jazz double bass playing. While classical techniques are often used as a foundation for jazz double bass playing, there are also unique technical and stylistic demands in jazz that require a more comprehensive approach to pedagogy.

Overall, the background of the study emphasizes the importance of developing effective and comprehensive pedagogical methods for jazz double bass playing, with a





focus on techniques that are specific to the demands of jazz performance. The limitation of "On Pedagogical Methods For Jazz Double Bass" by Alfred J. Polidoro (2018) is that it only focuses on the discussion of left-hand techniques on selected excerpts from the jazz repertoire. This means that the study may not provide a comprehensive overview of pedagogical methods for jazz double bass playing and may not be applicable to all jazz performance contexts.

Additionally, the study may not provide a complete picture of the technical and stylistic demands of jazz double bass playing, as it only focuses on left-hand techniques. Other important aspects of jazz double bass playing, such as bowing techniques, rhythm, and improvisation, may not be covered in the study.



Maurice E. Kelly II (2006) : This study discusses on the performance practice issues in the four short solo pieces of double bass composed by Serge Koussevitsky. This study compares the original recordings of a double bass virtuoso – Koussevitsky's dated back in 1900s to today's modern virtuoso's recording of Gary Karr's. This comparison provides performers with the tools necessary to produce a historically informed performances of all four pieces.

The background of study discusses the compositional aspects (tempo markings), technical interpretations (portamento and vibrato) as well as the improvisation section (cadenza) being interpreted by both virtuosos. This study only limits the comparison to Gary Karr's recordings which constraint to a perspective of only one of today's virtuoso's prospect.



Finally, the methods being adopted in this study involve involves a combination of historical research and compositional interpretations. The segments chosen were being compared to both virtuosos and the comparisons provide new informed knowledge for future performers who wish to perform these pieces.

“Frederick Zimmermann : Double Bass Performer and Pedagogue” by Jay S. Blumenthal (1983) : This study investigates the life and works of Frederick Zimmermann in order to determine his contribution to the performance and pedagogy of the double bass.

The significance on this dissertation of Zimmermann’s life is written in depth to provide: 1) a documentation of Zimmermann’s contribution in the area of double bass pedagogy; 2) a rectification on neglected area of study for those interested in the double bass; 3) as a structure for similar studies in different instrumental area.

This research limits : 1) its findings to the first hand of the works of Zimmermann’s artistic activities; 2) its interviews on the people who only had direct contact with Zimmermann, e.g., colleagues, students and family members.

This study uses a historical approach as the method for this study. The literature of the history uses the procedures as suggested by Louis Gottschalk which include: 1) the collection of the surviving objects and of the printed, written, and oral materials that may be relevant; 2) the exclusion of those materials or parts that are unauthentic. This study also adopts Roger Phelps guided questions in determining an item’s authenticity. These procedures helps to establish credibility in the research area of: 1) musically



pertinent details of the life of Frederick Zimmermann which include published and unpublished sources of his works and biographies ; 2) examining Zimmermann's approach to teaching and playing the double bass; 3) using the researched information to assess the contributions of Zimmermann to the teaching and playing of the double bass.

“The Art of the Bow – Towards Developing a pedagogy for arco Jazz Bass”

Geoffrey Richard Saunders (2017) : This study investigates recorded examples of arco jazz bass performance in an effort to identify technical features that could serve as a starting point in developing a teaching pedagogy for arco jazz bass. Scholar publications relating to jazz bowing, method books on bowing technique and current performance practices employed by jazz bassists are examined. An informed history relating to solo works and solo bass players also discussed here. The techniques of prominent professionals who utilize bow in their music are analysed, pedagogical ideas are presented based on the elements of these performances. Common arco jazz technique are presented and analysed in order to gain a deeper understanding of the technique.

To date, there are not many resources explaining the pedagogical method for arco jazz performance. Jazz bass players without prior orchestral training are rarely introduced to the bow and its expressive possibilities. This study significantly varies the knowledge and literature of arco jazz playing. It contributes as a pedagogy method of arco jazz bass.



This study limits on identifying and analysing selected historical and contemporary jazz arco recordings from 1920's up to date (2017) in order to develop a pedagogy based on that research. It does not review any other genres pertinently to classical.

The method of this research compiles a discography of purposely selected samples that uses the bow in the recordings. From this compilation, researcher selects five notable recordings of arco jazz bass to be transcribed which focuses on contemporary recordings. Unique musical practices and techniques are identified. An informed transcription which include identification of bowings and analysis of techniques used are presented. Lastly, to construct a new method of pedagogy in jazz bowing requires a thorough investigation of existing knowledge and current pedagogies method. Comparing Goldsby's approach as a an existing knowledge to other current pedagogical method structures a development of performance pedagogy for a jazz bass bowing. This serves towards the development of pedagogy and add to the body of knowledge of arco jazz bass playing.

