

**THE APPLICATION OF SELECTED APPROACHES IN RELATION TO THE
ELEMENTS TONE, TOUCH AND RELAXATION IN THE TEACHING OF
PIANO TECHNIQUE: THREE CASE STUDIES**

LAY YEN SOH

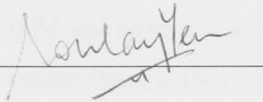
**A thesis submitted in partial fulfilment
of the requirements for the degree of
Master of Philosophy of
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DECLARATION OF ORIGINALITY

I, Lay Yen Soh, hereby declare that this thesis is my own work, and that no part of this thesis has been submitted in any form for a degree in any university. Information derived from the published and unpublished work of others has been acknowledged in the text, and a list of references is given in the bibliography.

Signature: _____



Date: 31 Oct 2011

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ABSTRACT

This investigation into the teaching of the piano technique elements of tone, touch and relaxation, using the approaches of three theorists with pre-tertiary students, evaluates the effectiveness of each approach in the teaching of these elements. The piano technique principles of Tobias Matthay, James Ching and József Gát were applied to selected Classic and Romantic era repertoire in a six-week teaching program implemented by the author, seeking to overcome areas of difficulty in relation to tone, touch and relaxation encountered by the students within the repertoire.

Each student completed a specially-designed pre-study assessment, which required the student to play two pieces they had chosen, one each from the Classic and Romantic eras. The areas assessed within the repertoire were in relation to tone, touch and relaxation, and this assessment was administered by a panel of three independent examiners experienced in piano teaching and performing. After the pre-study assessment had taken place, the students were each assigned, at random, to learn the approach of one piano technique theorist for their two selected pieces, in six weeks of teaching.

At the completion of the teaching program, the students were again assessed by the same panel of examiners. This post-study assessment took place in order to ascertain any discernable changes in relation to tone, touch and relaxation in the students' playing of the same repertoire, after learning the approach of their assigned theorist. Results from the two assessments were compared, the author's personal observations during the teaching process and the students' feedback of the learning process were analysed to determine the effectiveness of each theorist's approach to piano technique.

The conclusions of this study enhance the understanding of the merits of each approach, and their application to pre-tertiary students of different standards and learning needs.

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CHAPTER 1

INTRODUCTION

1. Setting of the Study

The teaching and playing of the piano is a major part of Western culture. Commonly, the repertoire played on the piano ranges from the late seventeenth century to the twenty-first century. Such repertoire requires that the player has a piano technique¹ sufficiently developed to meet the technical demands associated with the music being played. All pianists, whether teachers, students, or professional performers, face issues associated with piano technique; issues such as, for example, the speed of physical movement and muscle tension levels, on which the broad scope of this research focuses.

Ever since the late eighteenth century, many keyboard treatises and methods have included information related specifically to piano technique. Such pedagogical books include for example, Johann Peter Milchmeyer *Die wahre Art das Pianoforte zu spielen* (1797), Muzio Clementi *Introduction to the Art of Playing on the Pianoforte* (1801) and Carl Czerny *Theoretical and Practical Pianoforte School* (1839). An example of a late nineteenth century keyboard treatise is Charles-Louis Hanon *The Virtuoso Pianist* (1873).

Twentieth century piano methods include Leila Fletcher *The Leila Fletcher Piano Course* (1947), and Shinichi Suzuki *Suzuki Piano School* (1978). Some authors have written books calculated specifically for the teacher rather than for the student. These books focus on the teaching and learning of the piano, for example, Marienne Uszler *The Well-Tempered Keyboard Teacher* (1999), James Bastien *How to Teach Piano Successfully* (1973) and Martha Baker-Jordan *Practical Piano Pedagogy* (2003).

Music education journals also deal with piano pedagogy. *Piano Quarterly* and *Clavier* both regularly contain articles exploring various subjects relating to piano playing and technique.

Keyboard treatises, pedagogical books and articles commonly reveal a lack of agreement in relation to the teaching of piano technique. Lister-Sink (1994, p. 29) argued that 'the abundance of many approaches to the teaching of piano technique gives

¹ For the purposes of this study, the term 'piano technique' is defined as the physical movements associated with piano playing, the means through which one's musical intentions are realized.

rise to confusion among teachers in relation to what is most effective'. Many piano teachers base their teaching of piano technique on their own experiences as students, rather than on empirical research. In support of this view, Tannhauser (1999) stated that 'the teaching of instrumental technique (which includes piano technique) is an example of tradition-bound culture' (p. 191). Kennell (1992) was of the opinion that 'performance expertise is passed from one generation of performers to the next through the lineage of personal experience' (p. 5).

As a piano teacher who has been teaching pre-tertiary students for the past fifteen years at the start of this research, I have largely based my teaching principles on those of the teachers with whom I studied. Following five years of private studio tuition which I gave on a part-time basis, I studied the piano as an undergraduate at the University of Melbourne with Alexander Semetsky. He was familiar with the teachings of the three selected pedagogues, and often applied their principles of technique in my one-on-one lessons. These principles were sometimes taught explicitly, and at other times implicitly. My years of teaching experience, coupled with what I learned within the undergraduate context in relation to piano technique, have resulted in much that is subjective, as well as empirical, in relation to my understanding of piano technique.

Many researchers divide piano technique into different elements, such as the speed of physical movement, muscle tension levels, hand position, posture, pedalling, tone and touch. These researchers usually have their own approach to the teaching of these piano technique elements. Given that there are abundant approaches to the teaching of piano technique, the broad question emerges: how effective are these specific approaches to the teaching of specific elements of piano technique?

2. Purpose of the Study

This study applies three different approaches to the teaching of specific elements of piano technique to three separate case studies. The piano technique principles² of three theorists were applied to students' repertoire in relation to these elements of piano technique. The three theorists chosen for the study are:

- 1) Tobias Matthay (1858-1945)
- 2) James Ching (1900-1961)
- 3) József Gát (1913-1967)

² For the purposes of this study, 'piano technique principles' denotes the systematic teaching and learning processes in piano technique.

Matthay, Ching and Gát were chosen for five reasons. Firstly, they are commonly respected by piano pedagogues, university academics and professional pianists. Secondly, their writings explore the different elements of piano technique in depth. Thirdly, they have differing approaches to the understanding and teaching of the elements of piano technique. Fourthly, as established piano teachers, each had more than thirty years of teaching experience; and lastly, the pedagogical writings published by these theorists have been influential. Books and dissertations on piano technique which have mentioned the works of these three pedagogues include George Kochevitsky *The Art of Piano Playing* (1967), Reginald Gerig *Famous Pianists and Their Technique* (1976), Marianne Uszler *The Well-Tempered Keyboard Teacher* (1999), Goldreich, W. *References to Psycho-Physical Relationships in Piano Technique as Reflected in Twentieth Century Writings about Piano Pedagogy* (Doctoral dissertation, 1969) and Rhoodie, H. *Piano Tuition for the Beginner: The Structuring and Teaching of the Basic Movements in Piano Playing* (Doctoral dissertation, 2002).

Two of the three theorists chosen, Tobias Matthay and James Ching, were prolific writers on piano pedagogy. Some examples of pedagogical publications by Matthay include: *The Act of Touch in all its Diversity* (1903), *Relaxation Studies in the Muscular Discriminations Required for Touch, Agility and Expression in Pianoforte Playing* (1908) and *The Forearm Rotation Principle in Pianoforte Playing* (1912). James Ching's publications include: *Piano Technique: Foundation Principles* (1934), *The Amateur Pianist's Companion* (1950), *New Graded Studies for Piano* (1952), and *James Ching Piano Primer* (1958). József Gát published one pedagogical book, namely, *The Technique of Piano Playing* (1954/1980)³.

Key publications written by the three theorists were selected for this study. These are:

Matthay

The Act of Touch in all its Diversity (1903)

The Visible and Invisible in Pianoforte Technique (1947)

Piano Fallacies of Today (1939)

³ This book was first published in 1954, but the references and page numbers cited in this research are according to the fifth edition published in 1980.

Ching

Piano Technique: Foundation Principles (1934)

Piano Playing: A Practical Method (1963)

The Amateur Pianist's Companion (1950)

On Teaching Piano Technique to Children (1962)

Gát

The Technique of Piano Playing (1980)

The criteria for the selection of the above publications were threefold. Firstly, the publications are representative of each theorist's approach to the teaching of piano technique; secondly, the writings are commonly respected by piano pedagogues, university academics and professional pianists; and thirdly, each of the publications explores piano technique in depth.

Three specific elements of piano technique have been identified. The selected elements are:

- 1) Tone⁴
- 2) Touch⁵
- 3) Relaxation⁶

These three elements of piano technique were chosen because they are commonly encountered difficulties in the piano technique of students. They are also commonly acknowledged by piano pedagogues, pre-tertiary and tertiary piano teachers and professional pianists as being significant elements of piano technique. As such, they are immutably linked with piano-based musical art. These elements are also associated with levels of technical proficiency.

Three case studies were undertaken in this research. Three pre-tertiary piano students were sourced, one student for each case study. Four criteria were used in the selection process: each student had studied the piano for at least five years; the selected

⁴ For the purposes of this study, the term 'tone' denotes the aesthetic quality of sound produced by a player depressing one or more key levers on a piano.

⁵ For the purposes of this study, the term 'touch' denotes the movement of the joints of the arm within the context of depressing one or more key levers on a piano.

⁶ For the purposes of this study, the term 'relaxation' denotes the release of unwanted muscle tension in piano playing.

piano students were aged between ten to twelve years; each of them studied with a different piano teacher; and both male and female students were represented.

Two works from the current repertoire of each of the three students were selected. These works were written during either the Classic⁷ or Romantic⁸ eras, and appeared in influential piano examination syllabi. They acted as catalysts for the teaching and learning of the three specific elements of piano technique.

The students' ability in playing the two chosen works in their repertoire was initially assessed in a performance given in front of three independent examiners, who are professional piano teachers and performers. After this assessment, each student was randomly assigned to learn the piano technique principles related to the three elements of tone, touch and relaxation, as expounded by Matthay, Ching, or Gát.

Thereafter, using the chosen repertoire, each student was taught the principles of tone, touch and relaxation espoused by the assigned theorist. Teaching took place within the context of a weekly forty-five to sixty minute lesson, over six weeks. The lesson duration was determined by the length of the two selected works, with longer works requiring a longer lesson time.

In the week after the completion of the teaching program⁹, each student was again assessed in relation to the three piano technique elements, by performing their same two works in front of the same three independent examiners. This was done in order to identify any changes in each student's performance ability in relation to the three elements.

Based upon these case studies, this study sought answers to the following research question:

- How effective are the piano technique principles related to the three elements of tone, touch and relaxation, as expounded by each of the three selected theorists, when applied in a specific learning situation?

3. Significance of the Study

This study is significant for several reasons: firstly, it explores three different approaches to the teaching of the piano technique principles of tone, touch and relaxation. Secondly, it identifies changes in relation to tone, touch and relaxation in

⁷ 'Classic era' refers to the period from the 1750s to the early 1820s.

⁸ 'Romantic era' refers to the period from the 1830s to the 1900s.

⁹ The 'teaching program' in this study denotes the six weeks of teaching the approach of an assigned theorist.

students' abilities after six weeks of lessons. Finally, to the best of the author's knowledge, no case studies have been undertaken in which the teaching of tone, touch and relaxation as expounded by Matthay, Ching and Gát, have been explored.

CHAPTER 2

REVIEW OF LITERATURE RELATING TO MATTHAY, CHING AND GAT

Although some piano teachers may recognise the importance of teaching piano technique to their students, they may be 'ignorant of...basic principles' as well as the different approaches to teaching piano technique that exist (Apel, 1945, p. 580). Lister-Sink (1994) was of the opinion that:

Many pianists have had little technical training at all or...[have been] taught as many technical approaches as they [have] had teachers. Sometimes these techniques...[are] blatantly contradictory and...[leave] students to resolve the relative merits of each. (p. 29)

This lack of formal pedagogical training may be attributed to the fact that 'there are still comparatively few institutions which offer specified degrees in instrument pedagogy' (Bruhn, 1990, p. 13). As such, some piano teachers without formal training may lack knowledge of the literature relating to piano technique.

Such literature is vast and numerous books have been written on the teaching and learning of piano technique. This study is concerned with a teaching program based on the piano technique principles of three twentieth century piano technique theorists, Tobias Matthay, James Ching and József Gát. Their writings on piano technique will be explored in this chapter. Additionally, the literature associated with the development of piano technique pedagogy¹⁰ is examined.

1 The Development of Piano Technique Pedagogy

The earliest keyboard music dates from around 1320. The earliest literary references to stringed keyboard instruments date from the 1360s and 1380s. Evidence indicates that keyboard instruments with a rebounding striking mechanism existed during the early fifteenth century. In 1440 Arnaut of Zwolle described such an instrument, calling it the '*dulce melos*', however,

... the *dulce melos* was neither well known nor widely used,... the striking action was perhaps unfamiliar to those outside Arnaut's milieu.¹¹

¹⁰ For the purposes of this study, the term 'piano technique pedagogy' is defined as the teaching and learning of the physical movements associated with piano playing.

¹¹ Stewart Pollens, *The Early Pianoforte* (Cambridge: Cambridge University Press, 1995), p. 26.

Music written specifically for the piano existed from the mid-eighteenth century¹², but the first pedagogical treatise written exclusively for the piano is Johann Peter Milchmeyer *Die wahre Art das Pianoforte zu spielen*¹³ of 1797. Milchmeyer dealt with the elements of interpretation as well as technique, for example, he dealt with the position of the body, arm, hand and fingers, fingering, ornamentation, and musical expression.

A prolific number of books and articles were subsequently written on the subject of piano technique. Such examples include Muzio Clementi *Introduction to the Art of Playing on the Pianoforte* (1801), Johann Nepomuk Hummel *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte* (1820), and Carl Czerny *Theoretical and Practical Pianoforte School* Op. 500 (1839). Books such as Reginald Gerig *Famous Pianists and Their Piano Technique* (1976), and Marienne Uszler *The Well-Tempered Keyboard Teacher* (1991) provide examinations of the historical development of piano technique literature.

There are a myriad different approaches and methods in piano technique pedagogy. However, one can find several tendencies and similarities, and group them chronologically. George Kochevitsky in *The Art of Piano Playing* (1967) divided the historical development of piano technique theories into three broad periods. These are: the 'finger school' (p. 3), the 'anatomic-physiological school' (p. 9), and 'twentieth century trends' (p. 14) in piano technique pedagogy whereby pedagogues express their own views on the most effective ways of teaching piano technique based on the interrelationship between the aural, rhythmic and technical aspects of piano playing. In other words, the twentieth century approach is based more on musical intelligence, and not just physical attributes. Kochevitsky's 'finger school' encapsulates the technique used in playing the harpsichord and clavichord.

Max Camp, in *Developing Piano Performance* (1981) agreed with Kochevitsky on classifying the development of piano technique pedagogy into the early keyboard instruction of the finger school, the nineteenth century approach of combining arm and finger technique, and the twentieth century new ideas that include the mind and ear in piano technique pedagogy.

¹² Lodovico Giustini (1685-1743) wrote the 12 *Sonate da cimbalo di piano e forte volgarmente di martelletti*, Op. 1, published in 1732, specifically for the piano.

¹³ Johann Peter Milchmeyer, *Die wahre Art das Pianoforte zu spielen* (Dresden: Carl Christian Meinhold, 1797), English trans. by Robert Rhein as Johann Peter Milchmeyer's *Die wahre Art das Pianoforte zu spielen*: an annotated translation, unpublished Doctoral Dissertation, The University of Nebraska, Lincoln (Ann Arbor: UMI, 1993).

Several doctoral dissertations on piano technique, such as Roger Boardman (1954) *A History of Teaching Piano Technic* [sic] and Julie Knerr (2006) *Strategies in the Formation of Piano Technique in Elementary Level Piano Students*, show similar consensus. Boardman classified the development of piano technique pedagogy into three categories, the first two being finger technique and the use of the arm. Unlike Kochevitsky and Camp, he condensed the twentieth century ideas into 'weight and relaxation'. Boardman (1954) concluded that piano technique pedagogy evolved from the use of fingers only, to the use of the entire body (highlighting the importance of the brain) which was, in other words, the concept of musical intelligence (pp. 218-219).

Thus, according to researchers such as Kochevitsky, Camp, and Knerr, the first broad period in the history of piano technique pedagogy lasted from the second half of the eighteenth century to approximately the first half of the nineteenth century, and was known as the finger school. The second period emphasised the participation of the arm and its weight, as well as relaxation, and came about during the second half of the nineteenth century, overlapping into the first half of the twentieth century. In the third period, the latter half of the twentieth century, piano technique pedagogues linked technical concepts with analyses of physiology and anatomy, and the role of the central nervous system in piano technique.

1.1 The Finger School and its Proponents

In the first period, the emphasis was on finger technique, as espoused by composers who were writing for the forerunners of the modern piano, namely the harpsichord and clavichord. Predominant in the development of theories concerning keyboard playing was the composer and music theorist Carl Philipp Emanuel Bach, whose famous treatise, *Essay on the True Art of Playing Keyboard Instruments*, was first published in 1753 and is still in print today. Bach's *Essay* stimulated wide interest and was, along with treatises by Johann Joachim Quantz on the flute (1752) and by Leopold Mozart on the violin (1756), the most important work of practical music instruction of the second half of the eighteenth century¹⁴.

The publication of his *Essay* made Bach the most renowned authority of the eighteenth century on keyboard pedagogy. Both Haydn and Beethoven studied it and used it in their own teaching. Bach's theory was that clarity could be achieved through uniform pressure of the fingers, and although one should not expect the same level of

¹⁴ Sadie, S. (Ed), *The New Grove Dictionary of Music and Musicians* (Vol.2, 2nd ed.) (London: Macmillan Publishers Ltd, 2001), p. 394.

clarity from a weaker finger as from a stronger finger, one must work to achieve a uniform strength in all fingers (Bach, 1753, p. 69).

Early keyboard methods such as C.P.E. Bach's *Essay*, Muzio Clementi *Introduction to the Art of Playing on the Pianoforte* (1801), Johann Nepomuk Hummel *A Complete Theoretical and Practical Course of Instructions on the Art of Playing the Piano Forte* (1820), and Carl Czerny *Theoretical and Practical Pianoforte School* (1839), addressed as their primary focus, the proper position of the body and hand as well as pure finger movement.

In Part One (1753) of his *Essay*, C.P.E. Bach was more concerned about correct fingering, artistic embellishments, and good performance than the mechanical aspects of playing. In playing a keyboard instrument, Bach noted that:

The fingers should be arched, and the muscles relaxed. The less these two conditions are satisfied, the more attention should be given to them. Stiffness hampers all movement, above all the constantly required rapid extension and contraction of the hands. All stretches, the omission of certain fingers, even the indispensable crossing of the fingers and turning of the thumb demand this elastic ability. (1753/1951, pp. 42-43)

In Part Two (1762), Bach dealt with performance issues such as thorough bass, accompaniment and improvisation. Like C.P.E. Bach, Clementi's keyboard method emphasised strength in all the fingers. For this reason he recommended that the pupil's hand to be kept immobile and the fingers raised high and brought down on the keys with great power (Kochevitsky, 1967, p. 3). Czerny's treatise (1839), in three volumes, emphasised to the pupil:

all the means necessary to form and cultivate the mechanical volubility of his fingers, and to acquire properties indispensable to a pianist. These properties include purity and precision in playing; firmness in striking the keys and the power of producing a fine full tone; and correct fingering. (Czerny, 1839, vol. 3, p. 1)

The finger school resulted from the technique used in playing the harpsichord and clavichord. Since these instruments had a light action, and more importantly, since extra weight made little difference to the sound produced, finger strength was sufficient. Thus, early pianoforte technique was entirely dependent on the agility of the fingers. To emphasise the use of the fingers, Clementi (1801) specified:

The hand and arm should be held in an horizontal position; neither depressing nor raising the wrist...The fingers and thumb should be placed over the keys, always ready to strike; bending the fingers in, more or less in proportion to their length. All unnecessary motion must be avoided. Let every note be played even, in regard to time; and with equal strength. (pp. 14-15)

Secondly, long and repetitive practice was common in the finger school. Czerny (1839) stated:

To insure sufficient volubility of finger to execute great difficulties with a light and delicate touch, the Pupil must practise thoroughly and in every degree of movement, not only on all the Scale Exercises, but also all the examples on fingering which are contained in the second part of this School, both with brilliancy and energy, and with lightness and delicacy. (vol. 3 p. 1)

On the same note, Czerny also stipulated that the technical exercises given in *Theoretical* (1839) were each to be repeated twenty times and also to be practised in different keys (vol. 3, p. 4).

From an anatomical point of view, while repeated practice and training of the fingers would inevitably increase finger strength and the power of the finger stroke, nevertheless overdoing it would cause stiffness in the upper arm, hand and wrist, leading to injury.

Recent studies on pianists' injuries have shown that pianists do develop Performance Related Musculoskeletal Disorder or PRMD due to long hours of practising. These include symptoms such as pain, weakness, lack of control and numbness, which impede the pianist's ability to play at the optimal level. A study conducted by Bragge et al (2007) investigating PRMDs identifies the extent of the problems encountered by pianists who, driven by the need to achieve and maintain high performance levels, practised relentlessly through pain and fatigue. A subject with PRMD Bragge interviewed lamented, '... I just kept going through the pain and I shouldn't have....I just worked through the pain...'. Another pianist said, '...you, become very fatigued, but then you need to practice'. (Bragge, 2008, p. 4)

The teacher was regarded as the absolute authority during the period of the finger school, as according to Czerny:

The pupil has far greater confidence and esteem for his teacher, when he has reason to consider him at once as a clever, practical artist. The great practical artist is, in fact, a mighty sorcerer; the whole world is open to him; he conquers every heart. In his life time wondered at, honoured, rewarded, he may securely trust, that posterity will not forget him. (1839, vol. 3, p. 130)

As the pianoforte developed in its range, touch, action, and sound characteristics, players were drawn to seek ways to overcome the resistance of the heavier action — participation of the arms became necessary. The evolution of the piano in design, mechanisms, dynamic range and expressive potential led to the

development of new schools of thought on piano technique and increased demands on piano players.

1.2 Arm Weight and Relaxation – Towards New Trends of Thought

Throughout the nineteenth century, piano teachers and players were confronted with the demands of the heavier action of the piano, in which the strings were extended to produce more sound and the iron frame replaced the wooden frame to hold multiple strings in a stable condition. The expanding horizon of sounds and greater emphasis on volume, speed and expressiveness coming from the compositions of Beethoven, Chopin, Schumann and Liszt demanded greater advances in technical facility, which included the use of the arms and wrists in addition to finger technique. As a result, piano teachers began to emphasise musical awareness and imagination. These approaches culminated in the teachings of Ludwig Deppe (1828-1890).

Deppe was acclaimed as the first pedagogue to combine both arm and finger technique. Refusing to isolate a finger-only technique, Deppe's system ensured that the arms, wrists and fingers worked in cooperation as a complete playing apparatus (Kochevitsky, 1967, p. 8). This playing apparatus required the rotation of the forearm and upper arm, and a supple and flexible wrist, with the fingers caressing the keys instead of striking them. Deppe did not publish any book on his approach to technique, but he wrote and published an article entitled *Arm Ailments of the Pianist* in 1885, noting the lack of instruction to help the student overcome strains and tension. He emphasised the importance of strengthening the muscles of the arms and shoulders, and a tone production through the weight of the hand with quiet, relaxed fingers (Gerig, 1976, p. 254-255). Deppe's teaching revolutionised piano performance, and was a vital and fresh approach representing a change from the old finger school.

Following Deppe's teachings on the use of arm and hand weight in piano technique, many pedagogues at the turn of the 20th century developed theories involving the whole arm apparatus. Among such pedagogues was Rudolf Maria Breithaupt (1873-1945), a student of Deppe's. Breithaupt continued in the tradition of Deppe in his book *Natural Piano Technique* (1905), in which he criticised excessive tension from the holding of the hands and arms, and proclaimed that the most important principle of technique was a loose and heavy arm (Kochevitsky, 1967, p. 9). His principle of relaxation of the whole playing apparatus which included substituting arm movement for finger movement, contradicts the basic anatomy of muscle movement, which

requires a certain amount of finger exertion and movement. This disjunct led to the relaxation school of thought, championed by Tobias Matthay (1858-1945).

Matthay cautioned against the mechanical drilling of the old school approach to piano technique. He warned:

To sound the notes of a piece through as a mere physical exercise, is not only useless but positively harmful musically; and this applies as much to the practice of studies and techniques as to that of pieces, for in all repetitions, we are always forming or fixing habits – musical ones and technical ones... (1912, p. 5)¹⁵

1.3 Contemporary Thoughts and Ideas and 20th Century Technique Pedagogues

Further new ideas in piano technique instruction evolved in the twentieth century. No longer was there a blind acceptance of the teachings of the finger school or its antithesis the relaxation school, but pedagogues approached the development of piano technique in relation to auditory and rhythmic understanding, together with an analysis of physiology and the body's central nervous system, the mechanics of the arm and hand, including injury prevention. Many piano technique pedagogues began to analyse their approaches in relation to scientific principles.

Thomas Fielden (1883-1974) emphasised the need for scientific knowledge of physiology and the muscular system in the teaching of piano technique. According to Fielden (1949), the mental, nervous, and muscular factors were interconnected and should therefore be developed concurrently. The brain conceived the movement, the nerves acted to communicate to the muscles concerned, and the muscles then executed the movement. The central nervous system thus formed the basis of most of our activity. Fielden was of the opinion that:

Knowledge of the muscular processes is desirable and a deep study of the marvellous mechanism of the hands and arms: and the goal should be the mental and nervous control of all the movements of which these wonderful implements are capable. (1949, p. 10)

Otto Ortmann (1889-1979) was one of the most influential writers on piano technique in the twentieth century. His most famous work *The Physiological Mechanics of Piano Technique* (1929) explores aspects of piano technique in relation to physiology, anatomy, physics and acoustics. In his book, he examined the skeletal and muscle systems, as well as the function of the torso, arms, hands and fingers in relation

¹⁵ Tobias Matthay, *The Forearm Rotation Principle in Pianoforte Playing* (Boston: Boston Music Co., 1912)

to piano playing, tension and relaxation, and studied the balance between variations of force produced at the key surface.

