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BOSTON UNIVERSITY

COLLEGE OF FINE ARTS

Dissertation

AURAL MODELING AND MENTAL REPRESENTATIONS TO ELICIT YOUNG STUDENTS' METACOGNITIVE RESPONSES IN DEVELOPING EXPRESSIVITY AT THE PIANO

by

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DEDICATION

This doctoral thesis is dedicated to my mother Jacqueline Bonnaire and to the memory of my late father, Taylor Bonnaire, to whom I owe all that I have become. Thank you for your unconditional love and unwavering belief in me.

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ABSTRACT

The purpose of this empirical study, whose theoretical framework is based on Bandura's (1986) social cognitive theory, was to investigate the effectiveness of including a metacognitive approach in teaching expressivity at the piano. The effect of metacognition, combined with that of aural modeling and aesthetic and stylistic mental representations, was assessed regarding the promotion of a higher-order thinking, one that fosters the development of musical expressivity in young pianists. From a social cognitive theory perspective, metacognition is defined as the aptitude to reflect on one's own thinking to assess and find the most appropriate course of action to control performance of a task (Bandura, 1986; Flavell, 1979). Equally important in the social cognitive theory is the concept of modeling, which is based on the idea that one can learn new skills by observing another individual's actions. In turn, the mental representations of the observed tasks function to guide the learner's performance (Bandura, 1986). Results highlighted the central role played by aural modeling. The aesthetic and stylistic mental representations in the metacognitive process allowed young pianists to elicit an expressive musical idiom through a mental conversion process. The constructs of aural

modeling and of aesthetic and stylistic mental representations, along with that of musical phraseology, functioned both independently and in conjunction with each other. They provided students with a mechanism with which to reflect on ways to adjust expressivity in their playing. Results also indicated a positive influence of the above constructs on the overall performance of young pianists.

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CHAPTER 1
INTRODUCTION

The development of educational strategies aimed at fostering effective teaching in instrumental music has been the focus of several studies that explore various aspects of cognition as well as specific spheres of musical practice. One such sphere concerns musical expression, broadly described as the manner in which one is able to convey the meaning of a musical work. Common methods of instrumental teaching include eliciting musical expression from the students. These methods are usually employed based on a behaviorist, teacher-focused approach (Broomhead, 2005; Karlsson & Juslin, 2008; McPhee, 2011). Although these methods present practical initial advantages for grasping musical expressiveness, they also overlook students' capacity to explore their investigative and experiential aptitudes within the complex phases of learning.

Conversely, the use of metacognition is an approach that effectively takes into consideration these capabilities by placing students at the center of their learning. Metacognition achieves this by allowing them to gain ownership of their intellectual processes. Through such experiential learning, students are afforded the tools necessary to actively explore and decide how they convey their musical expressiveness. Based on the premises developed by Bandura's (1986) social cognitive theory—specifically drawing from the theory's feature of humans' self-reflective aptitude, also found in Flavell's writings (1979)—metacognition "enables people to analyze their experiences and to think about their own thought processes" (Bandura, 1986, p. 21). Bandura further stated unambiguously that

> If there is any characteristic that is distinctively human, it is the capability for reflective self-consciousness. This enables people to analyze their experiences and to think about their own thought processes. By reflecting on their varied experiences and on what they know, they can derive generic knowledge about themselves and the world around them. People not only gain understanding through reflection, they evaluate and alter their own thinking. (p. 21)

In that regard, two specific aspects of the theory were used in this study, namely modeling and mental representations.

Statement of the Problem

Several studies on music learning processes have highlighted clear connections between the development of cognitive abilities and early musical instruction. These studies have further stressed the importance of capitalizing on sensitive phases and critical learning windows related to the mental processes through which young children learn particular musical tasks. For example, studies in musical expression have revealed the cognitive relationships concerning physical capabilities, listening to a model, and the mental representations through which they are mediated (Ericson, 1993; Gabrielsson, 1999; Palmer, 1992). According to Goins (2006), “one effective teaching approach that takes into account these representations is that of modeling” (p. 1). Bandura (1986) explained that through the observation of a model, students produce internalized representations of the task that can positively influence their achievement. Such representations operate as a prescription that directs their action. Bandura observed, “Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (p. 47).

Similarly, Frewen (2010) indicated that "modeling is effective because it allows learners to have an accurate representation of their target goal and use that representation to guide their practice, identify errors, and self-correct" (p. 321). Scholars have consistently highlighted the effectiveness of modeling as a teaching strategy (Dickey, 1992; Sang, 1987; Siebnaler, 1997), but illustrations through actual demonstration are not traditionally used by piano teachers (Dickey, 1992; Goins, 2006). Instead, in many lessons, teachers strongly emphasize the acquisition of skills through technical drills (Goins, 2006; Watson, 2006). The use of such methods appears to contradict research findings that the processes involved in learned auditory representations happen more rapidly than the processes of relying solely on motor representations in the phases of encoding and retrieval of information (Brown & Palmer, 2013). Consequently, teachers who fail to acknowledge the significance of auditory representations in learning to perform motor sequences or projection of expressivity may not be utilizing the most effective teaching strategies. Such consideration is particularly important when considering that musicianship involves not only the projection of emotions, but also the sensory-motor skills that mediate musical expressivity. As stated in Brown and Palmer (2013), "skilled performance in sensorimotor tasks such as athletic or music performance involves a close coupling of actions with sensory outcomes" (p. 1).