Overall, these studies have contributed to our understanding of the double bass repertoire and its significance within the wider context of classical and jazz music. There is still insufficient informed practices discussing right hand techniques from the style of Baroque to Romantic.

The right hand techniques are the essentials to an artistic performance. This research shall contribute to a better understanding of developing the techniques associated within the musical issues identified. This study also aims to provide a written

informative interpretation of the selected pieces for future double bass players who is interested to approach these pieces.

1.2 Problem Statement

The importance of double bass bowing technique has been explored in the previous study which are as follows:

1. Bowing technique is an important aspect of double bass playing because it affects the tone, articulation, and expression of the instrument. A strong and consistent bowing technique is required in a musical performance to produce a clear, resonant, and well-articulated sound, as well as to achieve smooth and

expressive phrasing (Benfield, Warren, and James, 1973; Kwiatkowska, 2016)

(Benfield, Warren, and James Seay Dean Jr. *The art of double bass playing*. Alfred Music, 1973).

Kwiatkowska, M. (2016). TECHNICAL EXERCISES FOR DOUBLE BASS: A study of selected methods and their effect on the development of performance technique.

2. Zimmerman (2013) in his book which entitled *The Art of Double Bass Playing* offers advice on phrasing, dynamics, and articulation, and he includes a large number of musical examples to illustrate how these concepts are applied in real-world situations. The book's ability to provide clear and succinct explanations of bowing techniques, along with detailed instructions and exercises designed to assist players in the development of their skills, is one of the book's primary strengths. Zimmerman places a strong emphasis on the importance of proper bow technique in order to produce a full and resonant

sound, and he offers advice on the speed of the bow, the pressure applied to it, and the contact point.

3. George Vance's (2000) "Progressive Repertoire for the Double Bass: Volume 1" is a highly acclaimed resource for young double bassists wanting to develop a strong foundation in right hand bowing techniques. The book is intended to present a sequence of progressive exercises and musical pieces, allowing players to enhance their skills in a disciplined and progressive manner.

The emphasis on establishing a solid foundation in bowing technique is one of the book's primary qualities. Vance includes thorough instructions on bowing technique, including bow speed, pressure, and contact point, as well as a variety of exercises and musical pieces meant to assist players in developing their talents in these areas. The book focuses on creating a nuanced and expressive

approach to playing the double bass, in addition to providing technical training.

Vance provides instruction on phrasing, dynamics, and articulation, as well as several musical examples illustrating their use. Entire, "Progressive Repertoire for the Double Bass: Volume 1-3" is an outstanding resource for double bassists wishing to improve their bowing technique and overall musicianship. Its sequence of graded exercises and musical pieces make it a great resource for musicians of all ability levels, from beginners to advanced players wanting to hone their abilities.

Meanwhile, Bach's Cello Suite No. 2, Bottesini's Concerto in B Minor, and Vanhal's Double Bass Concerto in D Major are the repertoires of this study. Bach's Cello Suite No. 2, Bottesini's Concerto in B Minor, and Vanhal's Double Bass Concerto in D Major are all significant works in the double bass repertoire. There are parallels



between these works, yet there are also notable distinctions. Each of these of selected compositions of this study employs virtuoso technique, requiring a high level of technical skill from the performer. Specifically, each of the three compositions contains parts that necessitate accurate bowing technique and a good ear for intonation. Yet, there are substantial contrasts between these works. Previous research as outlined below shows that there is a need to further investigate aspects of bowing technique in playing these works.

1. According Speed, (1997) Bach Suite No. 2 was originally written for a Baroque instrument which was considerably different from the construction of today's cello. This solo piece that is often performed on the double bass utilizing similar stylistic quality to the cello. The notion of the bowing concepts like the bow speed, pressure and contact point can be adapted from the cello's understanding but somehow the execution on the double bass has its own distinctive challenges due to physical construction of the instrument and the weight of the bow itself.
2. According to Lavergne, (2021) Double Bass Concerto in D Major by Vanhal is a spectacular composition for double bass and orchestra written during the classical era. The work is remarkable for its vitality and vigour, as evidenced by its quick, staccato bowing and intense rhythmic parts. Meanwhile, Stowell, (2003) state that two concertos from the classical eras that famously required in the orchestra auditions are 1) J.B Vanhal 2) Dittersdorff concerto. Many professional recordings and masterclasses can be found on these two concertos. But, a written discussion on these two concertos are still yet to be explored.



3. Bottesini's Concerto in B Minor which was written during the romantic period is a more virtuoso piece that showcases the double bass as a solo instrument accompanied by an orchestra (Vasilistov, 2013). The work is distinguished by its technical difficulties, which include fast scale sections, difficult arpeggios, and virtuosic bowing techniques. In addition to lyrical and expressive moments, the concerto demands an expressive musical meaning from the double bass as a solo instrument which seldomly discussed and written in full dissertations (Ramirez-Castilla, 2007).