Based on his experiments, Ortmann pointed out the relationship between action and reaction at the keyboard, and concluded that excessive relaxation would lead to a lack of muscular coordination. A certain level of tension was needed for each change in speed, movement and force at the keyboard. He described:

The force exerted upon the piano-key is not simply the weight of a free arm, but that resulting from an active contraction of muscles of fingers, hand, wrist, and elbow, plus the action of gravity. (Ortmann, 1929, p. 130)

Contrary to the ideas put forth by the relaxation school, Ortmann constructed mechanical arms in his experiments to illustrate the necessity of some muscular tension and fixation in order to hold the shoulder, arm and hand in playing position. He concluded that muscular tension was also present when using arm weight by ‘dropping’ the arm on the keyboard or moving the arm laterally across the keyboard.

In his research, Ortmann disproved many practices of the older methods such as the finger school and the relaxation school. He emphasised the importance of coordination of the fingers, hands, wrists and arms, and the understanding of the muscle and skeletal systems, in order to create maximum performance, avoid wasted time during practice, and prevent injuries. According to Ortmann:

Knowing the location of a muscle and its various angles of pull will readily prevent the assignment of impossible mechanical conditions; it will make possible correct muscular drill; it will aid in distinguishing normal muscular fatigue from the fatigue of in-coordination; and it will economise in practice time and method. (1929, p. 377)

The prevailing ideas at the time of Ortmann’s writings centred on weight and relaxation concepts. Thus, it was no surprise that Ortmann’s experiments, observations and conclusions which viewed the pianist’s body in a rational and scientific way were controversial, as they refuted the subjective pseudo-physiological findings of the relaxation school.

Ortmann’s theories had ramifications on the writings of James Ching (1900-1961), a former pupil of Matthay, who lodged denunciations against Matthay’s principles on the grounds that Matthay was not able to relieve him of a persistent cramp in his forearm (Ching, 1963, p. 270). Ching’s 1934 book *Piano Technique: Foundation Principles* explicitly refuted Matthay and his relaxation theories. Ching’s own views, based on scientific principles, mirrored those of Ortmann’s, and his book offers graphs,

and other symbols based on the science of physics. Like Ortmann, Ching made a clear distinction between art and technique, with the idea that:

The purely technical aspects of piano playing, the ability to make the bodily movements involved in operating the piano keys efficiently is not to be gained by any reference to any questions of art, but only by reference to applied science, to the established facts of psychology, physiology and mechanics. (1946/1963, p. v)

Like Fielden and Ortmann, Ching invoked the authority of science to refute Matthay and the relaxation school. In his book *Piano Playing* (1963), based on a series of lectures given in London during 1944-1945, Ching alleged that relaxation was best employed only in limited doses. His view of relaxation was:

It is always desirable, and often vital for success, that complete joint relaxation should be brought into operation at every joint (in every passage and piece) whenever the presence of a note of long value, or that of a rest, provides a long enough period of inactivity for complete relaxation at all the joints to be temporarily brought into operation. Now the shortest time in which this complete relaxation can be brought into operation (and followed by the necessary tension again) is approximately a second. (Ching, 1963, p. 139)

Other than focusing on scientific principles as the basis of his technical theories, Ching was also captivated by psychoanalysis. In his teaching, he frequently sought to not only instruct his pupils on Freudian psychology, but to treat them through psychotherapy. Ching (1946/1963) presented us with vivid case studies as evidence of the efficacy of his approach. He was of the view that 'the technique of psychoanalysis can eliminate the "extra-musical" difficulties of piano playing in probably three out of four cases' (p. 334).

Another twentieth century theorist who looked for solutions to pianistic problems in the realm of intellect and psychology was József Gát (1913-1967). His pedagogical ideas are summed up in one work, *The Technique of Piano Playing* (1954/1980). His physiological theory was not unlike the theories of Czerny and the finger school, in which he discussed correct innervations¹⁶ of the movements required in piano playing.

The 'swing stroke' formed the basis of Gát's physical approach to piano playing, and this branched further into the direct and indirect swing stroke (Gát, 1980, p. 25). If the finger was in contact with the key at the beginning of the movement, then the swing stroke was called 'direct'. The 'indirect' swing stroke meant that the finger was not on

¹⁶ Gát used the term 'innervations' throughout his book to mean movements of the muscles stimulated by nerves.

the surface of the key when the stroke movement begins. Part of Gát's book addresses the physiological aspect of piano technique, analysing the function of the various joints, posture, and the use of the hand and arm. After establishing this aspect of technique, the next section of Gát's book explores the body's inner response to music and the instrument, that is, the intellectual approach.

Unlike Ching and Ortmann, Gát did not isolate technique from music. According to Gát, it was important to create musical meaning, emotional responses and a strong inner aural perception in a good performance. In line with C.P.E. Bach's¹⁷ concept of performance, Gát believed:

The deep interrelationships and truths revealed by a Bach fugue or a Beethoven sonata will be well reproduced only by a pianist who fully abandons himself to the emotional content of the piece he is playing. (Gát, 1980, p. 77)

In Chapter 8 of his book where Gát discussed practice methods, he warned against excessive repetition (quite unlike the finger school), which he said 'easily diminish the intensity of the musical concept'. (p. 99) Furthermore, pianists who believed their playing will be more effective if they played with ardour and emotional intensity all the time were committing a grave error. The degree of emotion must come from the mood of the piece itself. Gát was of the opinion that:

If, e.g. [sic], a scherzo of Beethoven suggests to us a young peasant dancing with his sweetheart, why does it need any strained, ardent performing? Or, if the music is intended to express a perfect calmness, or even overcoming the problems of life, why does it require any sensational, thrilling type of performance (1980, p. 101)?

Gát was also a strong believer in the efficacy of calisthenics, or gymnastic exercises away from the piano, to 'facilitate correct innervation of the movements required in piano playing' (p. 249). The use of gymnastic exercises could be traced as far back as Francois Couperin (1668-1733). In his treatise entitled *The Art of Playing the Harpsichord*¹⁸ (1716), Couperin proposed:

Before sitting down at the harpsichord, they should loosen or have their fingers loosened by someone; that is to say, to pull or to have someone pull their fingers in all directions, so that besides an understanding of movement, they will have greater freedom of movement. (p. 31)

¹⁷ C.P.E. Bach, in Part One of *Essay on the True Art of Playing Keyboard Instruments*, wrote that good performance comprises "the ability through singing or playing to make the ear conscious of the true content and affect of a composition." (1753/1951, p. 148). It was a commonly encountered practice during the late 18th century to compose and perform works in the *Empfindsamer* style, which is essentially a style of music characterized by a range of dramatic and emotional changes.

¹⁸ Francois Couperin, *The Art of Playing the Harpsichord* (New York: Alfred Publishing, 1974). (Original work published 1716).

In his writings, Gát adopted many of the teaching theories and philosophies of past pedagogues, showing that these could still be applied in the twentieth century context of piano teaching.

Contemporary technical thoughts in the twentieth century were further affected by the introduction of avant-garde and innovative music, which at times demanded the fingers to depress as many keys, or using as much body strength, as possible. Composers such as Henry Cowell (1897-1965) and John Cage (1912-1992) explored possibilities of playing on the inside of the piano and using a prepared piano inserted with nuts and bolts on the strings. All these ideas made new demands on piano technique and its theories. Late twentieth century piano technique pedagogues such as Gyorgy Sandor (1981), Seymour Fink (2002) and Alan Fraser (2003) emphasised body movement and coordination in the teaching of piano technique. Sandor defined technique as ‘...the sum total of organized motions executed by the performer’ (1981, p. ix). Fink’s notion of piano technique was:

any purposeful movement for musical ends – large or small, fast or slow, recurring or infrequent – any movement that enhances the end result.¹⁹ (2002, p. 33)

Fraser went further to combine elements of the Feldenkrais²⁰ method and eastern martial arts to piano playing, examining every detail of movement required in playing the piano to minimize the risk of injury.

Although the theories of the different schools of thought vary, superseding these differences are the general goals of playing with ease, self-control and efficient coordination, and ‘[seeking] the lowest level of tension that is possible short of [jeopardising] the musical outcome’ (Reubart, 1985, p. 33). Reubart further summed up by saying, ‘The ideal condition is when muscular tension and relaxation fulfil the needs of the musical conception exactly’ (1985, p. 139). Out of the many methods and approaches traced in the history of piano technique pedagogy, the contrasting ideas and theories of three different piano technique pedagogues in the twentieth century, namely, Matthay, Ching, and Gát, were chosen for this study.

¹⁹ Seymour Fink, *Biomechanics of Healthy Pianistic Movement*. In K. Kropff (Ed.), *A Symposium for Pianists and Teachers: Strategies to Develop the Mind and Body for Optimal Performance* (2002).

²⁰ The Feldenkrais Method is a somatic education developed by Moshé Feldenkrais (1904-1984) to improve one’s natural ability to move, think and feel. It aims to promote and refine self-awareness, in order to reduce pain and limitations in movement.

2. Tobias Matthay

An influential writer and teacher in piano technique pedagogy, Tobias Matthay (1858-1945) was usually associated with the relaxation school as his writings emphasised arm weight and relaxation techniques. His stress was on playing with beautiful sound, ease in execution, while integrating technique and interpretation. His contributions to the subject of piano technique included a prolific number of publications from 1903 to 1947. This ranges from his first book entitled *The Act of Touch in all its Diversity* (1903), the synthesis of ideas and changes made to this first book written in *The Visible and Invisible in Pianoforte Technique* (1947), the principles of technique for the young beginner in *The Child's First Steps in Pianoforte Playing* (1912), to the more philosophical *Musical Interpretation* (1913), in which ideas on musical interpretation were juxtaposed with technique. Most of Matthay's books are by no means easy to read as his explanations are wordy and sometimes confusing. His follower Ambrose Coviello, consequently expounded Matthay's theories in *The Act of Touch* into a small succinct volume entitled *What Matthay Meant* (1948). In part one of his writings, Coviello justified the need for this book when he said:

It arises from the fact that Matthay, although a great teacher was a confusing writer – so confusing that students, eager to learn what an obviously fine teacher had to impart, despairingly gave up the attempt to get it from his writings. Who is to blame them? The interminable repetitions, recapitulations, summaries, footnotes, all with a change of emphasis and as often as not with new names for the same thing, led enquirers into a maze from which only the clearest brain equipped with dogged perseverance, could extricate itself. (Coviello, 1948, p. 1)

Matthay's philosophy of technique emphasised the training of musical imagination and musical judgement as 'technique and music are inseparable' (Matthay, 1947, p. 3). One must have an intellectual appreciation of music itself, as technique, according to Matthay, was the means to express and communicate music (1947, p. 3). Thus, every sound produced on the piano must have a definite tonal and rhythmic purpose (Matthay, 1947, p. 5).

In *The Act of Touch* (1903), Matthay considered his system of technique to be based on scientific principles through topics such as species of touch, finger attitude and methods of key depression. He also discussed main instrumental facts such as the mechanism of the piano and the physical nature of sound. All these elements formed the basis of tone production, which was the whole foundation of piano playing. The learning of the physical and mechanical laws of playing and the relegation of these laws to the subconscious would then enable the pianist to play, through sensations, musically

and purposefully (Matthay, 1903, p. 24). However, Matthay's scientific principles were not based on experiments or scientific research, but on his own understanding of the instrumental action and the muscular action.

Matthay's principle of piano technique emphasised changes in the exertion and relaxation of the whole playing apparatus (Matthay, 1903, p. 27), which came about through bodily sensations. It was through knowing these sensations and remembering them that the pianist could acquire the right habits and teach others to acquire them as well. According to Matthay, 'a systematic teaching and acquisition of these muscular discriminations should form the first steps in learning to play' (Matthay, 1903, p. 227). A good teacher of technique was not only endowed with the ability to analyse and reason mechanically, but also understood how it felt physically to play correctly or incorrectly. A good teacher should analyse a piece of music with the student and communicate the procedure of producing a good tone, how to treat the keys and teach the correct usage of muscles to the student, rather than leaving the student to discover for himself or herself (Matthay, 1903, p. 2). Only through this rational way of piano teaching can the student gain a proper technique (Matthay, 1903, p. 6).

2.1 Tone

In *The Act of Touch*, Matthay divided the education of tone production at the piano into two components: instrumental education and muscular education. In instrumental education, the pianist was to understand how the piano worked and how it responded to his/her playing. Thus, the understanding of the treatment of keys was important to produce the desired tone. The keys acted as tools for transmitting movement to the strings (1903, p. 79), and the pianist should try to play the strings using the keys. Such a technique meant that the keys should be felt and should not be hit or struck to produce a sound (1903, p. 90). The pianist should only think of the hammer end of the keys as a tool to move the strings. Thus, the key should be felt and weighed before being depressed, and then pressure should be used as an 'added impetus' to depress the key (1947, p. 18).

In muscular education, the pianist must acquire muscular conditions of activity and relaxation for the purpose of different key-treatments since differences in key-treatments were necessary for producing different sounds (Matthay, 1903, p. 23). The quality and quantity of every sound, whether legato or staccato, fast or slow, must all rely on the muscular conditions of the pianist (Matthay, 1903, p. 120). If a pianist had

'stiff' fingers, it would affect his or her agility at the piano, which would in turn affect the legato and staccato, timing and rhythm, leading to a bad tone.

Matthay paid great attention to the aspect of key-treatment, that is, 'the manner of attacking and using the pianoforte-key' (1903, p.78) by analysing key resistance. Sensing the resistance of a key during descent enabled the pianist to execute the right amount of force required to play that key. Since the amount of force required varies on different instruments and at various points of an instrument, the pianist should listen to the beginning of each sound so that the correct amount of force may be applied (Matthay, 1947, p. 13).

Matthay's idea regarding key-resistance was that 'each key should be weighed before playing' in order to sense how much resistance was needed to depress the key (1903, p. 126). The faster the pianist moved the key, the greater the resistance would be. Matthay (1947, p. 13) recommended that the pianist should therefore 'feel the key' before each descent, and never attempt to hit or strike the key. Following the feeling of the key, the fingertip should then exert an active pressure known as 'added impetus' (1903, p. 138), that increases during key descent. Once the key had been depressed, it would not be possible to modify the sound. According to Matthay, feeling the key using our muscular sense, and listening for the beginning of each sound to time and apply the force in key descent, were both imperative in musical expression. Matthay (1947, p. 7) wrote:

Good tone, ease in production, and control of tone, can only be obtained by gradually pressing the key into motion. Only in this way can you obtain perfect control over tone, good "singing" tone, and good *quality* of tone.

However, this feeling of the resistance of the key, based on my experience in fifteen years of piano teaching to pre-tertiary students, may be applicable in a slow passage of music, but would not be practical in fast tempo as there would be no time to sense the weight of the key when the fingers are moving quickly.

2.2 Touch

Matthay (1903) offered directions for the proper coordination of the arm, hand and fingers according to key-resistance. He used terminology such as 'species of touch' (p. 106) and 'finger attitudes' (p. 109) to describe various touch movements in his desire to be thorough and systematic in his explanations, and to emphasise that all touch was derived from the three muscular components of arm, hand and fingers. The added

impetus required during key-descent was provided using three different touch forms (Matthay, 1903, p. 215):

- 1) first species — finger activity alone, with loose-lying hand and self-supported arm,
- 2) second species — finger activity with hand exertion behind it, and self-supported arm,
- 3) third species — arm touch (relaxed arm weight) behind hand and finger activities.

In most forms of playing, all three units of finger, hand and arm were involved to a degree. The difference between the three touch forms was dependent on timing and the degree of intensity of tone to be produced. The first species involved exertions of the individual fingers, working in conjunction with a hovering self-supported arm that carried the hand over the keys (Matthay, 1903, p. 222). In this species, the finger activity was greater than that of the hand and arm, and therefore enabled the greatest amount of speed and agility, with the possibility of a brilliant tone depending on whether the fingers were bent or flat. The first species was thus ideal for *leggiero* passages or for the sustaining of notes. Matthay (1947, p. 74) specified two forms of finger use during key descent. The first was the 'clinging finger' action that folds in a grasping motion, which was the most commonly used. The second was the 'bent finger' or thrusting action. The 'clinging finger attitude' was used mainly for *legato* and *cantabile* passages, while the 'bent finger attitude' was used for fast and brilliant passages.

The first species of touch was commonly used with the bent finger attitude for fast passages which required agility of the fingers. The fingers here worked in conjunction with the hand and the arm for tone production, as, according to Matthay (1903, p. 172), there was no such thing as finger exertion alone, but 'it is the sum of the arm, hand and finger conditions that determines (the type of) tone (produced)'. The movement of the fingers remained visible while the hand rested passively on the keys and the self-supported arm floated over the keyboard, carrying the passive-lying hand.

Matthay explained that there was always an action and reaction in tone production when the fingertip, which was a moving lever, was exerted on a key, and therefore an equal reaction against the base to which the fingertip was attached (1903, p. 80). This base, created by the passive-lying hand, should be stable enough to counter the reaction of the finger. Otherwise, the base itself would be displaced, thus affecting

speed and *legato* in a faster tempo. From my experience, the hand is not able to lie passively on the keys while the fingers play. Otherwise the tone produced will be invariably weak as the fingers do not have sufficient hand support. Ortmann's theory that 'the finger joints are most decidedly not relaxed, and the wrist (and hand) only partially so'²¹, is in my opinion, more plausible. However, there should always be a balance between the amount of passiveness and rigidity.

The second species of touch consisted of hand exertion acting in conjunction with the fingers, while the arm remained self-supported. The combined action of the hand and fingers depress the keys, with the force exerted against the self-supported arm. Here the hand was loose-lying, and the arm served to carry the hand and fingers across the keyboard. As Matthay wrote in *The Act of Touch*, the second species was more important than the first, since it offered a greater range of tone using both fingers and hand, whereas the first species produced less variety of tone by using fingers only.

All three muscular components of fingers, hand and arm were employed in the third species known as the arm touch. This species used weight as a basis (Matthay, 1947, p. 42). The muscles worked in response to the released weight, and they also initiated the weight to be released. The body (in particular, the shoulders and arms) served as the basis of the weight release. This species therefore offered more possibilities in tone quality and tone quantity, but with less agility than the other two touch forms. In this 'whole arm weight touch', the weight was not dropped uncontrolled onto the keys like a 'freefall' (Matthay, 1947, p. 40). Matthay agreed that there should be control over the use of arm weight in order to feel the force needed for a required tone. In this instance, the finger and hand were exerted together with the arm onto the key (Matthay, 1903, p.161).

The third species of touch was recommended as the first touch form to be taught to students as, according to Matthay, it was the easiest muscular combination to master. There were several forms of arm touch. The 'forearm weight touch' was used for light and delicate musical effects as the weight of the forearm was set free as a basis for the exertions of the finger and hand. This release of the forearm was not necessarily manifested as a fall or movement, but was left unsupported and the weight was countered by the action of the hand and fingers (Matthay, 1947, p. 31).

Next, the 'whole arm weight touch' was used to produce louder effects and a good singing or *cantabile* tone. It gave a greater stability for the actions of the hand and

²¹ Otto Ortmann, *The Physiological Mechanics of Piano Technique* (New York: E.P. Dutton & Co., Inc, 1962)

fingers. For use in single notes and chords, this touch was capable of all varieties of tone quantity and quality. However, its disadvantage was that agility would be hampered because the arm weight was to be released for each note played and then taken up again after each lapse (Matthay, 1947, p. 33).

The next form of weight touch was the 'upper arm weight with forearm down force'. This form of weight touch was used for the loudest and fullest tone, as in addition to the weight-release of the whole arm, the forearm added a downward exertion to it (Matthay, 1947, p. 35).

Given that there are many touch forms in Matthay's approach to piano technique, which touch form to use depends on the amount of tone required, which in turn depends on the amount of energy used in the employment of the three muscular components of fingers, hands and arms fully or minimally.

A pedagogue who has argued against Matthay's notion of weight release of the whole arm is Master teacher and Emeritus Professor Larry Sitsky of the Australian National University School of Music, who has his own view of Matthay's theories of relaxation and weight release. In his lecture²² on piano technique, Sitsky disputed Matthay's 'famous fairy tale of weight release and relaxation... a sickness that has plagued piano teaching for years' (Sitsky, 1977, p. 6), by saying:

Matthay says it is impossible to produce good tone with tensed muscles....tone has very little to do with the conditions of your joints. (There is some truth only in the fact that improper control of tension produces in turn improper control of sound). The real fact is that only with tension can any sound be produced. (Sitsky, 1977, p. 6)

In terms of weight release, Sitsky (1977) pointed out that our arms weigh a certain amount and thus to move them around, we need a certain amount of tension. Since we cannot alter the weight of our arms, 'the sensible thing to do is to forget about it and get on with playing the piano, before we go on to diets' (p. 7).

Matthay's principle of weight release and relaxation did not condone playing without any tension at all. According to Matthay, by dropping your arm uncontrolled upon the key, you cannot feel or judge how much force was required to produce a particular tone (Matthay, 1947, p. 40). Matthay called this the 'free-fall of arm fallacy' (1947, p. 39). My understanding of Matthay's notion of weight release is that it should be a matter of control — when, what and how much to exert or relax, as the key

²² Larry Sitsky's lecture notes from his teaching module on piano technique presented in 1977, were given to this author's supervisor, who was a student of Sitsky's. This author, in turn, acquired the notes from her supervisor for reference.

requires. The effort or tension that is needed to play a key should only last a split second, and release should come immediately, allowing the key to push the finger up and letting the arm float.²³ The forearm is therefore released in sympathy with the fingers, helping to direct the weight of the hand to the finger being used, and contributing to the sense of freedom and control. This principle is particularly helpful to students who suffer from tension problems in piano playing.

Besides the physiological movements associated with the various touch forms, Matthey also emphasised the importance of the forearm rotation element (Matthey, 1947, p. 30), without which one could not play the piano as the hand would stand upright on the keyboard. Indignant that he was often misrepresented in this area, in particular by his former student James Ching, Matthey explained that the forearm did not rotate itself, but that one would rotate the forearm at the wrist end (Matthey, 1932/1947, p. 53) in order to help the whole playing apparatus move efficiently across the keyboard. Based upon my consultation with Professor Stephen Siek of Wittenberg University, USA, and with Mr Donald Hageman, teachers of Matthey's principles and members of the American Matthey Association, it is my understanding that Matthey's 'rotatory movements' are essential in helping the pianist manoeuvre the hand along the keyboard, enabling free and comfortable playing, and therefore easing tension.

2.3 Relaxation

In the chapter on The Gospel of Relaxation in Matthey's *Piano Fallacies of Today* (1939), he explained:

relaxation does not lead to flabbiness...it does not imply the omission (neither fully nor partly) of the exertions needed in all playing, but it simply means the omission (so far as possible) of all and any actions which may prevent or impede the free and full use of the needed muscles. (1939, p. 1)

According to Matthey (1939, p. 1), there are three aspects of relaxation:

- 1) relaxation of the up-holding muscles of the arm, when its weight is required as a basis for the finger and hand exertions,
- 2) relaxation in the sense of cessation of all work and weight the moment these have fulfilled their purpose, and

²³ This information comes from the writer's personal experience at a piano workshop given by a member of the American Matthey Association during the 53rd Annual Piano Festival of the American Matthey Association for Piano at the Columbus State University in Columbus, Georgia, USA, from June 9-12, 2010. This writer has also attended performances and lectures given by various delegates during the Festival, and seen how the principle of weight release and relaxation comes about in the performance of various types of repertoire.

- 3) relaxation of the antagonistic muscles designed to supply the opposite exertions to the required ones.

For every exertion, there is an equal and opposite reaction, and thus if we exert ourselves in both directions, we become completely stiff. Matthay called this antagonistic tension or stiffness of limb ‘The Very Devil’ (1939, p. 33), as it impeded free and easy piano playing. However, one must not relax everything indiscriminately. Matthay (1947, p. 27) explained that in fast passages there was a need to poise or balance the arm by exerting the up-muscles of the arm and relax only in between sounding the notes.

In slow passages, a downward exertion of the arm (arm weight) may be used. The only instance whereby stiffness was permissible was when playing extremely softly (Matthay, 1939, p. 8). Here, a trace of tension would be helpful in enabling the pianist to feel the downward exertion and produce the desired effect.

Although Matthay argued that ‘the more freely you do your work, the more musical will be your playing throughout’ (1939, p. 8), there would always be a slight residue of tension remaining in the form of muscle tone. Moreover, the pianist must be in good health to play ‘with the greatest possible freedom from...STIFFNESS [sic]’ (1939, p. 9).

A summary of Matthay’s principles of piano technique in relation to tone, touch and relaxation is given in Table 2.1 below:

Table 2.1: Matthay’s Piano Technique Principles in Tone, Touch and Relaxation

	Tone	Touch	Relaxation
Matthay	- The keys should be felt and weighed, not hit or struck, to produce a tone. - The fingertip should exert pressure known as an added impetus to depress the key. - Sense the key resistance before depressing the key.	- All touch is derived from the 3 muscular components of arm, hand and fingers. 3 species of touch: 1st species- finger touch 2nd species- hand touch 3rd species- arm touch - The 3rd species is capable of all varieties of tone.	- Relax the muscles required to hold up the arm when playing. - Cease all exertion the moment the tone is produced. - Relax the antagonistic muscles that impede free and easy playing.

2.4 Summary and Discussion

Matthay's prolific writings on piano technique principles were revolutionary during his time, and made a significant contribution to piano technique literature. He was the first pedagogue to examine the piano mechanism and write about it. His books, encompassing a whole range of technical ideas from touch forms to tone production, relaxation and forearm rotation principles, the teaching of fingering and interpretation, are inspiring works that have compelled attention and admiration among piano teachers, and won him many followers. Among these are renowned pianists York Bowen and Myra Hess, as well as author Denise Lassimonne. Matthay's works show him to be a great pedagogue.

Matthay's success as a teacher undoubtedly shows the rapport he built with his students. His claim of not having a method of piano technique suggests he neither gave the same procedure nor advice to every student (Uszler, 1991, p. 330). Despite having a large following of devoted students and teachers who studied his piano technique principles in England and other parts of the world, there have also been spates of different interpretations on Matthay's principles by other theorists, including his students. Pedagogues such as Fielden, Ching, and Ortmann invoked the authority of science to invalidate Matthay. As Matthay's influence grew, so did the differing views.

As previously seen in Coviello's criticisms of his mentor²⁴, Matthay's writing style and choice of terminology may sometimes be confusing and misleading. Uszler commented that his sentences are long and interlaced with descriptive words and phrases that are not clearly defined (Uszler, 1991, p. 330). Although his writing style and technical concepts have been subjected to criticism, his pedagogical ideas on musical interpretation remain applicable in today's context, for example, in matching the dynamic level of a tone to the preceding decaying tone, and differentiating the accompanying part with the more important part.

Although Matthay's technical theories have been the subject of dispute, his contributions in piano pedagogy are influential. Once we understand the principles of piano technique as analysed by Matthay, it is not the words that matter but the viability which they present.

²⁴ See p. 18 of this chapter.

Matthay's legacy continues today in the work of the American Matthay Association, which holds an annual Matthay Festival²⁵ to commemorate his work and impart his pedagogical ideas to piano teachers around the world.

3. James Ching

A student of Tobias Matthay, James Ching (1900-1961) rejected Matthay's technical principles and sought to show Matthay's flaws by creating his own system of piano technique. Ching's view was that Matthay's ideas and understanding of technique were based on kinaesthetic sensations, and not scientific studies, thus some of his technical descriptions were not exactly correct from an anatomical or biophysical perspective. Rather, Matthay's recommendations came from his experience as a pianist and teacher.

On the other hand, Ching's philosophy of technique was based on the scientific principles of biology and physics. In his books such as *Piano Technique: Foundation Principles* (1934), *Piano Playing: A Practical Method* (1946), and *The Amateur Pianist's Companion* (1956), Ching developed his own ideas of piano technique in agreement with scientific facts. His scientific theories expounded in *Piano Technique: Foundation Principles* had been examined by certain experts²⁶ in the relevant fields of science, who were satisfied with their accuracy. Ching's approach to piano technique was to compare movements of everyday life to the movements necessary in playing the piano in the most efficient way. He stated:

it can be of enormous practical help to relate the bodily movements involved in piano playing to their nearest equivalents in everyday life – and this especially in the teaching of children and those who are handicapped by a lack of confidence in their own pianistic abilities. (1946/1963, p. 8-9)

According to Ching (1963, p. 9), technique could only be acquired in two ways, firstly, through specific knowledge of the technical processes, and secondly by practising. To acquire technical skills in the most efficient way, Ching (1950) set down three foundations of piano technique in the forms of postures, movements and joint conditions. He believed that 'the story of correct postures, correct movements and correct conditions constitutes the whole story of piano technique' (Ching, 1950, p. 67).

²⁵ This author attended the Matthay Festival held in 2010 in Columbus, Georgia, USA.

²⁶ Ching worked with H.T. Jessop, M.Sc., Senior Lecturer in Applied Mathematics and Mechanics at the University of London, for his scientific experiments, and Professor H. Hartridge, Professor of Physiology at St. Bartholomew's Hospital, London, to prove his physiological arguments and conclusions (Ching, 1934, p. ix).

Along with the three foundations of piano technique, Ching categorised seven standard and three variable postures, and four principal and four auxiliary movements. Joint conditions with variable tension levels were tabulated in charts. Although factors such as anxiety, inadequate practice, lack of experience, or lack of intrinsic talent can create problems in playing the piano, the immediate cause could be attributed to the lack of correct technical skills. Thus, Ching's philosophy was:

to teach a factually correct and standardised technique for all our students by means of which they may sooner or later be able to express their individual [i.e. non-standardised] interpretations. (Ching, 1962, p. 7)

Ching made a clear distinction between art and the functional mechanics of piano technique. In other words, he believed music was to be separated from technique. This philosophy differs from that of Matthay and Gát. Matthay believed that technique and interpretation should be taught simultaneously as one leads to the other, whilst Gát's philosophy was to always link technique with music. According to Ching, technique was to be taught factually, and should be different from teaching interpretation, which was 'an art form that appealed to the student's imagination' (Ching, 1962, p. 7). The factual teaching of technique involved the technical analysis of every pianistic difficulty in relation to the structure of the passage. This included its speed, tone quantity and tone quality. The pianist also had to ensure the physiological processes such as tension at particular joints, and the size, force and movements employed fit the analysis. Such processes would help the pianist overcome many of the difficulties of technique. Ching believed that no one could achieve full potential as a pianist without an understanding of the foundation upon which technique was built (Ching, 1963, p. 14).

3.1 Tone

Tone production in Ching's approach to technique was categorised in terms of four 'principal movements' (Ching, 1950, p. 36), which he referred to by number:

- 1) whole-arm oblique movements,
- 2) finger vertical movements,
- 3) forearm rotary movements,
- 4) whole-arm lateral skip movements.

The whole-arm oblique movement is a combined forward and downward thrusting movement of the whole arm operating from the shoulder and elbow joints

simultaneously with a high wrist. This is almost similar to Matthay's third species of touch, in which the shoulder, arm and hand provide a downward movement for a louder tone, except that Matthay's does not involve a high wrist. Gát's approach to tone production also involves playing the key as an elongation of the arm, from the shoulder joint. According to Ching, this principal movement was the most efficient means of playing chords, detached or repeated single or double notes. The movements used may be large, with the wrist, knuckle and finger joints kept very firm and completely immobile. Each movement must be aimed deeply into the keys to control the tone produced (Ching, 1962, p. 21).

As its name implies, the finger vertical movements are the upwards and downwards movement of the fingers from the knuckle joints. (Ching, 1962, p. 22) These movements are used mainly in legato passages in single notes such as scales and arpeggios. The fingers have to be curved and firm while the remaining joints remain loose and the wrist must be level, to control a tonal level of *piano* to *forte*. In *fortissimo* passages, the wrist is to be low, while in *pianissimo* passages, the wrist is high (Ching, 1962, p. 94).

Ching regarded the forearm rotary movement as 'perhaps the most undesirable and dangerous movement in the whole of piano technique' (Ching, 1962, p. 29). Apart from the few types of passages that required this movement, such as sections with broken octaves or tremolo figures, Ching warned that 'this movement must never be used, even in training exercises, for scales, five finger exercises, arpeggios or for alternating passages of moderate span or tone' (Ching, 1962, p. 23). Matthay, on the other hand, stressed the importance of forearm rotation movements, as mentioned in the previous section. His view was that forearm rotary movements led to free playing, thereby easing stiffness.

The whole-arm lateral skip movement is a sideways movement of the whole arm from the shoulder joint, employed to execute skips. The movement traces a path in the air, until the required finger is directly above the note to be played, after which it descends vertically towards that note (Ching, 1962, p. 23). In this movement, the body should be as steady as possible, with firmness from the hips to prevent unnecessary swaying from side to side (Ching, 1962, p. 25). For quiet skips, the wrist, elbow, knuckle and finger joints are to be firm while the shoulders remain loose. The shoulders should increase in firmness in proportion to the increase in speed and tonal intensity (Ching, 1950, p. 95).

Ideally, the pianist should aim to acquire the knowledge of associating a particular type of passage with the correct principal movement for ease of speed, accuracy and tone control.

Disputing the belief that tone quality must rely on the muscular or joint conditions of the pianist, Ching (1950, p. 74) outlined the factors which the quality of tone depends on, namely,

- 1) the quantitative level – the degree of loudness or softness of the passage,
- 2) the durational level – the degree of *legato* or *non-legato*,
- 3) the degree to which the notes are played rhythmically evenly,
- 4) the degree to which the notes are played in time or varied according to *rubato* effects,
- 5) the degree to which the notes are played together,
- 6) the degree to which the notes in the right hand are balanced with those in the left in terms of dynamic level.

Based on the above factors, a pianist should experiment with different levels of loudness and softness, play with different degrees of *legato*, play the notes more precisely together, and experiment with different tonal balances in both hands (Ching, 1950) in order to improve tone production.

3.2 Touch

In relation to tone production, Ching listed two types of touches involved. To produce a bright tone quality, a pianist would apply the percussive touch, whereby there would be some noise produced by the impact of the finger-tips against the key. Ching said, 'The greater the degree of non-musical noise produced from finger-key impact, the "brighter" or "sharper" is the tone' (1934, p. 50). In all percussive touches, the fingertips should be 'cushion-like', undergoing a certain degree of flattening on impact with the key, so that the force exerted can be aimed deeply into the keys for a better tone quality (Ching, 1934, p. 53). Ching's 'percussive touch' was what Matthay called 'key-hitting' and which Gát referred to as the 'indirect swing stroke'. This will be discussed in the analyses of the case studies in Chapter 4.

A non-percussive touch or touches which were as little percussive as possible were used when a full and rich tone such as a *cantabile* was required (Ching, 1934, p. 59). This occurred when the impact of the finger on the key took place at a slower speed

than that of the percussive touch. In contrast to Matthay's theory of the 'added impetus' or increasing acceleration during key descent, Ching (1934) said:

In every touch form, whether it be applied percussively or non-percussively to the keys, control of tone and ease of tone production will best be obtained by the attempted application of a constant force, producing, or tending to produce a constant key acceleration. (Ching, 1934, p. 57)

Depending on the intensity of tone required, whether soft, medium or loud, the pianist would have to adjust the degree of percussiveness of touch accordingly — therefore, the greater the percussiveness, the sharper or brighter the tone quality (Ching, 1934, p. 52).

Ching classified the various touch forms according to the part of the limb that moved during key depression. These touch forms are categorized as 'finger touches', 'hand touches', 'forearm touches', 'whole-arm touches', and 'body touches' (Ching, 1934, pp. 60-61). Finger touches are to be percussive for a bright tone and non-percussive for a singing tone. Hand touches are usually percussive and used for tones of medium to loud intensity. It is more desirable to employ forearm touches non-percussively to give a full tone quality. Percussive forearm touches tend to produce a harsh tone. Whole-arm touches are mostly similar to forearm touches, with the difference that they are stronger and should be used for tones of the loudest intensity. Body touches involve the forward movement of the body together with arm movements, enabling maximum force to be exerted during key depression, and minimising the percussiveness of tone produced (Ching, 1934, pp. 60-61).

3.3 Relaxation

Correct joint conditions are central to Ching's discussion on relaxation in piano playing. Regardless of correct postures and movements, if the conditions of various joints in the body are faulty, which is, either too loose or too tense, inefficient playing of the piano will result (Ching, 1962, p. 34).

Ching (1962, p. 34) set down three principles of physiology to attain the correct joint conditions involved in piano playing, which, according to him, could be related to everyday experiences. Firstly, when a joint is not active, it should be at the greatest degree of relaxation or looseness. Secondly, when work is being done by a joint, a certain degree of tension or firmness is necessary. Thirdly, the amount of firmness depends on the amount of work done. Thus, the greater the amount of work, such as

playing a fast or loud passage, the more tension is required at the joints (1956, p. 52). Ching (1962) explained:

The two factors that determine how much work has to be done by the joints in piano playing are tone and speed...This means that, in general...loud passages will want less relaxation [i.e. more firmness or tension] than soft ones, and fast passages less relaxation than slow ones. (p. 38)

In order to teach the student how to produce necessary tension and how to relax this tension, joint conditions must be taught after the student has mastered the learning of the four principal movements. Ching's (1962, p. 38) theory was that a student should be taught to relax and play as loosely as possible at the beginning stages of learning the piano, and not until the technical issues became increasing difficult should the student be taught about joint conditions.

Ching (1962, pp. 42-46) identified four types of joint conditions related to rigidity and relaxation. The first type is for passages with chords and intervals, repeated notes and staccatos, in which there is some degree of firmness in the finger joints, knuckle joint and wrist joint, depending on the variations in tone. In this instance, the elbow and shoulder joints are free. The second type is for *legato* passages, in which the finger and knuckle joints are firm, the wrist elastic, and the elbow and shoulder loose.

Passages with wide spans, such as broken octaves or narrow spans between notes require the third type of joint condition, with firmness at the wrist, knuckle and finger joints, and with the elbow and shoulder loose. The last type of joint condition is for wide skips, in which there should be firmness in all joints and the shoulders loose. In other words, one must not play with complete relaxation as this would 'set up an internal conflict between natural instincts and man-made authority (the teacher)' (Ching, 1962, p. 40). In fact, Ching's experience was to play the loudest tone with 'always more tension than most pianists... are accustomed to bringing into operation' (1962, p. 41), indicating his affinity to playing with tension.

Ching's concern with muscular coordination and his own experience with muscular difficulties led him away from Matthay's teachings and into the fixationist theories (that is, with little relaxation) advanced by Ortmann and others. He claimed that Matthay was not able to relieve him of a persistent cramp in his forearm. Through experiments with his method of continuous hand and arm pressure, which Ching said 'provides the most satisfactory method of ensuring efficient basic stabilisation' (Ching, 1963, p. 282), and 'taking great care that the hand raising muscle was continuously relaxed in the way my theoretical investigation had shown to be possible' (1963, p.

270), his cramp disappeared. Contrary to his own criticism of Matthay's relaxation principle, Ching realised for himself that when his upholding muscles were relaxed, his pain disappeared.

According to Ching (1962, p. 40), all students have natural, inborn instincts for good bodily coordination and joint conditions, provided they have no unnecessary anxiety in relating to notation, memory, or note accuracy, or if they are not given the wrong directions about joint conditions. Hence, it is essentially the teacher's task to guide the student's natural instinct towards the fulfilment of the required joint conditions. Given that Ching's approach to playing was with a fair amount of tension, ultimately causing his own injury, the onus is on the teacher using this method to be wary of the student who played with too much tension to continue doing so. An option could be to balance Ching's approach of playing with tension, and Matthay's approach of playing with relaxation.

A summary of Ching's Piano Technique Principles in relation to Tone, Touch and Relaxation is given in Table 2.2.

Table 2.2 Ching's Piano Technique Principles in Tone, Touch and Relaxation

	Tone	Touch	Relaxation
Ching	4 Principal Movements in tone production: 1) Whole-arm oblique movement: involves playing from shoulder to elbow joints with a high wrist. Each movement is aimed deeply into the keys. 2) Finger-vertical movement: the movement of fingers from the knuckle joints. 3) Forearm rotary movement: not to be used except in passages with wide spans or in tremolos. 4) Whole-arm lateral skip movement: traces a path in the air from 1 note to the next.	2 types of touches: 1) Percussive touch for brighter tone. 2) Non-percussive touch for cantabile tone. - Depending on intensity of tone needed, touches are in the form of finger touch, hand touch, forearm touch, whole-arm touch, and body touch.	- Joint conditions must not be too loose or too tense. 3 principles to attain correct joint conditions: 1) A joint not doing any work must be completely relaxed. 2) When a joint is involved in playing, a certain degree of tension is necessary. 3) The amount of tension depends on the work involved. E.g. loud or fast passage, more tension required.

3.4 Summary and Discussion

Ching's contribution to piano technique literature opens up a new avenue of thought and discussion. Most of his writings were based on his success in piano teaching at the James Ching Pianoforte School in London which he founded in 1945. His ideas on piano technique were categorised in what he called a 'method' of piano playing. Contradicting Matthay, Ching believed that every teacher who gave a student any instruction in the learning process was using a method. 'Indeed, any teacher who denies that he makes use of a method is openly confessing he doesn't know his job' (Ching, 1963, p. 2).

Ching's pronouncements, as he said, placed a great emphasis on scientific principles and associated technical processes with familiar everyday experiences, which were both rational and pragmatic (Ching, 1934). He also provided specific advice on teaching technique to children (Ching, 1962), which was useful for the inexperienced teacher, as he believed technique should be taught to every child from the first lesson, giving them the tools to be successful in their playing.

Ching's method of teaching technique separately from interpretation (Ching, 1963) was in contrast with the prevailing custom of that time. However, I am inclined to agree with most pedagogues that technique should be integrated with music. As early as the finger school, Czerny's treatise *Theoretical and Practical Pianoforte School* (1839) stated that technique was only 'a means towards the real end of the art, which consists in infusing spirit and soul into the performance, and by so doing operating on the feelings and understanding of the hearer' (vol. 3, p. 1). Matthay commented that technique was the power of expressing oneself musically (1947, p. 3). The composer, conductor and teacher Nadia Boulanger (1887-1979) stipulated that music was technique, and one can be free only if one has mastered the technique of one's art.²⁷ Leon Fleisher, the American pianist and composer, and student of Artur Schnabel, commented that it was the musical ideas that form one's technique. If you were trying to get a certain sound, you should experiment to find the movement that will get this sound (Gerig, 1976, p. 4). Schnabel himself taught the term 'piano technique' as 'the faculty to establish channels between the sound heard inwardly and its realization in all individualized subtlety, or, as one might say, channels between the "soul" and "body" of the interpretation of a score'.²⁸

²⁷ Nadia Boulanger, Sayings of great teachers. *The Piano Quarterly*, 26, 1958-59, p. 26.

²⁸ Konrad Wolff, *The Teaching of Artur Schnabel* (London: Faber and Faber, 1972), pp. 22-23.

As one of the first writers on piano technique to emphasise the psychological aspects of piano playing, Ching was intrigued by psychoanalysis and in particular, the theories of Sigmund Freud. The 'Id', 'Ego', and 'Super-Ego' were often the focal points of Ching's piano pedagogy. In one of his lectures in *Piano Playing* (1963), entitled *Freudian Psychology and the Pianistic Art*, he presented descriptive case studies on how he undertook psychoanalytic treatments on his students, which might have been an acceptable practice during that time. Ching claimed he had proven scientifically the efficacy of his technical method and many of his pedagogical ideas were sensible, objective and relevant in the teaching context. However, one should be careful about his speculations into the psychology of piano technique, which surpassed the fundamentals of piano pedagogy and may involve ethical issues in today's context.

4. József Gát

József Gát (1913-1967) studied with Béla Bartók and Zoltán Kodály, at the Franz Liszt Academy of Music in Budapest. As professor of music at the same academy, Gát expounded his technical and pedagogical ideas on piano technique, based on his experiences of a long-standing career as a concert pianist and pedagogue. These were summarised in one single book, *The Technique of Piano Playing* (1980). Throughout this study, Gát's central focus was the marriage between technique and musical concepts. Gát believed that:

the most important technical task in piano playing is the production of tones corresponding to our musical concept. (Tones of different volume, tones with and without noise-effect, etc.) [sic] Piano technique in its entirety thus depends directly on the musical concept. (p. 266)

The well-known Hungarian pianist Imre Ungár, commented on Gát's book:

Professor Gát, when speaking about technique, does not refer only to speed and dynamics; this would be a misinterpretation. The technique of piano playing is in fact the art and ability to express, by means of piano, our most beautiful musical and artistic ideas. It is not the dexterity of the fingers that alone constitutes good technique: it is the ability to make the piano weep and smile, to evoke human and artistic feelings and manifestations. A particular merit of this book is to have investigated, with absolute precision, all pertinent facts and data, and further, never to have faltered in the free and straightforward artistic exposition of the problems dealt with. (Ungár, 1980, cover page)

Gát's philosophy to integrate technique with music was in line with Matthay's but differed from Ching's (as discussed in section 3 of this chapter). His view was espoused by many pianists and pedagogues alike, such as Thomas Fielden and Arnold

Schultz. More recently, research has shown that both teachers and students believed that 'music is a means of expressing the musicians' personal understanding or meaning of the music for both the audience and to enable the musician to continue to develop their view of the world through the musical/artistic meaning of the music' (Reid, 1996, p. 5). This could only be possible with a good underlying technique in playing.

The underlying basis of Gát's technical theory was based on finger activity through the 'swing stroke' (1980 p. 33). In this stroke, three factors were involved: a firm basis through good posture coupled with a firm bench; the whole body functioning as an elastic support to absorb key rebounds; and executing an active swing stroke to enable the hammers to strike. Much emphasis was also placed on the 'weight effect' (1980, p. 31) which was the swing stroke supplemented with the aid of the arm or body. The adjustments of the weight effect between larger or smaller units of playing were known as 'synthesizing movements' (1980, p. 31). Gát defined the adjustments of the swinging unit to different key positions to strike the keys properly and comfortably, and without unnecessary noise effects, as 'adapting movements' (1980, p. 33).

According to Gát, gymnastic exercises away from the piano could aid the development of technique for pianists of all levels. These exercises developed muscular strength and 'facilitate the innervations of movements required in piano playing' (1980, p. 249). Gát, however, did not advocate the aimless, mechanical playing of technical exercises. He recommended that short finger exercises be constructed from difficult parts in the music (1980, p. 273). If the exercises were linked directly to the music, the student would be less likely to play mechanically and indifferently. However, Gát did advocate the practising of the most important playing forms such as scales and arpeggios (1980, p. 273) when the student had developed enough physically to handle the task mechanically and musically.

Gát's philosophy of teaching was to always link technique to musicality. If a pianist was unable to acquire a good technique, it was usually the result to trying to attain it independently from the music (1980, p. 276). Gát's principle was to strive for good, musical piano playing, which could be accomplished in two ways. First, the student should be introduced to rhythmic movements and gestures to folk songs, and games to develop the imagination (1980, p. 267). Such movements could then be transferred to movements at the piano to evoke emotions. Second, the teacher should play for the student, and through observation, the student hears the musical nuances of

the teacher and finds the appropriate movements to resolve technical problems (1980, p. 270). By this, Gát implied that the teacher needed to be a distinguished performer himself or herself in order to be able to demonstrate to the student how the music should sound. According to Gát:

Good playing by the teacher is not only helpful in developing the musical conception, but also an important sign-post towards attaining the proper mechanical balance on the part of the pupil. (1980, p. 270)

Although beyond the scope of this study, this is important advice which is not necessarily followed as many piano teachers may not have the technical proficiency to demonstrate correctly to the student. This may be related to the fact that many piano teachers are not specifically trained to teach the piano. Since there is no compulsory prerequisite professional certification required to become a piano teacher, no standards exist whereby a pianist must attain to teach the piano. On that note, Chronister (Bastien, 1973) argued:

Piano teacher training is necessary because millions of students are going to the nearest teacher who may or may not be a fine performer, whose training may or may not have included guidelines for determining what different kinds of students need in order to become successful piano students. (1973, p. 244)

However, today, some parents have become more discerning when sourcing for a piano teacher for their children. Such parents opt to send their children to teachers with certain qualifications, such as a diploma in music or a university music degree. Examination boards such as the Associated Board of the Royal schools of Music have also introduced professional development courses such as 'Certificate of Teaching' and 'Teaching Music Effectively'²⁹ to help piano teachers develop their teaching skills.

4.1 Tone

In Gát's view (1980, p. 12), there were many factors that influenced the quality of tone produced by the pianist. Firstly, the construction of the piano itself, including the stringing material and the quality of the sound-board, as well as the type of coating of the hammers and the quality of felt, all played a part in influencing tone production on the piano. The way the felt was coated affected the overall tone colour, giving rise to soft tone colours or hard and sharp tones. Secondly, noises also had a direct influence on tone quality. Three kinds of noises were described by Gát (1980, p. 14). These were:

²⁹ Information about these courses can be found in www.abrsm.org

- 1) noises caused by vibrations of the hammer and the string at the moment of striking the string, which gradually increase in the upper register;
- 2) noises caused by the collision of the wood of the key and the key-bed, known as lower noises; and
- 3) noises caused by the collision of the hand and the key, known as upper noises.

Matthay had similar views of tone production in what was known as instrumental education (see section 2.1). Ching did not discuss noises resulting from interactions either between the hammer and the strings, or the key lever and key bed; rather, Ching discussed muscular movements in tone production.

Gát's understanding was that the techniques of varying and apportioning the upper and lower noises with the vibrations of the strings will produce different variations of tone quality, depending on the effect sought after. The deep sound of the lower noise could represent a dark and depressed mood, whereas the upper noises were indispensable for light and cheerful sounds (Gát, 1980, p. 14).

Another factor that influenced tone quality was the combination of many notes sounding simultaneously or in succession. According to Gát, very little change of tone colour was possible with single piano tones. In combining many tones, there arose correspondingly many tone colours. In Gát's opinion, these tone colours were subsequently influenced by dynamics and agogics, and not associated with a specific kind of touch. Gát said, 'The more sensitive our dynamic shading and agogic shaping, the more diversified and coloured our playing will be' (1980, p. 21).

Finally, Gát viewed tone quality as being influenced by one's anatomic structure. A pianist with short, thick fingers and massive arms will transmit the force of the muscles and produce a sound with greater resonance, as compared to a pianist with long, thin fingers. However, such defective endowments could be compensated through teaching the fingers to pass on the weight-effect of the arms to the keys (1980, p.196). Gát was the only theorist among the three analysed to discuss differences in anatomy in relation to piano playing, and how to produce a good tone with a non-ideal anatomical hand structure. This would be useful for teachers, as not all students are endowed with the ideal hand structure for piano playing.

4.2 Touch

Gát (1980, p. 23) believed that touch included many kinds of body movements. The whole body functioned as an elastic support and each body part, from the feet and trunk, to the arms and fingers, played an important role in executing the correct touch.

Two types of touch were mentioned in Gát's method of tone production: the 'direct swing stroke' and the 'indirect swing stroke' (1980, p. 25). In the former, the finger clinged to the key and was brought into motion as an elongation of the arm. Thus, the pianist played directly on the key from the shoulder joint. The direct swing stroke was not applicable for fast movements or for more energetic display of the fingers where they had to strike from a greater height. In such situations, the pianist would have to apply the indirect swing stroke. Here, the fingers had no contact with the keys initially, but were raised before striking the keys, thereby creating upper noises. Since the use of the indirect swing stroke was unavoidable, Gát recommended that the pianist should raise the fingers only as much as is necessary for producing the desired tone colour, as well as by slowing down and braking the movement of the impact between finger and key in order to reduce the drawbacks of the indirect swing stroke to a minimum.

In all forms of touch, as the fingers strike the keys, the arm and whole body will absorb the rebound of the keys so that the hand does not get displaced from the striking position of the fingers. Gát called this counterbalancing of the rebound of the keys and their elastic support the 'weight-effect' (1980, p. 27). This was not to be mistaken for a slumping state of the body, but rather, it required the body to be in a relaxed and elastic state. Gát stated:

The counterbalancing of the rebound of the key and the variation of the elasticity of the support in proportion to the force of the rebound complements the work of the active swinging unit and renders it more reliable. As the player has the sensation that this occurs with the aid of the weight of the arm or the body, respectively, it is called "weight effect" or "weight-complement". (Gát, 1980, p. 27)

Of all the three pedagogues analysed, Gát's description of the 'elastic' body is, in my opinion, the most effective. It means there is a certain level of flexibility required of the body, which is neither too relaxed nor too tensed. Matthay agreed with this fact when he said "freely and easily keep your body erect, or nearly so" (1947, p. 110). Ching recommended that the body be kept steady and firm at the hips, and not swaying from side to side when playing (1962, p. 25), advocating a more rigid body position.