Responding to the above statement, there is a need of study in regards to the bowing technical requirements in performing the selected double bass repertoires. This study of the right-hand bowing shall interdependent within its historical and stylistic perspectives; technical aspects and compositional views which yet need to be explored in presenting this technical study of the right hand bowing.

1.3 Research Objectives

The research objectives of this study are as follows:

1. To identify the bowing technical challenges in the selected works of J.S. Bach, J.B. Vanhal, and G.Bottesini.
2. To develop bowing techniques in the selected works of J.S. Bach, J.B. Vanhal, and G.Bottesini.

3. To Perform the selected works of J.S Bach, J.B Vanhal, and G.Bottesini in the form of Recital.

1.4 Research Questions

The research questions of this study are as follows:

1. What are the bowing technical challenges in the selected works of J.S. Bach, J.B. Vanhal, and G.Bottesini?
2. How to develop the bowing technical challenges in the selected works by J.S. Bach, J.B. Vanhal, and G.Bottesini?
3. How to perform the selected works of J.S Bach, J.B Vanhal, and G.Bottesini in the form of Recital?

1.5 Repertoire Design

This submission integrates two elements as a whole. One is the dissertation and two is a public recital that breaks down into two performances of Recital I and II. The first recital was recorded due to the pandemic factor, and the 40-minutes repertoire programme is as follows:



Table 1.1

Repertoire design 1

Bach Cello Suite No 2 transposed to A minor for double bass	
<i>I - Prelude</i>	4'35"
<i>II – Allemande</i>	4'05"
<i>III- Courante</i>	2'15"
<i>IV – Sarabande</i>	7'01"
<i>V - Menuetto I & II</i>	3'44"
<i>VI – Gigue</i>	2'53"
Total	24' 33"
Vanhal Double Bass Concerto in D Major	
<i>I. Allegro Moderato</i>	5'06"
<i>II. Adagio</i>	6'43'
<i>III. Allegro</i>	4'32"
Total	16' 21"
Grand Total Recital I	38' 54"

Recital II is a 60 minutes public performance which is a 20 minutes more extension of music from the Recital I and the repertoire programme is as follows :

Table 1.2

Repertoire Design 2

Bach Cello Suite No 2 transposed to A minor for double bass
<i>(continue)</i>



Table 1.2 (*continue*)

<i>I - Prelude</i>	4'35"
<i>II – Allemande</i>	4'05"
<i>III- Courante</i>	2'15"
<i>IV – Sarabande</i>	7'01"
<i>V - Menuetto I & II</i>	3'44"
<i>VI – Gigue</i>	2'53"
Total	24' 33"
Vanhal Double Bass Concerto in D Major	
<i>I. Allegro Moderato</i>	5'06"
<i>II. Adagio</i>	6'43'
<i>III. Allegro</i>	4'32"
Total	16' 21"
Bottesini Concerto for Double Bass in Bminor	
<i>I. Allegro Moderato</i>	7' 07"
<i>II. Andante</i>	5' 30"
<i>III. Allegro</i>	6' 00"
Total	18' 37"
Grand Total Recital II	59' 31"

1.6 The Significance of study

It is important to understand different bowing techniques in order to execute the selected works by J. S. Bach, J. B. Vanhal, and G. Bottesini. There are numerous reasons for this. First, it has the potential to offer a more in-depth comprehension of the technical requirements and expressive elements of these works, which, in turn, can



guide double bass players in their interpretation and performance of these selected pieces.

Second, the research has the potential to assist in the identification of recurring difficulties and technical requirements in the chosen works, with a particular emphasis on the application of bowing techniques. The creation of educational approaches for playing the double bass with a particular emphasis on improvement of bowing techniques can be informed by these information.

Lastly, the investigation into the relationship between bowing techniques and musical expressions can make a contribution to the larger field of research in music performance. This will be accomplished by focusing on how the two are related. This can help us gain a better grasp of how various bowing techniques can be applied to the music in order to portray a broad variety of feelings and dispositions, as well as how this ties to the overall interpretation of the piece.

In general, the investigation of bowing techniques in the performance of selected works by J. S. Bach, J. B. Vanhal, and G. Bottesini is significant for improving our understandings of the technical and expressive demands in these pieces, as well as contributing to the development of pedagogical methods for double bass playing and the broader field of research in music performance.

1.7 The Limitation of the study

The study's reliance on a canon of works by a selected group of composers may reduce its transferability to different musical settings. In other words, the variety of bowing techniques investigated and the general representativeness of the sample may be constrained by the selection of repertoire.

Therefore, these constraints should be considered when trying to extrapolate the study's findings into other situations. Future studies can be expanded by these gaps by examining a broader range of repertoire and investigating additional factors that may influence bowing technique in double bass performance.