The playing mechanism responsible in producing all forms of touch would coordinate such that the upper arm performed vertical movements, the forearm rotational movements, the wrist mainly passive and the fingers performed their own work independently (Gát, 1980, p. 34). According to Gát, the work of the fingers was greatly important in the active swing stroke and in transmitting the force of the arms to the keys (1980, p. 190). Consequently, for any kind of touch, the fingers must always be active, and the finger ends must remain taut. Passive, loose fingers caused unnecessary noise effects, resulting in poor tone production.

4.3 Relaxation

Gát believed that no complete relaxation could exist when playing the piano as there would always be a certain amount of muscle tone involved. He emphasised that pianists did not need relaxation. Gát clarified his notion of relaxation, which he said:

In its literal sense it means a slackening or loosening which is only part of the truth. The muscle tonus excludes any absolute relaxation and what we need in fact is not relaxation but elasticity, the springiness of the fencer. (Gát 1980, p. 85)

Unlike Matthay's theory of relaxing immediately after playing each key, Gát found that relaxing after each muscle action could have a negative impact on both technique and imagination. Thus there should be a continuous flow of energy both technically and musically. Playing the piano required the constant regulation of the resistance from the rebound of the keys. The whole body should function as an elastic support to absorb the rebound of the keys. This would require the whole body to be in a relaxed and elastic state, but not 'a slumping state' as mistaken by many pianists (Gát, 1980, p. 27).

A summary of Gát's Piano Technique Principles in relation to Tone, Touch and Relaxation is given in Table 2.3 below.

Table 2.3 Gát's Piano Technique Principles in Tone, Touch and Relaxation

	Tone	Touch	Relaxation
Gat	• 5 factors influence tone production: 1) Construction of piano, including type of coating of hammers and quality of felt. 2) Noises, caused by -- vibrations of hammer and string. -- collision of key and keybed. -- collision of hand and key. 3) Combination of many notes for more tone colours. 4) Dynamics and agogics. 5) Anatomic structure of hand and body, e.g. thick fingers and massive arms produce tone of greater resonance.	• 2 types of touch: 1) Direct swing stroke – finger already on key, sound produced from the shoulder joint and arm. 2) Indirect swing stroke – finger has no contact with key initially, but is raised before striking key.	• No complete relaxation. Rather, a constant energy must flow without relaxing after each key depression. • Elasticity (like the springiness of a fencer) needed, not relaxation.

4.4 Summary and Discussion

Unlike Matthay and Ching, who wrote a prolific number of books on piano technique, Gát consolidated his ideas based on thirty years of piano teaching into one single book, which he intended as a manual for students at conservatories. Whilst Matthay's piano technique strategies were based mainly on his own experience as a teacher, and Ching's on scientific principles, Gát approached the different technical concepts by searching for the 'general laws' (Gát, 1980, p. 9) in terms of observing famous pianists, researching on how great artists related to their instruments, accepting scientific principles verified by physiology, and conforming with the experiences gained in concert halls and in teaching.

As the book was intended to be a manual for pupils at conservatories, Gát's writing focused on every detail of piano technique, from the general, including body movements, posture, the role of the various joints, practising, and the emotional concept of music, to the specific, including how to play octaves and chords, tremolo, scales, trills and fingering. It is useful for the details provided, as well as the structured

approach, which helps pupils to learn in step-by-step progress. He also included a chapter on teaching beginners, which is useful for new teachers.

Gerig (1976), however, argued that Gát's technical concepts lacked the thorough research and authenticity that Otto Ortmann and Arnold Schultz presented (p. 487). In other words, Gát's principles were not proven by science. He further criticised Gát about the value of the photographs used throughout the book, of the hands of great pianists from Chopin, Mendelssohn and Liszt, to the hands of famous pianists of more recent times such as Sviatoslav Richter, Anton Rubinstein and Emil Sauer.

In my opinion, Gát's use of photographs gives the reader a visual illustration of the point he was trying to make in each particular chapter. Gát used photographs, for example, to illustrate the use of the direct swing stroke, the adapting movements, and the active use of the fingers in playing a particular repertoire (1980, p. 39). The photographs of the different pianists in performance are useful for the understanding of posture and body movements, while those showing how to play chords, scales, tremolos and skips illustrate the specific movements needed to play these.

Kochevitsky (1967, p. 15) said Gát often separated technique from art, reminding the reader of the days of Czerny. He also claimed that Gát was 'unable to discuss the laws of the work of the central nervous system comprehensibly and apply them in piano playing' (1967, p. 15). On the contrary, Gát related technique to the musical and emotional content throughout his book. He emphasised that music 'seeks to express human feelings, emotions and messages' (Gát, 1980, p. 76). Furthermore, Gát defended the emotional aspect of music when he argued:

So why should playing music without expression be considered practising? If in a certain piece the trill expresses joy, happiness, its playing will be good – also when practising – only if played as joyfully and naturally as birds sing. (1980, p. 76)

Gát discussed the central nervous system very briefly, in relation to repetitive practising, which he warned against, as endless repetitions would impede the expressing of emotions (1980, p. 99). Gát's emphasis was not on the details of physiology and psychology, but more on his experience and observations. However, he set down principles of playing in a dogmatic approach that left little room for experimentation, much in accordance with the old finger school of thought whereby the teacher was the absolute authority.

Summary

Theories of piano technique teaching have essentially been centred on the physical aspects of the playing mechanism. The concept of these theories stemmed from the use of the individual parts of the anatomy, as in the finger school, to the coordination of all parts, in the arm and weight school. These theories have also been concerned with the piano action, which, including the addition of pedals, increased key-resistance and sonority, requiring increased muscular action and strength.

In the first half of the twentieth century, there had been a gradual process of change in the way piano technique was taught, brought about by individual teachers. At the beginning of the twentieth century, piano technique pedagogues focused their teaching principles on how the body worked mechanically in relation to the piano. Emphasis was also placed on contraction and relaxation. Matthay and Ching were examples of such theorists. By the middle of the century, some focus was shifted from the mechanics of the body to how the mind worked in piano playing. Gát was an example of such a theorist, whose emphasis was on the choreography of passages with the body in a comfortable manner, as well as placing importance on linking technique with the emotive aspect of music.

The evolution of technical theories can be seen in the different piano technique principles of Matthay, Ching and Gát, from relaxation theories to scientific principles, to general precepts learned through observations and experience. These three approaches in piano technique provide a range of opinions that can aid teachers in forming an understanding of the best way to introduce technical concepts to pre-tertiary piano students. Tables 2.4 and 2.5 below give a summary and comparison of the approaches of the three pedagogues in relation to tone, touch and relaxation.

Table 2.4 Summary of the Three Pedagogues' Approaches to Tone, Touch and Relaxation

Tone

Matthay	Focused on the player's perception of technique (i.e. the 'sense' and 'feeling').
Ching	Specific movements described in relation to fingers and arm.
Gát	Focused on piano design and noises not associated with the sound of the vibrating string (e.g. key lever striking the key bed). Little attention paid to muscle movement.

Touch

Matthay	Use of arm, hand and fingers.
Ching	Types of touch (e.g. percussive and non-percussive)
Gát	Relationship of fingertip to key surface.

Relaxation

Matthay	Muscle relaxation.
Ching	Use of joints.
Gát	Elasticity and energy.

Table 2.5 Three Pedagogues Compared in Relation to Tone, Touch and Relaxation

Matthay	Perception and general physical movements.
Ching	Specific physical movements.
Gát	Not much concerning physical movements. Spatial relationship between arm and hand to the key lever.

CHAPTER 3

METHODOLOGY

This research involves the application of three different approaches to the teaching of selected elements of piano technique in relation to selected repertoire, to three pre-tertiary students. The specific elements of piano technique were tone, touch and relaxation. The repertoire consisted of the students' own choice of pieces, one each from the Classic and Romantic eras. Each student was prescribed the approach of one theorist, namely, Tobias Matthay, James Ching or József Gát. The study comprised a preliminary assessment, six weeks of teaching and learning, and a final assessment, to ascertain the effectiveness of the approaches to the teaching of the elements of piano technique mentioned. This chapter details the methodology involved.

1. The Rationale for Qualitative Research: 3 Case Studies

Research has shown that descriptive data is a useful tool in the area of musical learning before explanatory theories can be formulated (Howe and Sloboda, 1991). As this study concerned the musical learning and experiences of three piano students over a six-week study period, a qualitative approach with descriptive data, which was focused on the student's learning experiences, perceptions and attitude, as opposed to precise measurement and statistical analysis, was more appropriate.

The case study approach gave this author the opportunity to observe and explore in detail how each student, in his or her piano playing, reacted and responded to the piano technique approach of a renowned theorist. It also enabled me to gain a deeper insight into outcomes that might not have been apparent through the use of a research strategy that covered a large number of instances (Denscombe, 1998). The focus in this study was on the learning experiences encountered by the individual students (Vishnevsky and Beansland, 2004). The logic behind concentrating efforts on one case rather than many was that detailed observations could be gained from looking at the particular case that could lead to wider implications, and more importantly, that would not have come to light through the use of a quantitative research strategy that tried to cover a large number of instances, for example, through a survey approach. The strength of the qualitative research used in this study is its ability to provide contextualised descriptions of how the students experience a given research issue (Mack et al, 2005), that is, to learn to play according to the principles of a particular piano technique

theorist. The aim here is to highlight general issues by focusing on the particular (Denscombe, 1998).

2. The Research Design

The research design consisted of three phases. The first phase was to source three participants for my case studies. The participants were selected from a pool of high-achieving students of piano teachers from the Canberra region. The students selected were aged between ten to twelve years old. The oldest participant was male, and the other two, female. All three students were interviewed informally about their willingness to participate in this study. They read the Student Information Sheet (Appendix A) before filling in the Student Assent Form (Appendix B). Consent was sought from their parents, who gave permission for their children's participation in this research (Appendix C). Ethics approval was also obtained from the Australian National University Human Ethics Committee prior to the commencement of this study (Appendix D). All three students were ensured of anonymity throughout the research process.

Phase 2 consisted of selecting repertoire the students had been studying, from the Classic and Romantic eras, and performing their chosen repertoire in an assessment to a panel of three independent piano examiners from the School of Music at the Australian National University. The results from this assessment were collated and the approaches of the three piano technique theorists to be studied were randomly assigned to the three students.

Phase 3 of the research design took the form of six weekly piano lessons with this author as the teacher, learning and applying the piano technique principles of the assigned theorist in relation to tone, touch and relaxation, to the areas of difficulty encountered by the student in his or her selected repertoire. Each lesson was audio-taped and video-taped for future study purposes, with the consent of both parent and student involved. During each piano lesson, my personal observations and the students' feedback were recorded. After six weeks, the students were assessed again by the same panel of examiners, performing the same repertoire, to identify any discernable changes in their playing. The results of this assessment were then compared with the previous results. Therefore, the results of the assessments, my personal observations, and the students' feedback were the factors taken into consideration to determine the overall effectiveness of each theorist's approach to piano technique.

In order to test the efficacy of the various approaches, the following took place during the six weekly piano lessons:

- 1) identifying the difficulties and problem areas in tone, touch and relaxation encountered in the student's playing within a piece of music from the Classic and Romantic eras;
- 2) the application of the assigned theorist's piano technique principles to rectify the problem areas;
- 3) demonstration and explanation of how the piece or certain sections of the piece should be played in relation to tone, touch and relaxation, based on the selected theorist's approach;
- 4) teaching the student how to practise according to the theorist's approach;
- 5) weekly feedback from the student on how he or she was progressing from the application of the assigned theorist's principles;
- 6) my observations, as the teacher, of how the student was progressing during the six weeks, in the learning of a particular approach.

Although the sample was not representative of the teacher/student population at large, the data gleaned from the study would, nonetheless provide insights, in qualitative research terms, of how individual students think, learn and experience a new technical approach over a six-week period.

3. The Student Participants

Three pre-tertiary piano students were selected for the case studies, with one different technique theorist randomly assigned to each student. The selection of the students was based on a number of common factors. Each of the students had a minimum of five years of piano study. The participating students were between the ages of ten to twelve years, and each of them studied with a different piano teacher. Both male and female students were represented in this study.

Since each of the students had been learning the piano for a number of years, and each had taken several piano examinations, they all had the pre-requisite technical skills and maturity to allow them to participate in this short study of six weeks' duration. How fast a student learns depends on a variety of factors, including the age of the student, the readiness for study, the physical coordination, musicality, emotional

maturity of the student, the amount and quality of practice put in, encouragement from family, as well as the quality of teaching (Uzler, 1991, p. 185). The students who participated in this research satisfied these conditions.

The students all expressed a willingness to participate in the study, as they believed it would help them to further improve in their piano playing skills. These students were all in good health physically, and kept up their fitness and physical coordination by participating in co-curricular activities such as swimming and ball games. In their past piano examinations with the Australian Music Examinations Board (AMEB), or the Associated Board of the Royal Schools of Music (ABRSM), these three students have obtained distinctions (ABRSM), A+, A or B+ (AMEB) in their piano examination grades, indicating that they were above average students who had been conscientious in working towards an examination, and possessed a

superior level of achievement in meeting the syllabus objectives in all sections, in terms of musicianship, security of technique (including intonation, tone, phrasing, articulation, rhythm), and stylistic awareness.³⁰

Thus, these students not only could play the piano well physically, they were also technically mature enough to learn new procedures, skills and strategies from their assigned theorist. This was important in this short six-week study, to gain as much as possible from the piano technique principles of the theorist allocated to them.

Although these students learnt the piano with different teachers who had different teaching methods and ideas, they all had supportive parents (predominantly the mother) who sat with them through their practices to ensure quality of practice and to maximise student learning. Research on parental involvement in instrumental music learning has shown a strong affiliation between musical achievement and the attitudes of the parents toward the child's musical activities (Davidson, Howe, Moore & Sloboda, 1996). Parental support in the student's practising was also essential to ensure the length and quality of practice (Woody, 2004). Thus parental support was essential in helping all three students maintain regular and constructive practices, to ensure the success of this six-week study.

4. Learning Needs and Styles

Many educators believe that a better understanding of how students obtain, process and internalise information results in more effective and efficient teaching. This

³⁰ This is the pre-requisite for A or A+ in an AMEB examination cited in www.ameb.edu.au.

management of information by a student is referred to as the student's learning style (Garcia, 2002). According to Garcia (2002, p. 1), these learning styles include visual, auditory, and tactile or kinaesthetic learning. A visual student learns best when information is presented visually, such as by reading or looking at pictures, and in the case of piano teaching, through reading the music score in detail or by looking at the teacher's demonstrations on the piano. An auditory piano student absorbs information through listening to the tone, pitch, speed and other nuances of the music played. These learners often benefit from listening to the teacher demonstrate the piece on the piano, or by listening to a sound recording of the piece. Tactile or kinaesthetic learners learn through their sense of touch, through playing by feeling and trying out on the piano what the teacher explained.

A teacher should preferably know the learning needs and styles of the individual student to ensure flexible, challenging, and appropriate opportunities for effective learning are provided. Reid (2001) recommended a flexibility of teaching style, with different strategies and ideas, adjusted to suit the learning needs of different students. Cooper and McIntyre (1994) suggested the concept of a progression of teaching styles, where teachers were adaptable to different learning needs at different times or in different situations. These theories would ensure a more custom-made teaching, leading to a faster student progress in learning.

Information about the three students' learning styles was gathered through informal conversations with the students and their parents prior to the start of the teaching program, and conversations with the individual students during the lessons, as well as my personal observations in each lesson. The presentation of each theorist's piano technique principles to overcome the areas of difficulties in each piece was adapted, to the best of my ability, to suit each student's learning style.

As this study was not an in-depth research into the area of learning needs and styles of individual students, the information gathered of each student's approach to learning piano technique was based on my perceptions of their learning behaviour, and not through any rigorous testing or investigation.

It was important to be aware of the learning needs of students and the related theories. Nevertheless, these were beyond the scope of this research, but it would be invaluable to follow them up in a future larger body of research.

5. Assessment and Repertoire

In an effort to ascertain any discernable changes in the students' playing before and after the six weeks of lessons studying the piano technique principles of a particular theorist, a pre-study assessment was implemented prior to the start of the weekly piano lessons. As the students studied with different teachers, the purpose of the initial assessment was to gauge the standard of playing for each student, as well as their technical proficiency in relation to tone, touch and relaxation. There was no standardised assessment to suit the needs of this study; therefore a specially-devised assessment had to be implemented. This specially-devised assessment required each student to perform two pieces, one from the Classic era and one from the Romantic era. The students were assessed according to the following components:

- 1) tone quality,
- 2) dynamic range,
- 3) type of touch,
- 4) general finger position, and
- 5) tension levels.

Each of these components was scored between one to five, with five being the highest score and one being the lowest. The scores given by each of the three examiners for each piece were then added up and the average score calculated for each component. It is to be noted that the three examiners were given no criteria for the assessments other than their own understanding of the three selected elements of piano technique. Thus, the scores given to the students were according to the examiners' subjective interpretation. A sample of the examiner's grade sheet is found in Appendix E.

At the completion of the six-week teaching period, the students were once again assessed under similar conditions by the same panel of examiners, playing the same repertoire. Their new scores were added up and an average score was given for each component. The new average score for each section was compared with the previous average score. The aim of this second assessment was to ascertain the level of improvement, based on the examiners' scores, in the students' playing from the application of the piano technique principles of Matthay, Ching or Gát in the students' selected repertoire over six weeks of teaching. Research has shown that music examinations and assessments give the student motivation and inspiration towards a

definite goal (Taylor, 2009). The goal in this study was for the student to learn the approach of a prominent technique theorist in six weeks, and to apply his principles in the pieces studied. The assessments, therefore, served as a motivation to achieve this goal.

The assessments involved playing two pieces, one each from the eighteenth century Classical era and nineteenth century Romantic era respectively. Music from these two periods was chosen for a variety of reasons. An investigation into the piano examination syllabi of the Australian Music Examinations Board (AMEB), and the Associated Board of the Royal Schools of Music (ABRSM), two examination institutions that receive world-wide recognition as instrumental examination graded systems, showed that repertoire from both the Classical and Romantic eras were commonly listed in their graded examinations syllabi. Moreover, it was useful to consider the technical features of a composition from the Classic and Romantic eras, such as the following (Uszler, 1991, p. 184):

- 1) triads in root position and inversions,
- 2) two independent voices,
- 3) melody with accompaniment,
- 4) variety of speed, dynamics and texture,
- 5) contrasts of touch and dynamics between hands,
- 6) use of the full keyboard,
- 7) expansion and contraction of the hand from a basic five-finger position,
- 8) ornaments used for expressive purposes – especially mordents, turns, short trills.

Most of the repertoire belonging to the Classic and Romantic eras has some of the above mentioned devices. These technical requirements would challenge the pre-tertiary pianist physically, but at the same time the pieces are harmonically pleasing to play. Uszler said of such repertoire,

Such music *sounds* pleasing in ways that a listener can perceive and analyse harmonically, melodically, rhythmically, and expressively. Further, it *feels* good in ways that a pianist can appreciate tactilely: such music is comfortable to play (Uszler, 1991, p. 184).

6. The Panel of Examiners

A panel of three examiners was assembled to measure the students' standard of playing prior to and after the six-week study. To ensure the reliability of the testing, the examiners were experienced in the performance and teaching of the piano, independent, and impartial. The three examiners were distinguished professional musicians in the field of piano-teaching and performing, and their expertise ranged from historically-informed performance practice to piano pedagogy. One of them was a professor of piano and head of keyboard at the Australian National University School of Music, with an extensive performing career in Australia and abroad, as well as being an eminent recording artist. The other was a lecturer in piano at the ANU School of Music, who was trained abroad and had appeared widely in concerts. The third examiner was a doctor of philosophy candidate with many years of experience in piano performance both in Australia and abroad, and who was also a professional accompanist.

Each examiner was given a grade sheet (Appendix E) for each of the two pieces played, in which they independently scored the student out of a scale of one to five in each area of assessment, with one being the lowest score and five the highest score. Since no criteria were given to the examiners for the assessments other than their own understanding of the three elements of piano technique, the scores given by the examiners to the students were based on their own subjective interpretation. The scores given by the panel of examiners for each work were then added up and the average score calculated for each area assessed. These results will be examined in detail in the discussion on each case study in the next chapter. After the initial assessment, one technique pedagogue was assigned to each student. To ensure fairness and to be as unbiased as possible, the assignment was done randomly: the three examiners each selected a slip of paper with a technique pedagogue's name, for a student.

7. The Lesson Structure and Content

The piano lessons commenced a week after the initial assessment, each with a duration of between forty-five to sixty minutes, depending on the length of the repertoire selected. The student would proceed to play the first piece, which was the eighteenth century Classic era work. As this study was focused on the piano technique elements of tone, touch and relaxation, any difficulties in relation to these three elements encountered during the playing would be identified and marked on the score. As the teacher, I would then apply the piano technique principles of the student's

assigned theorist to rectify the problem areas. This was done through demonstrations on the piano, explanations about the problem areas and how to correct these problems, explanations about the theorist's principles, and hands-on sessions by the student to reinforce these explanations.

Musicians acknowledge teacher demonstration as a crucial factor in improving performance skills (Radocy & Boyle, 1997). While verbal directions and explanations given by the teacher are necessary, a practical demonstration gives a visual integration of any diverse elements such as technique and interpretation together into a thorough performance. Verbal explanation is most effective when done in conjunction with teacher demonstration in piano playing (Rosenthal, 1984). Dickey (1992) found significant evidence that students who were taught by teacher modelling achieved higher scores on tests relating to playing skills. Through appropriate modelling in piano instruction, the student draws on implicit knowledge and shapes the (musical) concept until it matches that of the model (Haston, 2007). Whether the student is a visual, auditory or tactile learner, to have the teacher demonstrating on the instrument is an important part of the most effective music lessons, and is a viable strategy to improve the accuracy of student playing.

As effective practicing played an important part to ensure the success of this six-week program, part of the lesson was used to discuss with the student strategies to practice at home effectively using the assigned theorist's piano technique principles. This was then written in the student's practice record sheet (Appendix F). According to Rosenshine, Froehlich, and Fakhouri (2002), practicing at home was facilitated 'if the teacher gives specific instructions about what needs to be worked on, how to do it, and what the result should sound like' (p. 309). McPherson and Davidson (2002) supported this view, saying it is the role of the teacher to show students how to practice, to set manageable and appropriate goals for their progress, and to monitor the success of the practice strategies. At the end of each lesson, the student recorded his or her comments and reactions to the lesson in a student diary (Appendix G) for evaluation purposes.

8. The Rationale for a Six-Week Study

As this study was intended to be a forerunner of a larger study whereby more elements of piano technique and a wider selection of piano technique theorists could be examined in greater detail, the purpose here then was a short, preliminary study to explore three different pedagogies, and to test the effectiveness of these three

approaches in piano technique, and compare them for future teaching purposes both for the student and for the teacher.

The three participants selected in the case studies were able students who had proven their abilities through their past piano examination results. They were also familiar with the repertoire chosen for this study, each having learnt the works for about three weeks from their respective piano teachers. As these were students who learnt quickly, and each had supportive parents who were willing to sit with them to ensure efficient learning and effective practicing, it was my opinion that a six-week period was sufficient for the students to learn the piano technique principles of their assigned theorist in their existing repertoire.

In addition, since this study was done during the period leading to the students' piano examinations, it was vital to consider that the examination was a source of motivation for them to progress with their assigned method of learning. In Sloboda's (1994) opinion, the examination system had the potential to create the incentive to continue and develop learning.

Summary

This research involves a case-study approach, examining how three participants responded to three different approaches to piano technique teaching. The participants consisted of one male and two female pre-tertiary students, aged between ten and twelve years, selected from different teachers in the Canberra region. Each of these students had been learning the piano for a minimum of five years, and had taken several piano examinations. They each had a supportive home environment where one parent supervised the piano practice to ensure efficiency and progress. In the teaching of these students, their learning styles and needs were taken into consideration, such that the principles of each theorist's approach were adapted to these learning styles. The students played works from the Classic and Romantic eras, and completed six weeks of individual piano lessons to learn the piano technique principles of their assigned theorist in their two works. One pre-study assessment and another post-study assessment were administered by professional examiners to identify any changes in the elements tone, touch and relaxation in the students' playing before and after learning the particular theorist's principles. The effectiveness of each theorist's approach was measured by the level of improvement based on the assessment scores, the author's personal

observations, as well as the students' feedback in the learning process. Each case study is discussed in detail in the next chapter. This will include the following:

- 1) the background of the participant;
- 2) his or her strengths and weaknesses in playing the selected repertoire;
- 3) information on how the student performed during each lesson;
- 4) a short profile of his or her learning needs;
- 5) the author's teaching method based on the assigned theorist's principles;
- 6) the author's personal observations and student feedback;
- 7) recommendations on how to improve the student's playing based on the assigned theorist's approach to tone, touch and relaxation;
- 8) the assessment outcomes.

CHAPTER 4

IMPLEMENTATION OF SELECTED APPROACHES IN THE TEACHING OF TONE, TOUCH AND RELAXATION TO INDIVIDUAL CASE STUDIES

The six-week teaching program based on the three different approaches in the teaching of tone, touch and relaxation, implemented on three case studies, aimed to test the effectiveness of each theorist's approach when applied to selected students' repertoire. This chapter details the background of the student, the activities that took place during each lesson, and how the piano technique principles of each selected theorist were applied to rectify the difficulties and problem areas within each student's repertoire. Results from the two assessments were analysed, the author's personal observations discussed, and the students' feedback addressed, in order to assess the outcome for each case study as a consequence of the implementation of the selected approach.

1. Case Study 1

Background

Student 1 was a twelve-year old male who began learning the piano at the age of five. He was a bright and self-motivated boy who had a good perception of pitch and rhythm. At the time this research study was carried out, Student 1 had completed his piano examinations from Grades 1 to 6, with Grades 1 to 5 being Associated Board of the Royal Schools of Music (ABRSM) examinations³¹ in which he obtained distinctions in all the examinations taken. An analysis of Student 1's comment sheets from the ABRSM examiners showed excellence in the areas of scales and arpeggios, performance of repertoire, and aural tests. His Grade 6 examination was with the Australian Music Examinations Board (AMEB), after Student 1 and his family moved to Australia. He achieved an A+ grading for this examination. Musically, Student 1 was considered highly competent based on his outstanding piano examination results. He was also a keen learner as he chose to participate in this study to further develop his skills in piano technique.

³¹ In ABRSM examinations, candidates attain distinction, merit, pass or fail. There is no alphabetical grading system, unlike the AMEB examinations.

For his technical development, Student 1's piano teacher did not assign any technical exercises or studies for his daily practice other than the scales and arpeggios required in the examination syllabus. Student 1 practised on average, an hour a day on the piano, excluding Sundays and usually with close supervision from his mother, who sat with him in all his practices.

For this research, Student 1 chose the first movement of W.A. Mozart (1756-1791) Sonata in C minor, K457, for his eighteenth century Classic era piece, and F. Chopin (1810-1849) Waltz in A minor, Op. 34 No. 2, for his nineteenth century Romantic era piece. Both were set pieces for his Grade 7 AMEB piano examination. Student 1 had been studying both pieces with his current piano teacher for about three weeks prior to the commencement of this teaching program. As such, there was potential for growth and development as the pieces were not yet formed in relation to tone, touch and relaxation, the three elements of piano technique to be studied.

1.1 Pre-Study Assessment Results

As discussed in the previous chapter, two assessments were undertaken by each student in the case study. There was no standardised test available to meet the needs of this study; consequently, a specially-devised test had to be implemented. This specially-devised test required the student to perform the two selected pieces. The areas assessed in these two works included tone quality, dynamic range, type of touch, general finger position and tension levels. For each area of assessment, each of the three examiners gave a score from a scale of one to five, with one being the lowest score and five being the highest score in terms of achievement levels. The tables below summarise the scores Student 1 attained for each area of assessment in the two selected works. Table 4.1 shows the scores for the eighteenth century work performed. The scores given to Student 1 for his nineteenth century work are summarised in Table 4.2.

Table 4.1 Examiners' Pre-Study Assessment Results:**Student 1 18th Century Work W.A. Mozart Sonata in C minor KV457/i**

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	2	3	3	2.6
Tone: Dynamic Range	2	3	3	2.6
Touch: Type of Touch	2	2.5	2	2.1
Touch: General Finger Position	4	4	5	4.3
Relaxation: Tension Levels	2	4	1	2.3

Table 4.2 Examiners' Pre-Study Assessment Results:**Student 1 19th Century Work F. Chopin Waltz in A minor Op.34 No.2**

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	3	4	4	3.6
Tone: Dynamic Range	3	3	2	2.6
Touch: Type of Touch	4	4	2	3.3
Touch: General Finger Position	4	4.5	4	4.1
Relaxation: Tension Levels	3	4.5	2	3.1

Based on the examiners' results for the eighteenth century work, the areas to focus on for Student 1 were 'type of touch' and 'tension levels', as these areas achieved lower average scores than the other areas. According to the examiners, Student 1 was mainly playing near the surface of the keys for the Sonata, instead of depressing deeper into the keys, thus accounting for the lower score in 'type of touch'. They agreed unanimously in their comments that playing near the surface of the keys was not a desirable type of touch as it affected the tone quality produced. In terms of relaxation, one of the examiners commented that Student 1 had 'unwanted tension levels in (his) palms, wrists, neck and shoulders (on occasion)'.

Student 1 obtained higher scores for his nineteenth century piece as compared to the previous work. There was, however, a limited 'dynamic range' in his playing for this piece, and therefore that category had the lowest average score. The examiners had contradicting comments in terms of the student's tension levels. One of them commented that there was 'palm tension and wrist tension', and another wrote that his 'body position was very stable, allowing for natural hand movement without tension'.

After the pre-study assessment had taken place, Student 1 was assigned, at random, the piano technique principles of Tobias Matthay in relation to tone, touch and relaxation. The six weeks of teaching according to Matthay's principles commenced the following week.

1.2 Discussion of Case Study 1

First movement from Sonata in C minor, K457, by W.A. Mozart

From my observation in the first lesson with Student 1 when he played the first movement of the Mozart Sonata, he displayed a certain amount of tension in his playing, with stiff fingers, and tension in the arms and shoulder joints, which he attributed to being nervous in a new situation. This stiffness was evident in Student 1's initial assessment by the ANU examiners as well, as they unanimously gave him the lowest score in the area of relaxation.

Student 1 commented that he had difficulty relaxing the muscles when performing, as he had never been taught how to consciously relax when playing the piano. This was more so when playing octaves (which Student 1 played with tensed, clawed fingers), when playing at a fast speed, or when playing trills. All these features

Unwanted tension was present in the execution of trills in many instances in the first movement of the Mozart Sonata. The trills were not consistent in the way they were played, and were rhythmically not even. At times certain notes of these trills were not sounded due to the tension in the finger joints and wrists. Student 1 was trying to hold his fingers up and playing on the surface of the keys instead of playing more towards the key bed, resulting in what was known as 'key-hitting'. This playing at the surface of the keys was noted by the examiners during the pre-study assessment. Matthay disapproved of this form of playing when he said:

Key-hitting is demonstrated to be an undesirable a mode of bringing the finger-tip into contact with the key,...for it is obvious that such mode of contact would render impossible the intervention of our 'Resistance-sense', and would therefore prevent any direct judgement of the key's requirements as well as any accurate exemplification of our musical feeling. (1903, p. 125)

To overcome the difficulty of playing the trills and other ornamentations such as turns, and to reduce the upper surface noises of key-hitting, we explored the Matthay principle of sensing the key-resistance (Matthay, 1932/1947, p. 13) of the notes through slow practise in order to execute the right amount of force needed to play each note. According to Matthay, Student 1 should 'feel the key' (1932/1947, p.13) before each descent, and not 'hit' (1932/1947, p. 17) or 'strike' (1932/1947, p. 18) the key. This would also help eliminate the upper surface noises created through the student's key-hitting. Sensing the key resistance would involve knowledge of Matthay's three species of touch (Matthay, 1903, p. 106) (see section 2.2 in chapter 2), which I explained and demonstrated on the piano to Student 1.

For the fast passages and the trills and turns in the Sonata (see Fig. 4.2), using Matthay's first species (finger touch) which involved more finger activity over that of hand and arm, helped Student 1 improve in his agility, as he was not weighed down by the arm. To ensure Student 1 understood the concept thoroughly, I played the trills and turns using the first species of touch on the piano several times, thereafter which Student 1 modelled after me, and practised these trills and turns in a similar manner. The four-beat trill in bar 175 (Fig. 4.3) proved to be the most challenging for Student 1, as he had to use finger touch without unwanted muscle tension. It helped when he practised this trill slowly, and consciously relaxing his forearm while feeling the keys. Demonstrations were done on both the student's lap and on the piano to show the amount of force required to depress the notes for the trills and turns. Student 1 had to

experiment with the amount of force he was required to exert on all the trills and turns, and in particular, the long trill in bar 175, in his home practice for the next few weeks.

Fig. 4.2 W.A. Mozart KV 457/i, bars 2-3



W.A. Mozart KV 457/i, bar 23



Source: W.A. Mozart (1978, ABRSM Publishing, p. 16)

Fig. 4.3 W.A. Mozart KV 457/i, bar 175



Source: W.A. Mozart (1978, ABRSM Publishing, p. 21)

A considerable amount of lesson time each week was spent working on playing the trills, mordents and turns correctly, for example, in bars 2, 6, 15, 23, 25 and 175. It was necessary to hold the student's wrist at a level position, and asking him to play the ornamentations slowly and steadily, sensing the key resistance every time by feeling each key before descent, and relaxing immediately after sounding each note.

As Student 1 found out in the process of learning Matthay's approach, sensing the key resistance to execute the right amount of force for the trill could work only when the trill was played slowly. To sense the key resistance, one has to go down two-thirds of the way on a key to feel it before applying a downward motion to depress the key. Thus at a fast tempo, it would not be physically possible to do so for every note played. Student 1 would in effect, only be able to sense the key resistance in fast passages when practising these passages slowly. In my opinion, one could only aim to play with a downward motion from the key itself, which Matthay called 'clinging attitude' (1903, p. 223) to prevent key-hitting, rather than feeling the resistance of each key when playing at a fast speed.

Key-hitting in Student 1's playing was also encountered occasionally in other parts of the Sonata, for example, in bars 19 and 44 (octaves) of the exposition section, and again in bars 118 and 174 (octaves and wide leaps) of the recapitulation section. Again, the notion of sensing the key-resistance was applied during slow practice of these bars, and once the tempo increased, to play on the keys with a clinging attitude.

The problem with key-hitting was eliminated in subsequent lessons, as Student 1 became more aware about using a downward motion of the arm and feeling the keys before descent, allowing the limb 'to subside, lapse or sink down upon [the keys]' (Matthay, 1903, p. 127).

The other major area of difficulty identified in Student 1's playing of the Mozart sonata was the coordination problem between both hands. There were passages in which the notes of both hands did not synchronise rhythmically, and at times played in a rather awkward manner. This occurred in bars 59 to 62 (Fig. 4.4), and in most of the development section from bars 83-94 (Fig. 4.5), which was dominated by a triplet figure occurring predominantly in the left hand. Student 1 had difficulty playing these passages in a rhythmically even manner, and displayed tension when playing them.

Fig. 4.4

W.A. Mozart KV 457/i, bars 59-62



Source: W.A. Mozart (1978, ABRSM Publishing, p. 17)

Fig. 4.5

W.A. Mozart KV 457/i, bars 83-85



Source: W.A. Mozart (1978, ABRSM Publishing, p. 18)

In bars 59-62, the notes of both hands were not sounded together rhythmically as the right hand had the tendency to move ahead of the left hand. Tension was created as a result of trying to keep the left hand up to speed with the right hand. Apart from the slow practice needed to correct this problem, a poise arm with rotation movements (Matthay, 1932/1947, p. 59) helped Student 1 to overcome some of the tension experienced in this passage. I demonstrated how to achieve rotational movements towards the thumb in the left hand, and moving inwards and outwards rotationally for the right hand according to the melodic contour of the passage. As Matthay (1932/1947) explained, 'when a passage moves melodically alternately upwards and downwards, the rotational stresses are alternately inwards and outwards'. (p. 56) Student 1 practised this passage as I had demonstrated so that the rotation movements would come naturally when he played the piece up to speed.

Difficulties encountered in the development section of the first movement lie mainly in the co-ordination of both hands in the triplet section from bars 83 to 94 (Fig. 4.4). This was because Student 1 could not play the triplets rhythmically evenly, thus affecting the flow of the right hand melody. Tension in the finger joints leading up to the forearm impeded the movement of the entire playing apparatus, resulting in an

uneven execution of notes. This was another passage where rotation movements were needed to keep the hand in position and the forearm free and relaxed. Student 1 was shown how to apply forearm rotation, first by stretching the whole arm straight in front and executing free and easy tremolo movements (Matthay, 1932/1947, p. 62), and then applying this on the piano. Using similar movements, he experimented playing the left hand triplets in a rotary manner. He agreed it gave a sensation of freer playing with less technical restraint.

The combination of octaves and triplets in bars 176 to 180 (Fig. 4.6) of the coda section was another example whereby rotation movements should be applied. In order for Student 1 to understand Matthay's concept of rotating the forearm at its wrist, with the wrist-joint and hand to turn along with it, he was asked to try turning the door knob of the studio door before attempting to play the passage below with a similar rotary movement, and with a balanced and relaxed arm. I demonstrated how to play this passage using rotation movements and Student 1 modelled after me, feeling the sensation of playing with less tension.

Fig. 4.6

W.A. Mozart KV 457/i, bars 176-180



Source: W.A. Mozart (1978, ABRSM Publishing, p. 21)

Student 1 was also given a forearm rotation exercise to practise at home. This exercise was described in Matthay's *Relaxation Studies* (1908), as part of a daily exercise for rotation movements. It consisted of playing a broken octave scale, accenting the outer notes when the passage moved in the direction away from the body,

and accenting the inner notes when the passage moved towards the body, as shown in Fig. 4.7.

Fig. 4.7 Relaxation Studies Ex. No. 6



Source: T. Matthay (1908, Bosworth & Co Ltd, p. 40)

Matthay emphasised the importance of rotation movements as ‘forearm rotatory help must always be provided for every note played, whatever the form of touch used’ (Matthay 1932/1947, p. 63), whether in brilliant passages or *cantabile* passages. These movements could also be applied to the playing of octaves in the opening of the first movement and again for the octaves in the development and recapitulation, as Matthay indicated that ‘all octave and double-notes passages required slight (but invisible)[sic] rotatory exertions towards the thumb...’ (Matthay, 1934, p. 23). It was imperative for Student 1 to learn to use these movements according to Matthay’s principle, to help overcome difficulties in playing such passages of music.

As most of the first movement of the Mozart Sonata was at a fast tempo with contrasting dynamics, the second species of touch (see chapter 2, section 2.2) was applied in some passages as it offered a greater range of tone through the use of fingers and hands. Here, the hand and fingers combined to depress the keys, and yet the hand and arm were relaxed for agility purposes across the keyboard. This species was applied, for example, in the second subject of the first movement (see Fig. 4.8), where the general musical effect was light and delicate; the use of the forearm was sufficient to produce this effect.

Fig. 4.8 W.A. Mozart KV 457/i, bars 23-24



Source: W.A. Mozart (1978, ABRSM Publishing, p. 16)

Other examples of passages to which Student 1 could apply the second species of touch include bars 36-43, 79-82 and 131-138. I gave demonstrations of how to use the second species in these passages, which involved the notes being depressed by the combined action of the hand and fingers, and with the arm floating along the keyboard (Matthay, 1903, p. 221). The weight of the arm was not used here, and thus the tone quantity was more limited. Student 1 found the second species easy to understand, and could play the above-mentioned passages using this type of touch when he remembered to relax and keep his arm movement light.

To obtain louder sounds, the weight of the whole arm had to be released from the shoulder (Matthay, 1932/1947, p. 35). Good singing tone also requires the release of weight in the arm corresponding with the desired exertion of the fingers and hand. This would involve the third species of touch. However, Matthay warned:

Arm-weight, allowed to rest too heavily upon the keyboard in between the sounding of the notes, inevitably does infinite harm both technically and musically. It will certainly mar all agility and clearness, and cause "stickiness"; and it will also render every passage, thus misplayed, thoroughly dull and uninteresting musically, since such solid-resting weight precludes that nice choice of the tone-colour for each note, so imperatively needed if the result is to be music-making (Matthay, 1932/1947, p. 34).

What Matthay meant here was to ensure the student did not use a heavy 'free-fall' weight to depress the keys, but to exert enough arm weight to produce a good tone, 'invisibly supported and countered by the exertion of the hand and fingers'. (1932/1947, p. 32) Thus, Matthay was concerned about using correct technique 'to express oneself musically'. (1932/1947, p. 3)

There were many moments in the first movement of the Mozart Sonata where the third species of touch was required to produce the desired loud effects, for example,

in bars 21-22 (Fig. 4.9), in bars 49-52, in the octave chords at the beginning of the exposition, development and recapitulation sections (bars 1-2, 75-76 and 100-101), and in the coda section (bars 168-172). To apply the third species of touch, the arms must be poised and the hand must be resting on the surface of the keys in between sounding of the notes. This would ensure the elimination of unwanted tension that Student 1 had to overcome.

Fig. 4.9 W.A. Mozart KV 457/i, bars 21-22



Source: W.A. Mozart (1978, ABRSM Publishing, p. 16)

By the final lesson, Student 1 was able to play freely with less tension, and could apply the weight of the arms for the octave chords, poised arms with hand and finger touch for the second subject (bars 23-24), and the clinging finger attitude for the *cantabile* melodies (bars 36-43). It was apparent that there was improvement in the clarity and accuracy of notes, and more dynamic contrasts were established by this stage. Student 1 still displayed a slight amount of tension in playing the Sonata. This was evident in the execution of the trills and mordents, as sometimes they sounded clearly and other times they did not, for example, one note of a trill may not be sounded because of tension. Key-hitting that was prevalent in the first lesson was mostly eliminated by the final lesson. Student 1 was conscious about using a downward motion of the arm rather than using the wrist and fingers to play the octaves at the opening, and again at bars 19 and 44.

In the development section, Student 1 managed the triplets well using forearm rotation, rotating towards the direction of the new finger playing and away from the last finger, together with finger exertion on the keys. The co-ordination between right hand and left hand worked well in this section.

There was still some tension in bars 174-175 of the recapitulation section leading to the long trill. Student 1 tended to get excited and anxious in anticipation of a

trill or turn, fearing that it would not turn out right. He was reminded that he should play freely and be conscious not to tense himself unknowingly.

Judging from Student 1's playing of the Sonata in the final lesson of this study, he understood and could apply Matthay's principles of tone, touch and relaxation to overcome the many areas of difficulty encountered in the work. Student 1 was observed to have become more relaxed in his playing, with less tension in his shoulders, wrists and hands.

From my encounter with Student 1 over the six-week period, I observed that he was both a visual and tactile learner. He understood the lesson best when instructions were presented visually through demonstrations on the piano, one concept at a time. He was unsure what to do when information was presented verbally only. It was more helpful for him to be able to feel the touch on the piano when the desired tone and touch were described. Having a good ear for tone and a good memory to recall what he had absorbed were both strong assets that Student 1 possessed. Therefore by the second lesson there was already improvement in certain areas shown in Student 1's playing after learning several of Matthay's principles in the first lesson. A Practice Record (see Appendix F) was set out each week in the student's notebook for him to practice in accordance to Matthay's principles of technique for the two set pieces in this study. Student 1 also recorded his comments and reactions to each lesson in the Student Lesson Diary (see Appendix G).

Waltz in A minor, Op.34 No.2 by F. Chopin

When playing the Chopin Waltz during the first lesson, Student 1 had the problem of unwanted tension in the first sixteen bars (Fig. 4.10) of the accompaniment part in the right hand. He was trying hard to keep the right hand accompaniment softer than the melodic line in the left hand, and consequently was holding up his palm and fingers, in order to achieve a softer tone. This resulted in unnecessary tension in the right hand and arm, causing it to look awkward. Besides unwanted tension, the *cantabile* character of the left hand melody was not achieved as Student 1 was playing mainly on the surface of the keys.

Fig. 4.10 F. Chopin Op. 34 No. 2, bars 1-8



Source: F. Chopin (1986, ABRSM Publishing, p. 19)

A similar problem of unwanted tension occurred in the playing of the mordents in bars 37, 39 and 41 and other mordents throughout the piece, where tension in the fingers affected the clarity in the sounding of the notes.

Fig. 4.11 F. Chopin Op.34 No.2, bars 37-42



Source: F. Chopin (1986, ABRSM Publishing, p. 2)

Student 1 reported that he was usually tensed and nervous playing in front of others, and that he played better if he practised by himself. He commented that his attributions of anxiety range from feelings of personal inadequacy (as he sets a high standard for himself), to trepidation about the audience or the examiner's judgement during a performance or piano examination. These fears contributed to playing wrong notes, and most of all, unwanted tension.

The piano technique principles of Matthay in relation to tone, touch and relaxation were applied to the Chopin Waltz with demonstrations and explanations, as with the Mozart Sonata. In order to produce a *cantabile* tone in the left hand melody of the first sixteen bars according to Matthay's principles, Student 1 would have to apply the third species of touch with a weight release of the arm downwards (Matthay,

1932/1947, p. 35), and transferring the weight from key to key. This ‘clinging attitude’ (1903, p. 223) could be achieved only when playing deeper into the keys, and would help the key descent to be more gradual and less thrusting, thereby producing a more singing effect. Student 1 himself agreed that playing this way helped him to achieve a better tone quality, and at the same time enabled him to feel more relaxed in his playing. To keep the accompaniment part softer in the right hand, Student 1 had to recall the second species of touch which he had applied earlier to the Mozart Sonata, working with the hand and fingers only, and with the arm relaxed, so that the accompaniment was light and soft.

Other passages in the Waltz which required the ‘clinging’ touch included the melodic lines in bars 66-68 (Fig. 4.12) and in bars 81-84 (Fig. 4.13), where the use of the clinging finger attitude was essential for a deeper and more singing tone.

Fig. 4.12 F. Chopin Op.34 No.2, bars 66-68



Source: F. Chopin (1986, ABRSM Publishing, p. 20)

Fig. 4.13 F. Chopin Op.34 No.2, bars 81-84



Source: F. Chopin (1986, ABRSM Publishing, p. 21)

Student 1 was more comfortable in sensing the key resistance and relaxing in between the sounding of notes when playing in a slower tempo, such as in this Chopin Waltz. However, the habit of playing on the surface of the keys returned occasionally, resulting in unclear sounding of notes, as well as tension in the hand.

To overcome the stiffness associated with his playing of the mordents (see Fig. 4.11), Student 1 applied the first species of touch to the mordents in every alternate bar from bars 37 to 52, using only finger technique (first species of touch), and with the arms poised and relaxed. After practising the mordents using this technique, Student 1 was able to understand the process and could articulate the mordents with clarity.

In the A Major *sostenuto* section of the Waltz (bars 53-68) (see Fig. 4.6), the area of difficulty was in the left hand chordal accompaniment, which Student 1 could not keep consistently *piano* because of persistent tension in the hand and wrist. The right hand melody in this section was also not played in a singing style by Student 1. This process was reversed at the end of the piece in bars 169-188, where the right hand played the accompaniment and the left hand a richly expressive melody. The tone colour in this left hand melodic line was rather subdued and inexpressive.

The third species (see Chapter 2, section 2.2) weight release technique was again employed in the *sostenuto* section (bars 53-60) (see Fig. 4.14) of the waltz, and thereafter in bars 169 to 188 (see Fig. 4.15) in the left hand to achieve a richer tone through the use of the arm and a clinging finger attitude.

Fig. 4.14

F. Chopin Op.34 No.2, bars 53-60



Source: F. Chopin (1986, ABRSM Publishing, p. 20)

Fig. 4.15 F. Chopin Op.34 No.2, bars 169-188

Source: F. Chopin (1986, ABRSM Publishing, p. 23)

By the final lesson of the teaching program, Student 1 gave a technically proficient performance of the Chopin Waltz. There was good use of the clinging finger attitude and use of the arm (third species of touch) for all the *cantabile* melodies in the left hand and right hand, and less tension was noted in the student's shoulders, arms, hands and fingers. Matthay (1939) said to play with all possible freedom from stiffness. Student 1 showed in his performance of the Waltz that he understood how to play with freedom from stiffness, and consequently could play more expressively. In the playing of this work, Student 1 demonstrated his understanding of Matthay's principles and was able to apply them successfully in his practices. He commented that it was easier to apply these principles to a slower piece as there was more time to sense the key resistance, to consciously use arm weight, and to relax in between the sounding of notes. However, he also noticed an improvement in his playing of the Mozart Sonata as he was more aware of applying different touch forms to play different sections of the piece. Next to Student 1's inherent musical abilities, his persistence and achievement

need, coupled with close parental supervision, enabled him to maximise what he learnt during each week's lesson leading to an overall improvement in his playing.

1.3 Post-Study Assessment Results

A week after the final lesson of the teaching program, Student 1 was assessed by the same panel of examiners, under similar conditions, and using the same system of grading. The results of this assessment are presented below:

Table 4.3 Examiners' Post-Study Assessment Results:

Student 1 18th Century Work W.A. Mozart Sonata in C minor KV457/i

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	5	4	4	4.3
Tone: Dynamic Range	4	4	4	4
Touch: Type of Touch	5	4.5	5	4.8
Touch: General Finger Position	5	4.5	5	4.8
Relaxation: Tension Levels	4	4.5	2	3.5

Table 4.4 Examiners' Post-Study Assessment Results:

Student 1 19th Century Work F. Chopin Waltz in A minor Op.34 No.2

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	3	4.5	4	3.8
Tone: Dynamic Range	4	4	5	4.3
Touch: Type of Touch	3	5	5	4.3
Touch: General Finger Position	4	4.5	4	4.1
Relaxation: Tension Levels	3	4	3	3.3

From the scores given by the examiners, a marked improvement in all areas of assessment was achieved by Student 1. The two areas which Student 1 attained the lowest scores in the initial assessment, namely ‘type of touch’ in the eighteenth century piece, and ‘dynamic range’ in the nineteenth century piece, had both made significant improvements in the second assessment.

1.4 Summary of Case Study 1

Table 4.5

Results of pre-study and post-study assessments compared
Student 1 — 18th Century Work

Areas of Assessment	Average Score (out of 5)	
	Pre-study Assessment	Post-study Assessment
Tone: Quality	2.6	4.3
Tone: Dynamic Range	2.6	4
Touch: Type of Touch	2.1	4.8
Touch: General Finger Position	4.3	4.8
Relaxation: Tension Levels	2.3	3.5

Table 4.6

Results of pre-study and post-study assessments compared
Student 1 — 19th Century Work

Areas of Assessment	Average Score (out of 5)	
	Pre-study Assessment	Post-study Assessment
Tone: Quality	3.6	3.8
Tone: Dynamic Range	2.6	4.3
Touch: Type of Touch	3.3	4.3
Touch: General Finger Position	4.1	4.1
Relaxation: Tension Levels	3.1	3.3

By the final lesson of this study, Student 1 had learnt to apply Matthay's piano technique principles in relation to tone, touch and relaxation to rectify most of the problem areas in his repertoire. Comparing the examiners' final average scores with those of the pre-study assessment, improvement was shown in all areas in relation to tone, touch and relaxation, in both works, with Student 1 scoring above 4 points in the majority of areas assessed. Surprisingly, the Mozart Sonata fared better than the Chopin Waltz in all areas assessed despite Student 1 having found it more challenging to apply Matthay's principles in. His improvement in the scores achieved for the area of relaxation in both pieces as compared to the previous assessment showed an understanding of dealing with unwanted tension according to Matthay's principle as applied to the two works.

For the Sonata, Student 1 showed the most improvement in the area of touch, demonstrating his understanding of the movements of the joints of the arm to be used when depressing the key levers. Matthay's three species of touch played an effective role in helping Student 1 know when to use the fingers, hand, arm or a combination of the three as required.

In the Waltz, a marked improvement was made in the dynamic range of tone. One of the examiners commented in the pre-study assessment that the dynamic range was limited as the student was 'not using the weight of the arm to the fullest'. By the end of this study, Student 1 had learnt to apply Matthay's principle of weight release from the shoulders and a clinging finger attitude to increase the dynamic range of the Waltz.

The results show the effectiveness of Matthay's piano technique principles on Student 1, who summed up his experience of learning Matthay's approach by saying, 'For the Sonata, I find it easier to play the trills and I feel a lot more relaxed using Matthay's principles. For the Waltz, I feel that my tone is better than before.'

2. Case Study 2

Background

Student 2, a nine-year-old female student, had been learning the piano for six years. She obtained distinctions for her Grades 1 and 2 ABRSM piano examinations, and an A+ for her Grade 3 AMEB piano examination. The examiners' comments for Student 2's performances in all three examinations were very positive in every aspect of assessment from scales and arpeggios, to repertoire, to sight-reading and aural tests. Thus, her piano teacher felt she was ready to skip a grade and move up to the next level (Grade 5), as she was a motivated student as well as a fast learner. At the time this study was carried out, Student 2 was starting to prepare for her Grade 5 ABRSM piano examination to be held later in the year, and her selected repertoire for this research consisted of two pieces from her piano examination syllabus³². For her technical development, Student 2 was given the required scales and arpeggios in the piano examination syllabus, as well as technical exercises and studies such as *Junior Hanon*³³ for young students, and *25 Progressive Pieces*³⁴ by Burgmüller (1806-1874) by her teacher for her daily practice. As Student 2 was essentially a violinist, with piano as her second instrument, she spent relatively less time practising the piano than the violin. Her average daily piano practice session was about forty-five minutes, and was carried out under close supervision from her mother.

³² Student 2 was using the *Grade 5 Selected Piano Exam Pieces 2009-2010* (London: ABRSM Publishing, 2008).

³³ *Junior Hanon* (Alfred's Classic Editions, Malaysia: Rhythm MP SDN. BHD.) is a simplified version of *The Virtuoso Pianist in 60 Exercises* by Charles-Louis Hanon (1819-1900), arranged for young students.

³⁴ Johann Burgmüller, *25 Progressive Pieces for the Piano*, Op.100 (ed. Willard A. Palmer) (USA: Alfred Publishing Co., Inc.).

The work Student 2 selected from the eighteenth century Classic era was the first movement of Sonatina in A minor, Op. 88 No.3 (*Allegro con affetto*) by Friedrich Kuhlau (1786-1832). The nineteenth century Romantic era work selected was *Von fremden Ländern und Menschen* (Of Foreign Lands and Peoples) from *Kinderszenen* (Scenes from Childhood) Op.15, by Robert Schumann (1810-1856). Student 2 had been learning these pieces for approximately two weeks with her piano teacher prior to the start of this study. They were still relatively new pieces and had potential for further development in the areas of tone, touch and relaxation.

2.1 Pre-Study Assessment Results

The table below summarises the average score Student 2 obtained for each area of assessment in each of her works assessed.

Table 4.7:

Student 2 18th Century Work F. Kuhlau Sonatina in A minor Op.88 No.3

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	4	3	4	3.6
Tone: Dynamic Range	4	2.5	3	3.1
Touch: Type of Touch	3	3.5	5	3.8
Touch: General Finger Position	4	4	4	4
Relaxation: Tension Levels	2	3.5	3	2.8

Table 4.8:

Student 2 19th Century Work R. Schumann *Of Foreign Lands and Peoples*
 No.1 from *Kinderszenen*, Op.15

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	4	3	5	4
Tone: Dynamic Range	3	2.5	4	3.1
Touch: Type of Touch	3	4	4	3.6
Touch: General Finger Position	4	4.5	5	4.5
Relaxation: Tension Levels	3	3.8	2	2.9

Of all the areas assessed, Student 2 fared best in the area of ‘type of touch’ in the Sonatina, with one of the examiners giving her full marks for being able to ‘combine touches as required’³⁵ for the piece. On the other hand, Student 2 showed much unwanted tension in her playing, manifested in her hand, wrist, arm or shoulders, and as a result had a lower score in the area of ‘relaxation’. In the nineteenth century piece, Student 2 achieved the highest score for ‘touch’ in relation to general finger position as she played with ‘comfortably positioned fingers’ according to the examiners, even though she had to manage a number of wide leaps in the piece.

As seen from the tables above, Student 2 achieved lower scores in the area of ‘relaxation’ in both her pieces as compared to other areas assessed, showing that the student had much unwanted tension in her playing. Therefore, this was the area to work on in the six weeks of teaching to follow. After the pre-study assessment had taken place, Student 2 was assigned, at random, the piano technique principles of James Ching in relation to tone, touch and relaxation.

³⁵ For the purposes of this study, “to combine touches as required” means being able to play near the surface of the keys or to the keybed as the piece requires.

2.2 Discussion of Case Study 2

First movement from Sonatina in A minor, Op.88 No.3 by F. Kuhlau

James Ching's fundamental principles of teaching piano technique involve three bodily processes (1962, p. 2). These are:

- 1) the postures adopted,
- 2) the movements made,
- 3) the conditions (of tension and relaxation) brought into operation at the various joints of the body.

During the first lesson with Student 2, I began the lesson by emphasising the correct posture and sitting position, as stated by Ching (1962, p. 8) before she began playing. These included having the body inclined slightly forwards, the shoulder blades kept low, the forearm approximately horizontal and at right angles to the keyboard, and the back of the hand flat and not tilted towards the little finger side of the hand. Although this study did not deal with posture, knowing Ching's expectations of a correct posture would to an extent, contribute to the success of learning Ching's approach to tone, touch and relaxation in Student 2's playing.

Student 2 began playing the Sonatina with a *legato* touch, but appeared to be 'squeezing' the keys by the individual fingers into the keybed, known as 'keybedding' (Ching, 1962, p. 21). From my experience, this technique tends to produce uneven note values. In bars 1 and 2 (Fig. 4.16), the mordents were played with stiff fingertips, coupled with keybedding, and as a result were not rhythmically even.

Fig. 4.16 F. Kuhlau Op. 88 No. 3, bars 1-2



Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 5)

As the dynamic indication is *p* at this stage and it is a *legato* passage, the use of finger movement with firmness at the finger joints, ‘elasticity’³⁶ at the wrist and relaxation elsewhere, as recommended by Ching, should correct the unevenness of the mordents and avoid the ‘squeezing’ of keys into the keybed (Ching, 1962, p. 52). I gave a brief demonstration of ‘squeezing’ the keys, followed by how to play with firm fingertips without squeezing the keys. Thereafter, Student 2 was asked to play bars 1-3 again, as I held her right wrist gently, making sure it did not collapse downwards while playing. The fingertips remained curved and firm and the arms were relaxed, as Ching recommended for finger movement in *legato* passages. After several attempts of playing the mordents in this manner, Student 2 showed her understanding of what Ching meant to play with firm fingertips, with an ‘elastic’ wrist and relaxed arms. The mordents were articulated more rhythmically evenly as a result.

The descending scale passages in bars 9 and 11 (Fig. 4.17) were other areas of difficulty identified. These passages were not played rhythmically evenly, and the fingers displayed signs of tension as the little finger in the right hand was sticking up, clawed. Some notes were emphasised more than others, albeit unintentionally by Student 2. These passages were indicated ‘*dim*’ by the composer, and Student 2 knew she should be playing softer with the descent. As she tried to control the dynamics, Student 2’s shoulders became invariably tensed, and she began ‘keybedding’ again in her playing.

Fig. 4.17 F. Kuhlau Op. 88 No. 3, bars 9 & 11



Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 5)

³⁶ Ching’s notion of ‘elasticity’ at the wrist is that the wrist offers resistance downwards and no resistance upwards. That is, the wrist should not collapse under heavy pressure, and be able to bend upwards easily while the fingertips remain in contact with the keys (Ching, 1962, p. 50).

Teacher demonstration of how to correct problem areas encountered by the student is an integral part of the lesson content (as discussed in the previous chapter). Ching (1962, p. 25) also stated that ‘movements are best learned by imitation. The teacher should demonstrate the required movement and the student should then try to imitate it’.

I gave a demonstration on how to play bars 9 and 11 according to Ching’s second principal movement, which was the finger vertical movement (see section 3.1 of Chapter 2). First, the two middle joints of each finger must be firm for proper tone control. The wrist must remain quite firm and the other joints as loose as possible. The hand and arm should remain quiet, without any unnecessary movement taking place (Ching, 1962, p. 22). Student 2 tried Ching’s approach in her playing of this section with much success, and was able to eliminate the unevenness of rhythm through her daily practice in this way. For the control of tension at the shoulders, Ching (1962) recommended an exercise which involved moving the upper arm ‘away from and towards your body [as well as] moving it forwards and backwards’ (1962, p. 67). Student 2 practised this exercise during the lesson, and was then asked to repeat this exercise at home before practising the piano, as well as to be more conscious of tension at the shoulders when playing.

Bars 19-24 (Fig. 4.18) is a scale-like passage in C major culminating in four large chords marked *marcato*.

Fig. 4.18 F. Kuhlau Op. 88 No. 3, bars 19-24



For this passage, I reiterated adopting the finger vertical movement as before, and giving Student 2 the opportunity to practise the passage slowly with firm fingertips, a firm wrist, and with quiet hands and arms. The four chords at the end required Ching's first principal movement, also known as the whole-arm oblique movement (Ching, 1950, p. 36), used for chords, double notes and scale-like passages. This was essentially a 'thrusting' movement of the whole arm (Ching, 1962, p. 20) operating from the shoulder and elbow joints simultaneously. Ching stated that the wrist, knuckle and finger joints must be kept firm and immobile, and each movement must be aimed deeply into the keys (1962, p. 21). Because the chords were to be played *marcato*, Student 2 needed to use larger movements and more tension at the finger joints to play these. According to Ching:

The more loudly or the more rapidly (or both) the pianist has to play the more tension he has to have in operation at his joints; the more softly or the more slowly (or both) he has to play the less should be the amount of this tension (1950, p. 52).

After demonstrating on the piano how the chords should be played according to Ching's first principal movement, I gave Student 2 the opportunity to practise the chords using the same technique. Student 2 experimented with playing a chord loudly with more tension at all the joints, and the same chord softly with less tension at the joints. She found the concept of playing with firm joints for the entire passage of bars 19-24 made her quite stiff at the end. Although this did not help with unwanted tension, it was helpful to correct some of the unevenness of the semiquaver notes.

Bars 41-48 (Fig. 4.19) was the next area of difficulty Student 2 encountered in this work. Some of the chords in the left hand were not sounded clearly because of unwanted tension. While trying to keep the left hand chords soft, more tension was exerted than required. This passage was marked *delicato*, and although the whole arm oblique movement was applied here for the chords, Student 2 would require smaller movements, less tension in the wrist, knuckle and finger joints to play these chords delicately, a technique she eventually could apply after learning the correct joint movements.

Fig. 4.19 F. Kuhlau Op. 88 No. 3, bars 41-48

Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 7)

The passage, bars 51-54 (Fig. 4.20) was similar to the passage in bars 19-22 but in a different key, and Student 2 was again challenged to play such passages evenly in time using Ching's finger vertical movement with a sufficient degree of tension at the finger joints together with elasticity in the wrist. As this section, marked *crescendo*, increased in volume, Student 2 was reminded to increase the tension in the joints and using larger movements to play louder.

Fig. 4.20 F. Kuhlau Op. 88 No. 3, bars 51-54

Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 7)

The chords in bars 55-58 (Fig. 4.21), an extension of the chords that first occurred in bars 23-24, required the whole arm oblique movement to play. When Student 2 played this passage the first time, she lacked the tone quality that this passage required. There was insufficient contrast between the dynamics, marked *f marcato* in the first two bars and *p* in the next two bars. Student 2 was reminded to use more tension and larger movements as Ching had recommended, together with a thrusting action from the shoulder joints for the loud chords, and smaller movements and less tension for the soft chords. Student 2 practised using this approach for this passage both during the lessons and at home, after which she could execute these chords successfully with contrasting dynamics.

Fig. 4.21

F. Kuhlau Op. 88 No. 3, bars 55-58



Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 7)

A little coda (Fig. 4.22) at the end of this Sonatina marked *morendo* (dying away) was initially played too loudly by Student 2. Ching (1950, p. 94) advised that for the softest tone, the movements should be made as gently as possible, the wrist as high as possible and the fingers as straight as possible. Student 2 practised this passage using a high wrist after I demonstrated how to do so according to Ching's description. She found the sensation of playing with a high wrist rather uncomfortable, but realised that she could keep the tone soft when playing with a high wrist as there was less weight exerted on the keys.

Fig. 4.22 F. Kuhlau Op. 88 No. 3, bars 59-62



Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 7)

For the scale-like passage in bars 9-11 (see Fig. 4.17), Student 2 had learnt to apply Ching's approach of using a low wrist for the first loud note at the beginning of the passage and slowly moving on to a higher wrist as the passage became softer. However, this passage, and the similar one occurring in bars 51-54 (see Fig. 4.20) still presented some difficulty for Student 2, who could not play all the notes evenly in time. Although this study did not deal with the issue of practising, it was however necessary for Student 2 to know how to practise these passage which she found difficult. In the section on 'How to Practise Efficiently', Ching (1950, p. 104) recommended that 'increases of speed should always be made as gradually as possible' and that 'the metronome should be used'. Since the difficulty encountered in bars 51-54 had to do with speed and rhythm, I asked Student 2 to play the passage slowly at first, using the metronome, and gradually increasing the speed. This was done several times during each lesson, and written down in the student's diary to be followed up at home.

After several lessons, Student 2's use of Ching's whole arm oblique movement for the *forte* chords in bars 23-24 (see Fig. 4.18) still made the chords sound rather harsh. Although Ching mentioned that the whole arm oblique touch 'can be made to produce a harsh quality if it is used in an abnormally and unnecessarily percussive manner' (Ching, 1934, p. 102), he did not mention in his teachings how to balance the voices in a chord so that not all the notes sound loudly at the same time. On my own accord, I taught Student 2 how to listen to the internal balance of the chords, while demonstrating on the piano the leaning of the fingers towards the outer notes and playing the inner notes in a less percussive manner.

From my observation during the lessons, Student 2 seemed to be a visual learner, who learnt quickly when I demonstrated how a section was to be played according to Ching's principles. Student 2 was therefore given a lot of hands-on opportunities to practise the three difficult areas during the lesson so that she understood

what was required of her practice at home. She also had a keen aural sense, and was quick to discern the many dynamic contrasts she had to listen for when working out the touch forms to be used.

It became clear by the third week of teaching that three problem areas were recurring in the Kuhlau Sonatina. These were the mordents, the running scale-like passages, and the series of chords at the end of the scale-passage. The difficulty that Student 2 encountered when playing the mordents (see Fig. 4.16) in the first week recurred in the third week of teaching. The mordents were, once again, not clearly articulated. The first two notes of three in each mordent sounded 'stuck'. From a closer observation on how Student 2 played the mordents this week, I observed an upward movement of the wrist towards the G#, the note immediately after the first mordent. According to Ching (1962, p. 22), when using the finger vertical movement, as was the case here, no unnecessary upward or downward movement other than those of the fingers from the knuckles should be allowed to take place. The hand and arm should be quiet. Student 2's upward movement when playing the mordent created unnecessary tension which caused the notes not to sound clearly. I reminded Student 2 to keep her hand still and only use the fingers when playing the mordent. With a few demonstrations, followed by several hands-on practices by Student 2, there was improvement in the playing of the mordents, which were eventually more clearly articulated.

I noticed that the scale-like passages (bars 19-22 and bars 51-54) had improved over the course of the six weeks of teaching, with slow practice. These were articulated evenly as Student 2 used the right amount of firmness in her finger touch. Ching (1934, p. 15) stated:

Some degree of rigidity should invariably be in operation in connection... between the finger tip and that joint at which the touch movements take place.

Having used the correct amount of rigidity in her fingertips, and using smaller movements with slow practice, the notes of these scale-passages sounded more rhythmically even.

A marked improvement in the overall playing of this Sonatina occurred in the fifth and sixth weeks of teaching in this study. Student 2 had learnt to adopt Ching's approach of using varying amounts of tension depending on how much work was to be done (for example, whether playing forte or piano, chords or single notes), and relaxation when no notes were being played. She had learnt to use the whole arm

oblique touch for loud chords, and finger touch for the fast moving passages. She also knew how to balance the wrist action, using a higher wrist to play softer passages, and a lower wrist for louder passages. There was improvement in the playing of the mordents, which, by this stage, were articulated clearly using finger touch. The two passages of semiquaver runs (bars 19-22) were rhythmically even, showing that Student 2 understood how to apply Ching's principle of finger touch, the adjusting of the position of the wrist for *crescendo* and *decrescendo*, and keeping the back of the hand level. The chord passages in bars 23-24, and again in bars 55-58 were played with the whole arm oblique touch coupled with a downward thrusting movement from the shoulders. As a result, the chords sounded rich and strong, without being harsh. Most unnecessary tension had been eliminated in the playing of this Sonatina by the sixth week. The forearm still showed a bit of unwanted tension through the tensing of the muscles when playing the fast passages and chords.

From my observations, Student 2 had, in six weeks of learning, grasped the concepts of Ching's principles in tone, touch and relaxation, and applied them effectively in an eighteenth century piece.

'Von fremden Ländern und Menschen' (Of Foreign Lands and Peoples) No.1 from Kinderszenen, Op.15 by R. Schumann

As this nineteenth century work by Schumann is a short piece, Student 2 played through the entire piece during the first lesson, before I mentioned any problem areas to be worked on. *Of Foreign Lands* is in ternary form (ABA), and Student 2 had learnt the notes thoroughly for both the 'A' sections (bars 1-8 and bars 15-22) when she started in the first week of this study. However, she was still unfamiliar with the notes in section B (bars 9-14), and therefore tensed up in the finger joints when she tried to play the notes accurately.

This piece is in melody and accompaniment style, with wide leaps in both hands. In the first 'A' section (bars 1-8), which I would refer to as section 'A1', Student 2 played in a flowing *legato* style, emphasising the melody notes. However, the left hand accompaniment tended to be too loud at times. Ching addressed the issue of 'part playing' (1950, p. 88), which is playing more loudly in one hand than in the other, by recommending that the pianist make rigorous movements with the right hand and simultaneously very gentle ones with the left hand, on a table away from the piano. Student 2 had the opportunity to 'finger' the notes of bars 1-8 on a table, exaggerating

the right hand movements and keeping the left hand movements more subtle. Another exercise Ching recommended for part-playing is a five-note contrary motion scale in which the right hand played *forte* and the left hand, *piano* (see Fig. 4.23). Student 2 tried these exercises several times before playing the first 4 bars of the Schumann piece again, using larger movements in the right hand with firm finger joints, and small, gentle movements in the left hand, all the while 'aiming each movement deeply into the keys'. (Ching, 1962, p. 21) There was a better control of tone this time, and Student 2 was encouraged to repeat these exercises at home before practising this piece.

Fig. 4.23 5-note contrary motion scale exercise



Source: Ching, J., *The Amateur Pianist's Companion* (Oxford: Hall the Publisher Ltd., 1950, p. 91)

Although Ching included the forearm rotary movement as one of his four principal movements, he advised against using it, calling it the 'notorious forearm rotary movement of days now happily gone by'. (1962, p. 22) There were occasions which, according to Ching, this movement was allowed, and that included passages with wide spans, for example, notes spanning sixths or sevenths apart for a child, and broken octaves for adults (1962, p. 23).

Fig. 4.24

R. Schumann *Of Foreign Lands and Peoples*

Op. 15 No. 1 bars 1-2



Source: Grade 5 Selected Piano Exam Pieces 2009-2010

(2008, ABRSM Publishing, p. 14)

In *Of Foreign Lands*, both the right hand and left hand parts included leaps of sixths or sevenths apart (as shown in Fig. 4.24 above), and so forearm rotation had to be used for Student 2 to play the notes effectively. Keeping the knuckle and finger joints firm and immobile according to Ching's approach, I gave a demonstration on how to play the leaps using a slight forearm rotation from one note to another. However, I found this uncomfortable to play as I would prefer a freer hand and freer finger movements, together with a rotation of the hand towards the note G (see Fig. 4.24)

When Student 2 tried this out for herself, she found forearm rotation helpful in enabling her to reach the next note or chord easily. In fact, through my experience in piano teaching, I found that forearm rotation was essential in many movements in piano playing to prevent unnecessary tension, for example, passages with scales and arpeggios, alternating passages of moderate span, and *alberti* basses, all involved some form of rotation movement. From my observations, Ching's recommendation of 'keeping the knuckle and finger joints very firm and immobile' (1962, p. 23) to prevent forearm rotary movement 'from creeping into the child's technical process' (1962, p. 23) impeded freedom in playing, thereby creating unwanted tension.

Student 2 had to learn thoroughly the notes for section B (bars 9-14), as she was still unfamiliar with them. Ching's advice for practising for note learning was to 'practise in very small sections and with both hands together from the very beginning' (Ching, 1950, p. 102). Moreover, this had to be of 'the highest possible degree of accuracy in respect of notes, time and fingering' (1950, p. 103). Student 2 spent about ten minutes of the first two lessons learning and familiarising herself with the six bars of section B, hands together two bars at a time, to ensure accuracy. She was asked to

practise this section more thoroughly at home. As the issue of practising was not within the scope of this study, no further elaboration was needed.

In the subsequent lessons in this study, Student 2 discovered for herself the flaw in Ching's approach of not being able to use forearm rotary movement except for passages with wide spans of notes. In order to play *Of Foreign Lands* in a 'flowing' manner according to the mood of the piece, there had to be some form of rotary movement, no matter how slight, even for notes spanning less than a sixth apart, for example, in the right hand melodic line of bars 1-2 (see Fig.4.24), the tone of the melody would sound more fluent and *cantabile* when played with a slight rotary movement of the forearm than when played with very firm and immobile joints.

By the second lesson, Student 2 was applying the finger vertical movement for the right hand in both the 'A' sections for a *cantabile* tone. Based on her knowledge of different joint conditions for relaxation taught in the Kuhlau Sonatina, she was able to apply minimum tension for a whole section of the Schumann piece. (Fig. 4.25)

Fig. 4.25 R. Schumann *Of Foreign Lands and Peoples*
Op. 15 No. 1 bars 1-6



Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 14)

The left hand chords involved more of a stretch for a ten-year-old's hand, and the left shoulder was tensed as a result. As the left hand chords involved a lateral

movement of the arm (see Fig. 4.25), Ching said that lateral arm movements ‘will normally introduce some degree of rigidity at the shoulder joint’(1934, p. 84). Since Student 2 was already inherently quite stiff, allowing her to play with some degree of rigidity would only exacerbate this stiffness.

There was much unwanted tension in the wrists and finger joints when she played section B (bars 9-14) of the work. As this was essentially a quiet section of moderate speed, with a dynamic range of *p* leading to a slight crescendo at the end of this section (bar 14) (see Fig. 4.26), probably no louder than *mf*, the amount of firmness required at the joints should be less than that of a louder or faster passage (see chapter 2, section 3.3 on Relaxation).

Fig. 4.26

R. Schumann *Of Foreign Lands and Peoples*

Op. 15 No. 1 bar 14



Source: Grade 5 Selected Piano Exam Pieces 2009-2010
(2008, ABRSM Publishing, p. 14)

In her effort to reduce unwanted tension in section B, Student 2 was conscious to relax her joints when she played this section. As a result, some of the notes did not sound out, as there was no firmness in the finger joints. Ching said that if ‘sufficient rigidity is not put into operation for key depression, this results in loss of tone control’ (1934, p. 95). Student 2 was reminded of Ching’s approach of playing with a higher wrist in a soft passage to minimise pressure on the notes, but with a certain amount of firmness in the finger joints.

Rubato and musical expression were introduced into the piece so that it was stylistically appropriate, even though interpretation was not within the scope of this study. I demonstrated the use of *rubato* in this piece, and played at the appropriate speed (as Student 2 was still playing at a relatively slow speed). According to Ching (1934, p. 113), technique was a means of using a musical instrument (in this case, the piano) for

artistic expression, and therefore the factors of musical expression and piano technique were complementary.

When Student 2 performed *Of Foreign Lands* in the final lesson of this study, she showed her understanding of tone control, through using the appropriate amount of tension in the finger and knuckle joints, and transferring weight from finger to finger (Ching, 1934, p. 108) so that a cantabile tone was produced. She did so by bringing out the melody in the right hand using a forearm touch, while balancing the left hand accompaniment. She was able to use a low wrist for a louder tone, and a high wrist for a softer tone (Ching, 1934, p. 109). She employed a slight rotary movement for wide spans of notes as approved by Ching, but commented that she would have preferred more rotational freedom as it would have been easier to play the wide leaps. Student 2 did not eliminate tension completely in her playing, as Ching did not recommend playing without tension, but to have more tension for louder and faster passages, and less tension for softer and slower passages. Because the left hand accompaniment involved stretches between notes and lateral movements of the arm, Ching said this would inevitably cause some tension on the left shoulder. As Student 2 was learning Ching's piano technique principles, I did not emphasise correcting the tension on the left shoulder at this point.

After six weeks of learning Ching's approach in her two works, Student 2 presented these works once again to the same panel of examiners for assessment. The results of this assessment are presented in the tables below.

2.3 Post-Study Assessment Results

Table 4.9 Examiners' Post-Study Assessment Results:

Student 2 18th Century Work F. Kuhlau Sonatina in A minor Op.88 No.3

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	4	3	5	4
Tone: Dynamic Range	4	4	3	3.6
Touch: Type of Touch	2	3.5	3	2.8
Touch: General Finger Position	4	3.5	4	3.8
Relaxation: Tension Levels	2	3	4	3

Table 4.10 Examiners' Post-Study Assessment Results:

Student 2 19th Century Work R. Schumann *Of Foreign Lands and Peoples* No.1 from *Kinderscenen*, Op.15

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	4	4	5	4.3
Tone: Dynamic Range	5	3.5	3	3.8
Touch: Type of Touch	4	3	5	4
Touch: General Finger Position	5	4	5	4.7
Relaxation: Tension Levels	4	3.5	4	3.8

2.4 Summary of Case Study 2

Table 4.11

Results of pre-study and post-study assessments compared
Student 2 — 18th Century Work

Areas of Assessment	Average Score (out of 5)	
	Pre-study Assessment	Post-study Assessment
Tone: Quality	3.6	4
Tone: Dynamic Range	3.1	3.6
Touch: Type of Touch	3.8	2.8
Touch: General Finger Position	4	3.8
Relaxation: Tension Levels	2.8	3

Table 4.12

Results of pre-study and post-study assessments compared
Student 2 — 19th Century Work

Areas of Assessment	Average Score (out of 5)	
	Pre-study Assessment	Post-study Assessment
Tone: Quality	4	4.3
Tone: Dynamic Range	3.1	3.8
Touch: Type of Touch	3.6	4
Touch: General Finger Position	4.5	4.7
Relaxation: Tension Levels	2.9	3.8

Student 2's post-study assessment took place the week after the conclusion of six weeks of teaching based on the piano technique principles of James Ching, in relation to tone, touch and relaxation. This assessment was given by the same panel of examiners, and at the same piano studio as the pre-study assessment.

In comparison with the results of the pre-study assessment, Student 2 made improvements in the areas of tone quality, dynamic range, and relaxation for the Kuhlau Sonatina (see Table 4.11 above). In the area 'type of touch', Student 2 had, on average, one point lower than in the pre-study assessment. One of the examiners commented that Student 2 was playing too far above the keys due to a high wrist, when she should be playing more towards the keybed. Student 2 also had an average of 0.2 points lower in the area of 'touch: general finger position' for this assessment, as the examiners unanimously agreed that her fifth finger in the right hand was sticking up, clawed, during her playing of the Sonatina. This led to increased tension levels in her playing.

Another examiner commented that Student 2's elbow was a bit low, leading to playing with a low wrist for the chords in this piece. I explained to the examiners after this assessment, that one of Ching's principles was to play with a low wrist for loud chords, and a high wrist for softer passages, and therefore, Student 2 was playing according to Ching's recommendations.

For the nineteenth century piece, Student 2 obtained higher scores in all areas of tone, touch and relaxation in the post-study assessment. Her highest score was in the 'touch: general finger position' category, in which two of the examiners gave her a full score of five for a comfortable hand position.

Based on the examiners' results, Ching's approach to tone, touch and relaxation seemed to be more effective in the student's nineteenth century work as she obtained higher scores in this work. Student 2 commented that Ching's approach of having a slight tension in the fingertips when playing, having a high wrist for soft tone and a low wrist for loud tone, as well as using the whole-arm oblique movement for *legato* and *cantabile* playing, had helped with her overall awareness of a good tone, although playing with a high wrist felt rather uncomfortable.

Following the application of Ching's principles to both her pieces, Student 2 responded positively and with enthusiasm in her learning during the six weeks. She commented, 'I learnt a lot in this series of six lessons. I learnt that Ching's method consists of slight tension in the fingertips. To play softly, the wrist must be high, and to play loudly, the wrist must be low. This has helped my tone. I also learnt that legato is

like walking, transferring the weight from finger to finger. I find that Ching's method is useful and helpful for my piano playing.'

3. Case Study 3

Background

Student 3 was an eleven-year-old female student who has studied the piano for five years. Unlike Students 1 and 2, Student 3 had taken solely AMEB examinations for her Grades 1 to 3 piano examinations, in which she obtained a 'B+' for Grade 1, 'A' for Grade 2, and another 'B+' for Grade 3. An analysis of the examiners' comments on her result slips from her past piano examinations showed that Student 3 was above average in her musical abilities. One of the examiners commented that her pieces were 'performed with dynamic contrasts' (Grade 1); another wrote 'the tender character of the piece was well-realised' (Grade 2) and 'a musically pleasing performance' (Grade 3). Her scales and aural tests in the examinations also received favourable comments. She could have missed out on an A+ result because she did not perform as well in the general knowledge and sight-reading components, in which she lost most of her marks. Despite not having obtained an A+ grading for her examinations, Student 3 was not discouraged. In fact, she was a keen and motivated learner who viewed her participation in this study as an opportunity to improve her technical ability.

Student 3 had just started learning the repertoire for her Grade 4 AMEB examination, which was to take place at the end of the year. The two works she selected for this research study were set pieces from the Grade 4 examination syllabus. She had been studying these two works with her current piano teacher for less than three weeks, and therefore the playing of these works in relation to tone, touch and relaxation was still in the early stages and had not been formed.

Student 3's piano lessons with her current teacher focused mainly on the learning of set examination pieces for the particular year. Her teacher did not consider it necessary to learn any other repertoire other than those for the piano examination. In the area of piano technique, Student 3 was not assigned any technical exercises, etudes or studies by her piano teacher, other than the scales and arpeggios required for the piano examination. This student practised an average of forty-five minutes to an hour a day on her piano examination material, under the supervision of her mother who sat with her during her practice sessions.

For this study, Student 3 selected for her eighteenth century piece, the first movement of the Sonatina in C Major, Op.36, No.3, by Muzio Clementi (1752-1832). Her nineteenth century piece was *Chez le forgeron* (At the Blacksmith), No.5 from *Novelettes mignonnes* Op.8, by Samuila Moiseevich Maykapar (1867-1938). The latter is found in Series 15 of the Fourth Grade AMEB Piano Examination Grade Book (2002).

Like the other students, Student 3 took part in a pre-study assessment prior to the start of the 6-week teaching program, to evaluate her current state of playing in relation to tone, touch and relaxation. The results obtained for this assessment are tabulated below:

3.1 Pre-Study Assessment Results

Table 4.13 Examiners' Pre-Study Assessment Results:

Student 3 18th Century Work M. Clementi Sonatina in C Major Op.36, No. 3/i

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	3	2.5	3	2.8
Tone: Dynamic Range	2	2	3	2.3
Touch: Type of Touch	3	2.5	2	2.5
Touch: General Finger Position	5	4	5	4.6
Relaxation: Tension Levels	4	3	1	2.6

Table 4.14 Examiners' Pre-Study Assessment Results:

Student 3 19th Century Work S. Maykapar *At the Blacksmith* No. 5 from *Novelettes mignonnes*, Op. 8

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	5	3	1	3
Tone: Dynamic Range	4	2.5	4	3.5
Touch: Type of Touch	4	2.5	2	2.8
Touch: General Finger Position	5	3.5	5	4.5
Relaxation: Tension Levels	4	2.5	2	2.8

For the eighteenth century piece, Student 3 obtained the highest score in the area of 'touch: general finger position', with her hand and fingers comfortably positioned at all times throughout her playing. However, her playing at this early stage lacked the different dynamic levels the piece required. Playing with different types of touches, whether to go deeper into the keys, or to have a lighter touch, was another area to focus on. One of the examiners commented that Student 3 also displayed a 'slight stiffness which resulted in not having an expressive sound'. Another examiner added that 'the tempo of the piece fluctuates due to technical deficiencies; and also due to generally poor rhythmic sense'.

The overall result of the nineteenth century piece was better in all areas of assessment. However, none of the examiners gave any written comments about the performance of this piece. Once again, Student 3 displayed a comfortable hand position in her playing, as she scored the highest in this area, whilst the areas of 'type of touch' and 'relaxation' had to be worked on.

For the six weeks of teaching to follow, Student 3 was assigned at random, the piano technique principles according to Gát, to be applied in her two works. The effectiveness of Gát's approach in the teaching of tone, touch and relaxation was then

measured in the post-study assessment that took place after the six-week teaching program.

3.2 Discussion of Case Study 3

First movement from Sonatina in C Major, Op. 36 No. 3 by M. Clementi

Gát's (1980) primary condition of good piano playing is the ability to use the swing stroke accurately. This involves the awareness of a good body posture, which includes sitting on a firm piano bench, with the weight of the body on the bench so that the trunk moves freely, and the arms move unhindered. The seating position and posture of Student 3 were the first things I checked before commencing the first lesson, and at the start of each subsequent lesson. This included sitting not too far backward nor too near the edge of the chair (Gát, 1980, p. 50), and making sure Student 3 was leaning on her feet, with her body properly balanced on the chair.

Student 3 then proceeded to play her eighteenth century piece, which was the first movement of Clementi's Sonatina in C Major, Op. 36 No. 3. In the first lesson, Student 3 was not totally familiar with the notes, as this was a relatively new piece, studied for about three weeks. Some of the areas of difficulty Student 3 encountered during the first lesson could be related to unfamiliarity with the piece.

In the exposition section of this Sonatina, the semiquaver notes in bars 2 and 7, shown in Fig. 4.27, were played rather heavily, thus impeding the speed and elegance of the piece.

Fig. 4.27

M. Clementi Op. 36 No. 3, bars 2 & 7



Source: Sonatina Album (2007, Schirmer Performance Editions, p. 24)

On closer observation, Student 3 was playing with loose, flexed fingertips for the semiquavers, and consequently had no control over the evenness of rhythm and tone. Gát's teaching emphasises finger technique, which is appropriate for this passage. He said:

The most important subdivision of piano playing is finger technique. The work of the fingers is not only of great importance in the active swing-stroke of the fingers but also in transmitting the force of the arms to the keys. The incorrect action of a *single* [sic] finger may undermine the entire technique, while the development of finger technique has a favourable influence on the other playing forms, too. (Gát, 1980, p. 190)

According to Gát (1980), weak finger technique could be due to two reasons. One of the reasons was the passive arm. If the arm was not moving along with the fingers, it would not provide the support to aid velocity and expressiveness. Another reason for the weakness of fingers was caused by holding the knuckles stiff. This was due to training the arms to be independent of the fingers, and keeping the hand motionless when the fingers were at work. This concept was in line with the technique of the finger school described in chapter 2 of this study.

From my observation, it was more likely that Student 3's weak finger technique was due to the passive arm, as her arms were rather stiff and she was not moving the arm along with the fingers. The arm was not providing the 'elastic support' (Gát, 1980, p. 27) needed for speed and tone. Gát said that one of the prerequisites for good finger technique was in the anatomical structure of the pianist's hand and arm. A pianist with short, massive arms and short, thick fingers can transmit the force of the muscles more fully than one with long, thin fingers (Gát, 1980, p. 196). Student 3 happened to be a pianist with long, thin fingers, and for this type of anatomical structure, Gát recommended teaching the fingers to play with active finger ends, with the fleshy part of the fingers touching the key to execute the direct swing stroke, in order to 'pass on to the keys the weight-effect given by the arm' (Gát, 1980, p.196). In other words, the student must be able to feel the arm providing the support instead of merely relying on the movement of the fingers.

For bar 2 of the Sonatina, I gave a demonstration on how to move my arm laterally for the ascending semiquaver scales to ensure the smooth movement of the hand at the change of fingering, and Student 3 learnt this through observation, and through trying it on the piano. As with Ching, Gát also emphasised playing to the pupil when he stated:

Good playing by the teacher is not only helpful in developing the musical conception, but also an important sign-post towards attaining the proper mechanical balance on the part of the pupil (Gát, 1980, p. 270).

Through teacher demonstration the student could observe the appropriate movements needed to correct a technical problem. Similarly in bar 7, I demonstrated the use of arm movement (the support of the arm) with active finger tips to achieve a clearness of tone and evenness of rhythm in the semiquavers.

The next area of difficulty Student 3 encountered in the first few lessons was in the playing of staccato notes, found throughout the entire piece. Her staccato notes were not consistent in articulation, as some of them were shorter, and others sounded more legato than staccato. There was an obvious lack of control over the student's playing of staccato, for example, in bars 5 and 6 (see Fig. 4.28), where her staccato articulation sounded more like slurs, and in bars 24 and 25 (see Fig. 4.29), her staccato notes were too sharp and too short. Moreover, there was a sudden increase in speed from bars 24-26 towards the end of the exposition section (Fig. 4.29).

Fig. 4.28

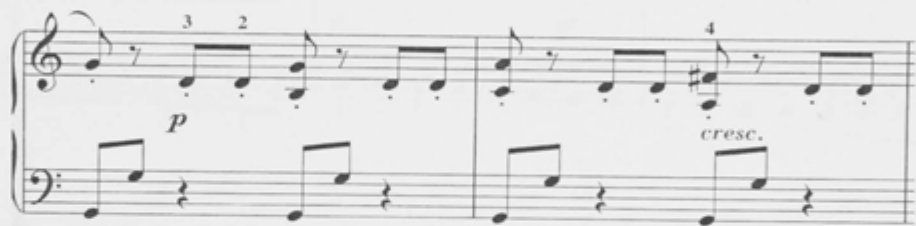
M. Clementi Op. 36 No. 3, bars 5-6



Source: Sonatina Album (2007, Schirmer Performance Editions, p. 24)

Fig. 4.29

M. Clementi Op. 36 No. 3, bars 24-25



Source: Sonatina Album (2007, Schirmer Performance Editions, p. 25)

Gát said ‘only upper arm or forearm swing strokes should be employed in staccato playing’ (1980, p. 73) because the fingers only were not suitable for staccato technique as they were not strong enough. The fingers should be felt as elongations of the arm. Again, I demonstrated how to use the forearm movement for a softer staccato touch, and the upper arm movement for a louder staccato touch. Student 3 tried this using her right hand only, and found this a difficult concept to grasp initially. Gát, in his book did not provide specific exercises or examples in the teaching of staccato technique to students. It was only through my demonstrations, and through several attempts of hands-on approach for the different passages with staccato that she eventually understood Gát’s approach to staccato playing using arm movement. Her practice task after the first lesson was to work on all the staccato notes in different passages in the piece, and the correct touch for them.

For the staccato chords in bars 43-48 (Fig. 4.30), Student 3’s difficulty was in bringing out the top notes of the chords in the right hand, which carried the melodic line. Instead her chords sounded weak through her use of passive fingertips and a

‘floppy’ wrist. Gát said ‘passive, loose finger-ends...result in unreliability of tone production’ (1980, p. 120). Student 3 was reminded to play with firm fingertips, with controlled movements in her wrist and using the swing stroke from the arm. To sound the tops notes clearly, I suggested leaning more towards the fifth finger while keeping the inner notes of the chords softer. A demonstration was given, after which Student 3 was given the opportunity to work on this several times until she understood how to play these chords in the appropriate style.

Fig. 4.30 M. Clementi Op. 36 No. 3, bars 43-48



Source: Sonatina Album (2007, Schirmer Performance Editions, p. 27)

Subsequent lessons saw an improvement in the playing of staccato passages as Student 3 learnt to start each staccato tone through a ‘vigorous touch’ (Gát, 1980, p. 70), as well as using arm movement to play staccato. This success was attributed to slow practice at home and during the lesson, and through constant reminders when staccato passages were being played.

Another area which Student 3 found difficult was in bars 22-23 (Fig. 4.31). Firstly, Student 3 could not align the semiquavers in the right hand with the quavers in the left hand. She had difficulty in getting the rhythm correct. Secondly she could not play the trill properly at the end of bar 23. Her trill was also too short as she could not manage to trill for a full minim value.

Fig. 4.31

M. Clementi Op. 36 No. 3, bars 22-23



Source: Sonatina Album (2007, Schirmer Performance Editions, p. 25)

Student 3's problem of aligning the semiquavers with the quavers showed a lack of control in her movements. Her fingertips were not firm and she was not using arm movement to play the notes. Gát said the energy we use to depress the key 'can be exactly apportioned by control...all our swing-strokes should be controlled' (1958/1980, p. 26). However, according to Gát, the control of the swing stroke is related to the melodic concept when he explained:

The more exactly we endeavour to follow the contours of the melody, the more intensively we imagine the corresponding tone colour, the more subtly and exactly will the control increase. (Gát, 1980, p. 26)

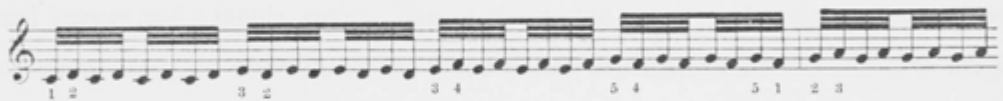
I asked Student 3 to play the right hand semiquavers of bars 22 and 23 using the swing stroke from the arm and with firm fingertips, following the contour of the melody, starting softly and as the melody ascended, to play louder. Correspondingly, as the melodic line dips, Student 3 was to play softer. With each successive attempt, Student 3 was to increase the tempo as well. Gát said 'the arm resistance must be increased... in proportion to any increase in tempo' (1980, p. 27). This required a gradual increase of muscle work as well. Student 3 was told to use more arm work in her playing of this passage. When she had mastered the task of playing the semiquavers, she then added in the left hand quavers, and after several attempts she could play them rhythmically in time.

As semiquaver passages occurred throughout the piece, Student 3 had to be conscious of using the swing stroke from the arm to play them. I suggested that for her home practice each day she play the semiquavers slowly at first, feeling the arm movement to the fingers, and bearing in mind the melodic contour, so that these passages could be played evenly and expressively as Gát explained.

The second problem discussed was the playing of the trill in bar 23. Student 3 slowed down in tempo when trying to play the trill as she did not know how to play a trill. Apparently, her current piano teacher did not teach Student 3 how to play a trill, because the teacher herself had difficulty playing trills. This fact was confirmed when I met with Student 3's mother for feedback after the first lesson, in which she told me that her daughter's teacher said to omit the trill when playing this section of the Sonatina, as she could not teach it effectively.

According to Gát's approach to playing trills, there must be 'exact apportioning of resistance [as] the slightest overburdening makes it slow and clumsy' (1980, p. 225). This meant that the fingers must be agile, and not be pressing into the keys. Gát recommended an exercise for evenness and uniformity of the trill, as shown below:

Fig. 4.32 Trill Exercise Example 73



Source: J. Gát, *The Technique of Piano Playing*, p. 228

However, Gát said such exercises 'do not ensure ease and agility in trilling' (1980, p. 228), and so the student should also practice 'free finger trills without any rhythmical arranging' (1980, p. 228) using an upper-arm stroke. Gát explained:

This cooperation with the upper arm gives the fingers a sense of sureness enabling them to execute the desired short trill with astonishing agility. (Gát, 1958/1980, p. 228)

Although Gát said the above exercise did not guarantee agility in trilling, I found that when Student 3 practised this trill exercise in the right hand, with firm fingertips and arm movement, and ensured that she did not press into the keys unnecessarily, she was able to execute the trill clearly and evenly. Student 3 also practised the 'free trill' without fixing the number of notes to be played, and applied this 'free trilling' approach in her playing. She played the trill in bar 23 of the Sonatina, disregarding the number of notes in the trill, but with an even left hand accompaniment. This helped the student to be less conscious of the trill, and be able to play it more comfortably. Two more sets of trills occurred in bars 56 and 61, and Student 3 approached them similarly. Her homework task for the next few weeks was to practise the trill exercise, as well as

practising to trill freely using the upper arm stroke. Through conscientious practice, Student 3 was able to master the trilling technique by the fourth lesson.

As for the sudden increase in speed in bars 24-26 discussed earlier, this was easily solved by tapping a steady pulse, and also using a metronome whilst Student 3 played several bars before this, until she reached bar 26. This was repeated several times until Student 3 could feel the pulse for herself, without speeding up unnecessarily. I noticed the unsteadiness of the pulse in her playing at certain sections (for example, bars 7, 15, 22, 51 and 60) of the Sonatina. This seemed to be a recurring problem in subsequent lessons. Although Gát did not mention the use of the metronome anywhere in his writings, I felt it was necessary to ask Student 3 to practise with the aid of the metronome at home. In my opinion, the student could not play musically without first correcting the underlying problem of an unsteady pulse.

From my observation in the first few lessons, Student 3 seemed to be both a visual learner and a tactile learner. She needed to see many teacher-demonstrations and have many hands-on attempts on the piano before she understood the concepts taught. Student 3 however, was not as aware in the auditory sense. This could be due to the fact that Student 3 was still at the early stages of learning the Sonatina, and hence she had not learnt to listen intently to the expressive and rhythmic qualities of the music. As such, she was still 'pounding' on the semiquavers in the second and third lessons. Her left hand accompaniment was too loud for a piece in melody and accompaniment style and she was also unaware that, in certain sections of the piece, the tempo was erratic because she could not feel a steady pulse.

In the fifth lesson of this study, I was disappointed to find that Student 3 had reverted to her old playing habits. Her fingertips were not firm. Care was not taken to play accurately and establish a steady pulse throughout the Sonatina. The trills were played haphazardly, with a disregard for the tempo, despite the fact that we worked very hard the previous weeks to establish a steady pulse and ensure accuracy of tempo. After the tremendous improvement seen in the previous lessons, the lesson in the fifth week showed a deterioration in standard. This might be attributed to several reasons such as the following:

- 1) Student 3 did not follow the guidelines laid out for her in her record book on how to practise;
- 2) Student 3 was tired of playing her two pieces over and over again;

- 3) Student 3 was suffering a bad cold and cough during this lesson, and this could have affected her concentration and her playing;
- 4) Gát's approach was not working for Student 3.

Based on progress and playing in the previous lessons, Student 3 appeared to have understood and was able to apply Gát's approach effectively in her playing. Her inability to play properly in this week's lesson was probably due to not putting much thought into her practices during the week, and not following Gát's principles to correct her areas of difficulty. This lesson was used to reinforce the relevant principles of Gát's teaching learnt in the previous weeks, such as having the body in an elastic state when playing, using firm fingertips, and using the direct swing stroke from the arm. Student 3 was also asked to put more thought into practising more musically, and not merely practising the notes mechanically. At the end of the fifth lesson, Student 3 was given a more detailed practice plan than for the previous weeks, so she could review the guidelines daily.

Student 3 made an immense improvement in the last lesson of this study, apart from minor faults which still had to be corrected, for example, her playing of the trill in bars 56 and 61 was still awkward and heavy. Gát called this type of playing 'overburdening' the trill (1980, p. 225), making it slow and clumsy. The fingers were not attaining agility because too much muscle force was used. Another minor problem was the erratic tempo in bars 24-26, and again in bars 46-48.

In spite of some minor problems that still persisted, it was my opinion that Gát's principles were followed, and improvement was made in the playing of the Sonatina in the following ways:

- 1) the finger tips were firm most of the time;
- 2) the arm was used effectively in the swing stroke and in playing chords;
- 3) the student was more aware of the contrasts in dynamic levels and could play more musically;
- 4) the fast, running passages were played more evenly;
- 5) the trills were executed more accurately in rhythm; and
- 6) there was an overall improvement in her tone.

Student 3's playing showed her understanding of Gát's technical principles and the ability to apply them effectively to her eighteenth century piece.

At the Blacksmith No. 5 from Novelettes mignonnes, Op. 8, by S. Maykapar

In relation to the areas of difficulty identified, this nineteenth century piece had significantly fewer problem areas than the Sonatina. Like the Sonatina, good tone production in certain sections of *Blacksmith* was inhibited by a lack of arm movement and firm finger joints in Student 3's playing. Wobbly finger joints impeded a '*martellato*' (hammered) effect intended by the composer, at bars 2 and 4 (Fig. 4.33) and other bars throughout the piece with a similar rhythmic motif (bars 12, 14, 35, 37 and 45). As mentioned before, Gát said passive, loose finger ends resulted in poor tone production (1980, p. 120). Student 3 needed to apply firmer finger tips for such passages, playing from the arms and applying a 'vigorous touch' (Gát, 1980, p. 70) to each staccato chord. Student 3 managed to create the 'hammered' effect after observing my demonstration, as well as recalling the sensation of arm movement and firm finger joints used in the Sonatina. A vigorous touch using the direct swing stroke further enhanced the character and energy within the piece

Fig. 4.33

S. Maykapar *At the Blacksmith* Op. 8, No. 5, bars 2 & 4



Source: AMEB Piano Fourth Grade (2002, All Music Publishing, p. 8)

This piece required a bright tone colour throughout, and Gát recommended two ways to achieve this. Firstly, by actively swinging the whole arm, instead of using just the fingers; and secondly, increasing the speed of the swinging unit and striking more

quickly using more force (1980, p. 27). The body must act as an elastic support to absorb the key rebounds, and thus must be in a 'relaxed and elastic state' but not a 'slumping state' (Gát, 1980, p. 27). Student 3 was more naturally relaxed when playing, as compared to Students 1 and 2. It was easy to remind her to keep her body relaxed, but more challenging to ensure that she played with strong arms and firm fingertips. This was done through constant reminders and demonstrations.

The difficulty with playing semiquavers evenly in time was another problem area Student 3 encountered in *Blacksmith* (bars 21, 23 25 and 27) (Fig. 4.34). The technique of playing with firm fingertips and arm movement was used to correct the unevenness of the semiquaver passages in the Sonatina. This technique was again applied here with effective results, with Student 3 playing the semiquavers slowly at first to feel the movement from the arm following the contour of the melody. She was subsequently able to play this at a faster tempo with an even rhythm.

Fig. 4.34 S. Maykapar *At the Blacksmith* Op. 8, No. 5, bars 21 & 23



Source: AMEB Piano Fourth Grade (2002, All Music Publishing, p. 9)

At the end of six weeks, Student 3 was playing with stronger fingertips, and making use of her whole arm to play, giving the *Blacksmith* a brighter tone quality. The

unevenness of the semiquaver rhythms (for example at bars 21 and 23) had been corrected. The chords in this piece were played with the whole arm using the direct swing stroke. Her progress in both pieces over this short, six-week period was a tremendous encouragement to her as she could see visible changes in her own playing. She had more control over her playing than before as she could play with steady rhythms and tempo. She had overcome the difficulty of playing trills, and her overall quality of tone in her playing had improved. From my observations, Gát's principles were effective in helping Student 3 improve in both her pieces.

The results of Student 3's post-study assessments for both works are presented below:

3.3 Post-Study Assessment Results

Table 4.15 Examiners' Post-Study Assessment Results:

Student 3 18th Century Work **M. Clementi Sonatina in C Major Op. 36 No. 3**

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	3	3.5	4	3.5
Tone: Dynamic Range	3	3.5	4	3.5
Touch: Type of Touch	4	4.5	2	3.5
Touch: General Finger Position	1	4.5	5	3.5
Relaxation: Tension Levels	2	3.5	2	2.5

Table 4.16 Examiners' Post-Study Assessment Results:

Student 3 **19th Century Work** **S. Maykapar** *At the Blacksmith* **No. 5** from
Novelettes mignonnes, Op. 8

Areas of Assessment	Score (Out of a Maximum of 5)			
	Examiner 1	Examiner 2	Examiner 3	Average
Tone: Quality	4	3.5	3	3.5
Tone: Dynamic Range	4	3	2	3
Touch: Type of Touch	5	4	3	4
Touch: General Finger Position	5	4.5	5	4.8
Relaxation: Tension Levels	5	3.5	2	3.5

From the post-study assessment results above, Student 3 showed consistency in her scores for the areas of 'tone' and 'touch' for the Clementi Sonatina. However, she achieved a lower score for 'relaxation' as she still displayed a certain amount of unwanted tension in her playing. In the *Blacksmith*, the examiners gave her a higher score in the area of 'touch: general finger position', as she no longer played with flexed and wobbly finger joints. Her 'tone: dynamic range' had the lowest score for this piece as there was not enough contrast in dynamics that this piece required. A summary of her pre and post-study assessment average scores can be compared in the tables below.

3.4 Summary of Case Study 3

Table 4.17

Results of pre-study and post-study assessments compared
Student 3 — 18th Century Work

Areas of Assessment	Average Score (out of 5)	
	Pre-study Assessment	Post-study Assessment
Tone: Quality	2.8	3.5
Tone: Dynamic Range	2.3	3.5
Touch: Type of Touch	2.5	3.5
Touch: General Finger Position	4.6	3.5
Relaxation: Tension Levels	2.6	2.5

Table 4.18

Results of pre-study and post-study assessments compared
Student3 — 19th Century Work

Areas of Assessment	Average Score (out of 5)	
	Pre-study Assessment	Post-study Assessment
Tone: Quality	3	3.5
Tone: Dynamic Range	3.5	3
Touch: Type of Touch	2.8	4
Touch: General Finger Position	4.5	4.8
Relaxation: Tension Levels	2.8	3.5

Comparing the results Student 3 obtained for her pre-study and post-study assessments, there was improvement in the majority of areas assessed, with slight deterioration over two areas in the Clementi Sonatina, namely 'Touch: General Finger Position' and 'Relaxation'; and one area in the *Blacksmith*, which was 'Tone: Dynamic Range'. The results showed the overall effectiveness of Gát's piano technique principles as applied to Student 3 over six weeks of teaching.

Summary

For six weeks, the three students worked diligently in their selected repertoire, approaching the areas of difficulty according to their assigned theorist's technical principles. There was much parental support and supervision during the process, and parents corroborated the students' accounts that more highly motivated practice was undertaken during the study period. One of the reasons was due to the fact that they were working towards their piano examinations, and thus viewed this study as one which would help them attain their desired results. Another reason was that the students were interested in learning new piano technique approaches which they had not come across before. Feedback from the students in this study was mainly positive. Student 1 commented, 'Matthay's method suits me very well. I'm more conscious of playing with less tension.' Student 2 was pleased with her ability to conquer fast passages. She said, 'I want to be able to play the fast, running notes in the Kuhlau (Sonatina). Ching's method of leaning forward, having firm and active fingers is very effective to enable me to do that.' Student 3 declared, 'I learnt how to approach the notes from above and I feel that my playing is smoother and better after learning Gát's approach.'

Following the six weeks of teaching and learning, a post-study comparison of the three students in relation to the three pedagogues' principles is given in the table below:

Table 4.19 Comparison of the Three Students in Relation to the Pedagogues' Principles After Six Weeks of Teaching

Student 1	• Learned the use of arm, hand and finger movements specified by the assigned pedagogue to achieve the desired tone. • Able to perceive and sense the exertion of pressure required on the keys. • Awareness of eliminating unwanted muscle tension through relaxation.
Student 2	• Learned the use of arm, hand and finger movements specified by the assigned pedagogue to achieve the desired tone. • Able to apply percussive and non-percussive touches as required using specific movements. • Learned to vary the amount of tension required, but never to completely relax when playing.
Student 3	• Learned to achieve the desired tone using dynamics and agogics, but not by using specific physical movements. • Able to understand the relationship between fingertip and key surface using direct and indirect swing stroke. • Learned to have a constant flow of energy, but never to completely relax when playing.

CHAPTER 5

CONCLUSIONS

This study sought to investigate the effectiveness of selected approaches in the teaching of specific elements of piano technique to pre-tertiary piano students. The piano technique principles of three theorists, in relation to the elements of tone, touch and relaxation, were explored. These three theorists were Tobias Matthay, James Ching and József Gát. Their principles were applied to selected repertoire in three case studies, with each theorist's approach randomly assigned to one student per case study. The repertoire was chosen from works being learned by the students at the time this study was carried out, and consisted in each case of an eighteenth century piece and a nineteenth century piece. The effectiveness of the theorists' approaches was determined by three sets of outcomes, namely, through independent assessments of each student's playing, the author's personal observations during the lessons, and student feedback.

The teaching program was implemented by this author over a period of six weeks, in which the piano technique principles of the assigned theorist were applied to help overcome areas of difficulty in relation to tone, touch and relaxation encountered within the student's repertoire. Explanations and demonstrations by the author, and hands-on activities by the student as prescribed by their assigned theorist, were part of the teaching process. My personal observations and student feedback were recorded during each lesson.

To gauge the students' performance standards before and after learning their assigned theorist's approach, a pre-study and a post-study assessment were completed. The assessments required the students to play the two chosen works for a panel of three independent examiners experienced in piano teaching and performing. The students were assessed in areas related to the elements of tone, touch and relaxation in their playing. The results from these two assessments were compared, as part of the process to determine the effectiveness of the approaches of Matthay, Ching and Gát.

This study therefore sought to answer the following research question:

How effective are the piano technique principles related to the three selected elements of tone, touch and relaxation, as expounded by each of the three selected theorists, when applied in a specific learning situation?

Discussion and Principal Findings

This study helps to establish a better understanding of different approaches to piano technique expounded in the 20th century. As many piano teachers may lack the knowledge regarding the skills of piano technique teaching, researching the contrasting technical approaches of Matthay, Ching and Gát, and how three pre-tertiary students responded to these approaches in case study terms, provides contextualized experiences to demonstrate to teachers the importance of acquiring the knowledge necessary in teaching piano technique to their students.

Although this study involved a small scale research, it was evident, based on the examiners' scores from the assessments, the observations of the author, and the positive feedback from the students, that changes were apparent in the students' playing after six weeks of learning a particular approach. This study allows us to gain insights into how pre-tertiary students learn the piano technique principles of a particular theorist, and how to correct technical difficulties encountered in their repertoire using these principles.

Comparing the examiners' scores given for the pre-study and post-study assessments, Student 1 improved significantly in all areas assessed in relation to tone, touch and relaxation, in both his pieces. This was most evident in the application of Matthay's touch movements in his playing, in which he improved a significant 2.7 points in the area of 'Touch: Type of Touch', from the pre-study assessment. There was only one area, namely 'Touch: General Finger Position' in the Chopin Waltz, in which the score remained unchanged for both assessments. 'Tone: Quality' for the Mozart Sonata and 'Tone: Dynamic Range' for the Chopin Waltz were the next most significantly improved areas. Both presented an improvement of 1.7 points from the previous assessment. Matthay's technique of relaxation worked better for the Mozart Sonata, with an improvement of 1.2 points, as compared to 0.2 points in the Chopin Waltz.

According to my personal observations, the most obvious improvement to Student 1's playing after six weeks, was his ability to eliminate, to a certain extent, the unwanted tension he started with in the first lesson. This ability to play freely in a more relaxed manner worked more effectively in the Chopin Waltz, as the piece was in a slower tempo. Student 1 was able to sense the key resistance, use a clinging finger attitude for the melodies and carry his forearm in a poised manner, in keeping with Matthay's principles.

There was an overall improvement in Student 1's playing of the Mozart Sonata after six weeks. In particular, he was able to apply whole arm weight and rotation movements effectively, thus improving the tone and speed of this work. Sensing the resistance of the keys and relaxing after each tone production proved to be a challenge for Student 1 in the Mozart Sonata due to its fast tempo. Nevertheless, this could still be done during a slow practice of this piece.

Student 1 commented positively that Matthay's approach enabled him to play the Sonata in a more relaxed manner, and that his tone for the Waltz had improved. He summed this up by saying, 'I feel that I have improved in my playing using Matthay's approach as I could bring out the tone, and relax more'. The efficacy of Matthay's approach to piano technique is evident from the positive outcomes stated above.

Student 2 was the next best in terms of achievement level in this study, with improvement in all areas assessed, except 'Touch: General Finger Position' in her Kuhlau Sonatina, which had a slight deterioration of 0.2 points from the initial assessment, due to her playing with a clawed fifth finger in her right hand. Being the next best in achievement level among the three students was significant for Student 2 given that piano was her second instrument (with violin as her first), and that she was the youngest subject in this research. Student 2's age factor did not hinder her from learning a new technical approach in six weeks; neither did having to practise two different instruments daily. Her slight deterioration in 'Touch: General Finger Position' could also be due to the limited time of the teaching program to master this aspect of technique, as she had acquired the habit of playing with a clawed fifth finger, or it could be that Ching's approach to touch was not as effective in meeting the student's learning needs.

All the areas assessed in Student 2's playing of Schumann's *Of Foreign Lands* showed an improvement in results when compared with the pre-study assessment, with the most significant in 'Relaxation', at 0.9 points, as compared with the other areas. Her 'Tone: Dynamic Range' improved 0.7 points, and 'Touch: Type of Touch' was the next best with 0.4 points. In the Kuhlau Sonatina, the most significant improvement was in 'Touch: Type of Touch', for which Student 2 achieved a 1 point improvement, followed by 'Tone: Dynamic Range' at 0.5 points and 'Tone: Quality' at 0.4 points.

Compared with Student 1, who showed an improvement of up to 2.7 points, there was less of a significant difference found between scores allocated to Student 2 in both her assessments, with most scores showing improvement levels of up to 0.5 points

only. Nevertheless, an improvement was still made over six weeks of teaching and learning a new technical approach.

My view is that Student 2, like Student 1, played with much unwanted tension. Although there was improvement in tone and touch after six weeks, I observed that unwanted tension was still an underlying issue throughout her playing. Her fifth finger joint was often in a 'clawed' position, and I often observed tension in her forearm and wrist joint. The fact that Ching's approach was to maintain rigidity in the joints did not help to eradicate Student 2's problem with unwanted tension. Being a young student, she often did not know how to regulate the amount of tension needed in the joints to play a certain type of passage, and thus she sometimes applied more tension than was needed. Ching's other technical principles, such as whole-arm oblique movement, and weight transfer from finger to finger, were effective in helping Student 2 produce a good tone in both her pieces. Most aspects of Ching's approach were helpful in enabling Student 2 to improve in her playing.

Student 2 felt that Ching's approach was effective in helping her play fast running passages evenly in time. She commented that having some form of rigidity in her finger tips when playing, using a high wrist for soft tones and a low wrist for loud tones, the principal movements of the arms and fingers, and the weight transfer technique, helped her improve in her tone. Student 2 was always positive in giving her weekly feedback, as she concluded by saying, 'I learnt a lot in this series of six lessons. I find that Ching's method is useful and helpful in my piano playing.'

Based on the examiners' results and according to my discussion with the examiners at the end of the post-study assessment, they were of the consensus that Student 3 was the least technically proficient among the three students after six weeks of teaching and learning, with three areas in the post-study assessment which deteriorated in standard from the initial assessment. For her Clementi Sonatina, 'Touch: General Finger Position' and 'Relaxation: Tension Levels' were two areas that attained lower scores in the post-study assessment. These areas deteriorated 1.1 points and a less significant 0.1 points respectively. For her nineteenth century piece *At the Blacksmith*, 'Tone: Dynamic Range' was the only area that had a lower score from the previous assessment, with a deterioration of 0.5 points. However, all other areas assessed showed improvement.

For the Clementi Sonatina, 'Tone: Dynamic Range' improved 1.2 points, and 'Touch: Type of Touch' improved 1 point. In Maykapar's *At the Blacksmith*, 'Touch:

Type of Touch' showed the most significant improvement at 1.2 points, while 'Relaxation' was the next most improved at 0.7 points. 'Tone: Quality' showed an improvement of 0.5 points.

Student 3 was not as technically or musically proficient as Students 1 and 2 at the beginning of this research (as shown in her piano examination results), but she still responded positively to the piano technique principles of her assigned theorist to achieve quite a significant level of improvement in certain areas of her repertoire. Being less technically proficient than the other two students to begin with, the six weeks of teaching program might have been insufficient time for Student 3 to fully grasp Gát's concepts of tone and touch for her pieces, or that the results from the post-study assessment were independent of Gát's principles in part. Nevertheless, Student 3 gave some positive feedback regarding the learning of Gát's approach. She commented, 'I learnt to use active fingers for the staccato and semiquaver notes and to keep my fingers up when playing. This makes me feel stronger in my fingers when I play. I'm happy that Gát's method helps me play the trill in my Sonatina'.

Each of the three approaches analysed and applied to the case studies has its own flaws and commendable aspects. Matthay's approach, which is in line with the relaxation school, was randomly assigned to a student who was inherently tensed in his playing. Matthay's technique of playing with poised arms, feeling the keys before striking, and exerting a downward motion of the arms when playing, as well as relaxing between the sounding of notes helped Student 1 deal with unwanted tension. Moreover, Matthay's attention to the physiological details exemplified in the three species of touch for tone production, and the forearm rotation element, contributed to helping Student 1 play his pieces easily and more effectively.

The use of arm weight according to Matthay's principle helped Student 1 play certain passages with a good tone, and in a relaxed manner. Thus, Student 1 might have shown the most improvement in this study because he was assigned the approach to technique which best suited his learning needs.

Ching's approach of using whole arm movements helped in good tone production for Student 2, however, his restriction against using forearm rotary movements inhibited a natural movement of the arm across the keyboard, and thus caused some stiffness in Student 2's playing. His concept of playing with a high wrist for softer passages and a low wrist for louder passages caused some discomfort in playing. Moreover, his approach of separating music from technique did not help in

training the musical ability of Student 2 in relation to the pieces played throughout the teaching program.

Although Student 2 responded positively to Ching's approach, and showed an improvement in her overall playing, it could be that the improvement was due to the process of learning and not solely based on the approach. In my opinion this approach was not sufficiently viable to help Student 2 improve significantly in her piano playing.

Student 3 embarked on this study with a weaker technical ability than Students 1 and 2. She played mostly with a 'floppy' wrist and weak finger tips. Moreover, she studied with a piano teacher who was not proficient in teaching her certain technical aspects such as playing trills. Gát's approach with its emphasis on playing with firm finger joints, and with controlled movements in the wrist, helped Student 3 gain more control over her own playing. His emphasis on involving the whole body in every aspect of playing, with a flexible trunk, use of the shoulders and arms, balanced wrists, firm fingers, and elasticity in the body instead of relaxation, contributed to developing the motor skills of Student 3 to accommodate to the mechanisms of the piano. His concept of the swing stroke from the arm was effective in helping Student 3 improve in her tone quality and enabled her to play more expressively. Gát's principles mostly addressed the learning needs of this particular student.

The three-fold outcomes of this study show that the piano technique elements of tone, touch and relaxation as expounded by different theorists could be learnt by pre-tertiary students and applied successfully to their repertoire. The effectiveness of each approach is reinforced by the improvement in results of the assessments and also by the positive comments of the students. Since all three approaches have their merits in helping pre-tertiary students improve in their piano technique, it would therefore be advisable to combine the most relevant and useful aspects of each theorist's principles into teaching strategies to help students towards a successful and musical performance.

Recommendations for Further Research

The following are recommended as suggestions to expand the research in the teaching of piano technique to pre-tertiary students.

1. Replicate this study with the same students, assigning a different theorist and comparing the outcomes.

2. Choose a larger sample of students for each approach to piano technique, and employ a similar teaching program. Include pre-tertiary students of various ages and abilities.
3. Have a period that is significantly longer than six weeks for the teaching program.
4. Replicate this study to include other piano teachers in the teaching program, each one teaching several different approaches of piano technique to test the effectiveness of each approach.
5. Survey the approaches of other well-known piano technique theorists to include in the teaching program, such as, for example, Otto Ortmann, Arnold Schultz and Joan Last, and study other elements of piano technique such as posture and pedalling.
6. That the teaching program be expanded to include repertoire of other periods such as the Baroque era and early twentieth century piano works.

These recommendations offer great scope for further research to expose piano teachers to other approaches in piano technique principles and to test the effectiveness of each approach on pre-tertiary students of all abilities. Such research is necessary in order that teachers will be well-informed of a wealth of piano technique principles to teach students of all learning needs and abilities.

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APPENDIX A

STUDENT INFORMATION SHEET

Lay Yen Soh, Principal Investigator
School of Music
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The Application of Selected Approaches in Relation to the Elements
Tone, Touch and Relaxation in the Teaching of Piano Technique: 3 Case
Studies

Dear Student,

I am a Master of Philosophy student under the supervision of Dr Geoffrey Lancaster and Dr Hazel Hall at the Australian National University School of Music. I would like to invite you to participate in my dissertation research entitled "The Application of Selected Schools of Thought in Relation to the Elements *Tone, Touch and Relaxation* in the Teaching of Piano Technique: 3 Case Studies."

In this study, I will be analysing what 3 different piano technique authors wrote about tone, touch and relaxation, and applying these methods to teaching 3 different piano students. Participation in this study involves an initial informal assessment with 3 piano teachers from the School of Music, whereby you will play 2 pieces, one from the 18th century and one from the 19th century. You will be graded in your playing, in terms of your tone, touch and relaxation.

After this assessment, you will have 6 piano lessons with me, each lasting 30 minutes, whereby I will be teaching you the 2 pieces according to the method of one of the piano technique authors. We will draw lots to decide which of the technique methods you will get. When you have completed the 6 lessons with me, you will once again be assessed by the School of Music piano teachers to see whether there are changes in your playing in terms of your tone, touch and relaxation.

I will be videotaping and audio recording each of the piano lessons, and you will be asked permission for this before we begin. You may request to stop either recording should you feel uncomfortable at any stage. These tapes will be used for educational purposes only.

All information collected will be kept confidential, and you will be given a number (e.g. Student 1) instead of your name to protect your privacy. There are no foreseeable risks in participation in this study. Participation for you is voluntary, and you may discontinue participation at any time without penalty.

If you wish to participate in this study, please fill in the Student Assent Form attached.

If you have any questions about this research project, please feel free to call me at 0400023669 or email me at LayYen.Soh@anu.edu.au You may also contact any of my

supervisors at the ANU via email at Geoffrey.Lancaster@anu.edu.au or Hazel.Hall@anu.edu.au. Questions about your rights as a participant or concerns about this project should be directed to the Office of Research Integrity at 02 6125 4290 or email human.ethics.officer@anu.edu.au

Thank you for your consideration.

Yours sincerely,

Lay Yen Soh

APPENDIX B**STUDENT ASSENT FORM**

The Application of Selected Approaches in Relation to the Elements *Tone, Touch and Relaxation* in the Teaching of Piano Technique: 3 Case Studies

Lay Yen Soh
Principal Investigator

(Circle one)

Yes No I agree to allow Ms Soh to videotape and audiotape my lessons with her, knowing that I can ask her to stop videotaping or audiotaping anytime.

(Circle one)

Yes No I agree to allow Ms Soh to keep the video and audio tapes for use in educational purposes only as part of her project.

(Circle one)

Yes No I agree to being assessed in my piano playing by a panel of ANU School of Music piano teachers, knowing that it will be in an informal, studio setting.

Signature of Student

Name of Student

Date

APPENDIX C

PARENT INFORMATION AND CONSENT FORM

Lay Yen Soh, Principal Investigator
 School of Music
 Australian National University

The Application of Selected Approaches in Relation to the Elements
Tone, Touch and Relaxation in the Teaching of Piano Technique: 3 Case
 Studies

Dear Parent,

I am a Master of Philosophy student under the supervision of Dr Geoffrey Lancaster and Dr Hazel Hall at the Australian National University School of Music. I would like to invite your child to participate in my dissertation research entitled "The Application of Selected Approaches in Relation to the Elements *Tone, Touch and Relaxation* in the Teaching of Piano Technique: 3 Case Studies."

In this qualitative research, I will analyse what three piano technique theorists wrote about tone, touch and relaxation, and apply their methods in the teaching of three pre-tertiary piano students. Each student will be assigned the method of one theorist by drawing lots. This study is being conducted to discover how successful each of the theorists' method is, and to provide a clearer understanding of the best approach of teaching piano technique to students.

Your child will participate in a series of six weekly piano lessons with me. Each lesson is of 45 to 60 minutes duration. There will be an assessment prior to the commencement of the first lesson, by a panel of independent examiners from the ANU School of Music, all of whom are professional piano teachers. During the assessment, your child will play two piano pieces, one from the 18th century, and one from the 19th century. The examiners will grade your child in terms of his/her Tone, Touch and Relaxation.

Thereafter, I will be teaching your child according to the method of one theorist over a period of six weeks. After the six lessons, your child will be assessed once again by the same panel of examiners to see whether there are any changes to his/her Tone, Touch and Relaxation.

Participation in this study consists of allowing me to videotape and audiotape each of your child's lessons with me. All information collected from this research project will be kept strictly confidential, as will all video and audio recordings. No names will be identified or published. Your child will be given a number (e.g. Student 1) instead of his/her name to protect your child's privacy. Only information directly related to the technical issues I am investigating will be published.

There are no foreseeable risks involved in participating in this study. Participation for you and your child is voluntary, and you or your child may withdraw from participation in the research at any stage without penalty.

If you have any questions, you may call me at 040 002 3669 or via email at LayYen.Soh@anu.edu.au. You may also contact any of my supervisors at the ANU via email at Geoffrey.Lancaster@anu.edu.au or Hazel.Hall@anu.edu.au. Questions about your rights as a research participant or concerns about this project should be directed to the Office of Research Integrity at 02 6125 4290 or email human.ethics.officer@anu.edu.au

Yours sincerely,

Lay Yen Soh

CERTIFICATE OF CONSENT

The Application of Selected Schools of Thought in Relation to the
Elements *Tone, Touch and Relaxation* in the Teaching of Piano
Technique: 3 Case Studies

(Circle one)

Yes No I consent to the use of videotape and audiotape during my child's
piano lesson.

(Circle one)

Yes No I give consent for the videotapes and audiotapes to be retained by
the principal investigator of this research study to be used for educational, non-
commercial purposes.

*I have read and understood the terms and conditions of this study, and I hereby agree to
participate in the above research study. I understand my participation is voluntary and
that I may withdraw at any time without penalty.*

Signature of Parent

Print Name of Parent

Name of Child

Date

APPENDIX D

Dear Ms LayYen Soh,

Protocol: 2009/467

The Application of Selected Schools of Thought in Relation to the Elements Tone, Touch and Relaxation in the Teaching of Piano Technique: 3 Case Studies.

I am pleased to advise you that your Human Ethics protocol received approval by the Chair of the Hum and SS DERC on 15/10/2009.

For your information:

1. Under the NHMRC/AVCC National Statement on Ethical Conduct in Human Research we are required to follow up research that we have approved. Once a year (or sooner for short projects) we shall request a brief report on any ethical issues which may have arisen during your research or whether it proceeded according to the plan outlined in the above protocol.
2. Please notify the committee of any changes to your protocol in the course of your research, and when you complete or cease working on the project.
3. Please notify the Committee immediately if any unforeseen events occur that might affect continued ethical acceptability of the research work.
4. The validity of the current approval is five years' maximum from the date shown approved. For longer projects you are required to seek renewed approval from the Committee.

All the best with your research,

Kim

Ms Kim Tiffen

Ethics Manager

Office of Research Integrity

Research Office

Chancelry 10B

The Australian National University

ACTON ACT 0200

T: +61 2 6125 3427

F: +61 2 6125 4807

Kim.Tiffen@anu.edu.au or

human.ethics.officer@anu.edu.au

http://anu.edu.au/ro/ORI/Human/human_index.php

CRISCOS Provider Code: 00120C

APPENDIX E

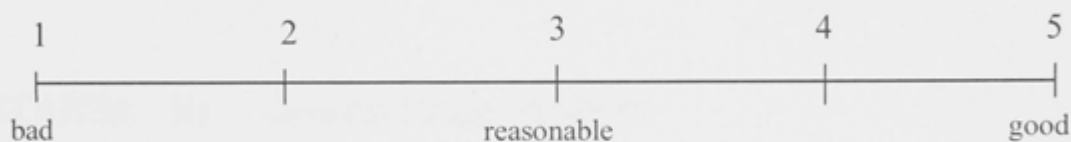
EXAMINER'S GRADE SHEET

STUDENT ____
18th / 19th Century Work

TONE

Please circle the appropriate score

TONE: i) Quality



TONE: ii) Dynamic Range



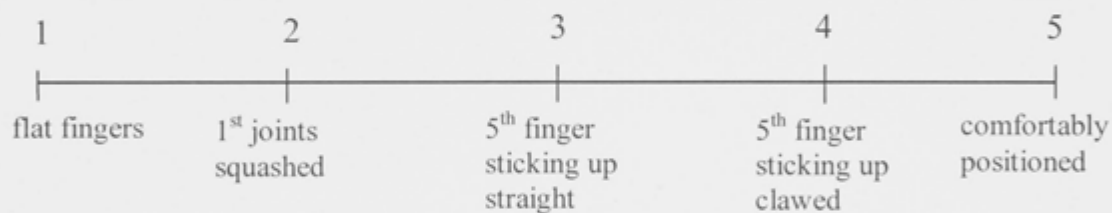
TOUCH

Please circle the appropriate score

TOUCH: i) Type of touch



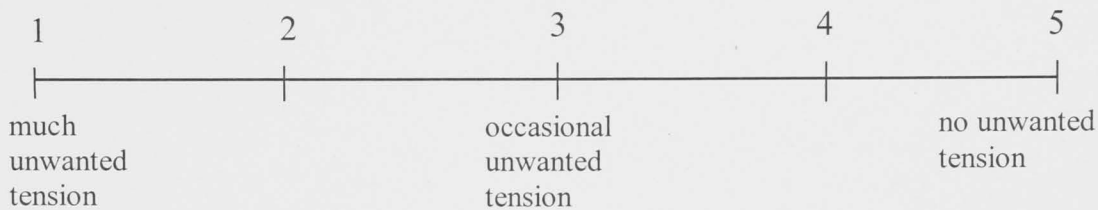
TOUCH: ii) General Finger Position



RELAXATION

Please circle the appropriate score

RELAXATION : Tension Levels



Other comments (if any):

Name of Examiner: _____

Date: _____

APPENDIX F

STUDENT PRACTICE RECORD

Lesson No. _____

Date _____

1. 18th Century Piece

Bar NumbersTechnique Applied

2. 19th Century Piece

Bar NumbersTechnique Applied

3. Things to Note

4. Parent's Signature _____

APPENDIX G

STUDENT LESSON DIARY

Week	Pieces	Comments/Reactions
1		
2		
3		

Week	Pieces	Comments/Reactions
4		
5		
6		