Although the advantages of modeling have been illustrated through numerous studies, this strategy alone may not necessarily be sufficient to allow students to understand the processes involved in accomplishing a musical task. As teachers use modeling to scaffold their students' learning processes by supplying their own expertise, they may run the risk of neglecting the initial stages in which students can reflect on their own cognitive processes. These processes are aimed at facilitating construction and transferal of concept-driven knowledge (Broomhead, 2005). Such early stages involve metacognition, a conscious understanding of the processes one needs to meet a task requirement (Hallam, 2001a, 2001b). Metacognition entails active reflection on the strategies best suited to one's physical and mental ways of learning and on the projection of expressive experience. The emotional involvement in musical performance calls for a process through which conceptualized musical ideas are translated into concrete musical features.

Various scholars have noted the contrast found in both the private studio and in music classrooms between the importance given to solving the instrumental-technical issues and the lack of promotion of strategies aimed at developing expressivity (Hultberg, 2007; Nielsen, 1999). Given that the ability to perform expressively (both by projecting one's emotions and by deviating from timing and pitch notations) is considered of paramount importance in music (Gabrielsson & Juslin, 1996; Woody, 2000, 2003), it comes as a paradox that this aspect is generally overlooked during instruction. Hultberg (2007) observed that the concept of musical expression is not easy to comprehend; woven into the uniqueness of the musician's character, it is perceived as an innate capability (Karlsson & Juslin, 2008). On the other hand, because of its mostly implicit nature, musical expression may appear challenging to teach (Juslin & Persson, 2002).

Consequently, this may account for its neglect during music lessons (Rostvall & West, 2003). Encouraging a metacognitive approach aimed at delineating the students' responsibility to make informed choices might allow students to engage in creative ways outside the confines of current teaching strategies. Teachers who consider the importance of situating novice musicians at the center of their learning processes through a metacognitive approach might therefore be fostering the most efficient educational practices when addressing expressivity.

Rationale

Although studies have investigated the effect of auditory modeling in music and of motor learning (Goins, 2006; Sang, 1987; Watson, 2006; Woody, 1999, 2000, 2003, 2006, 2010), or the effect of mental representations on musical expression (Bowes, 2009; Goins, 2006; Trusheim, 1987; Woody, 1999, 2000, 2003, 2006, 2010), the specific impact of a metacognitive approach to teaching expressivity to young pianists—particularly one that focusses on the use of an auditory model combined with aesthetic and stylistic mental representations—has remained largely unexplored. No study has examined how the combined perceived effects of aesthetic and stylistic mental representations and of aural modeling in relation to four aspects of expressive musical phraseology, expressive feeling, musical subtleness, rhythmic variations, and melodic phrasing, could be employed to generate an idiom that would elicit expressive responses in students.

In the present study, the term *aesthetic mental representations* refers to images produced in the mind on hearing a musical piece, while *stylistic mental representations* refers to the stylistic impressions (style period, musical genre) that might occur to one on hearing a piece. *Aural modeling* is understood as a strategy for teaching expressivity (Woody, 2000). The term *expressive musical phraseology* refers to musical expression in relation to technique and active reflection. *Melodic phrasing* refers to the manner with which students articulate the relationships between melodic phrases through specific gestures, so as to translate expressively the inflection of musical ideas. The term *musical subtleness* represents the judicious use of dynamics in relation to the micro- and macro-structure of a melodic phrase or passage.

Relationships concerning expressivity and motor coordination in performance are intricately intertwined, given that a cognitive strategy involves mental representations that a musician can translate into musical sounds (Woody, 2006). Consequently, it is an auditory image that creates a specific blueprint of the music. Yet, Miranda (2004) observes that, often, the absence of awareness prevents teachers from implementing developmentally effective instructional approaches. Such strategies could incorporate metacognition as a support that would render the practice of aural modeling and mental representation even more effective. It would provide a pathway through which students could monitor and self-regulate their learning processes. First referred to as awareness of one's own knowledge and the capacity to regulate cognitive processes in learning (Flavell, 1979), metacognition is grounded in Flavell's model of cognitive monitoring. He contended that one can monitor simple or complex learning activities through the interaction between metacognitive knowledge, goals, and experiences, and further underscore the awareness of behaviors in accessing knowledge to translate and restructure new information. The key point is for students to take an active part in constructing their knowledge by combining existing concepts to create new meanings. This allows them to be critically involved in their learning processes.

Although researchers have highlighted the effectiveness of metacognitive instruction in heightening students' learning experience (Veenman et al., 1994), its use in the classroom or in the studio is far from general (McPherson & Renwick, 2001). In addition, employing metacognitive techniques to help students develop an expressive language is not considered the focus of teaching but the exception (Karlsson & Juslin, 2008). Jørgensen (2000) reported the lack of emphasis on metacognitive strategies designed to help conservatory students, while Barry and McArthur (1994) highlighted instructors' strong tendency to focus more often on issues of technique to the detriment of musical expressivity.

Consequently, music teachers might better understand the cognitive processes through which young pianists project their expressivity by examining the role of aural modeling and mental representations in a metacognitive educational framework intended to promote the expressive development of beginners. In turn, such understanding might help to articulate general recommendations aimed at optimizing teaching strategies for young pianists.

Need for the Study

Considering the central place of expressivity in music and, paradoxically, the absence of a systematic approach during piano instruction or in the classroom that would aim to develop expressivity, an innovative approach is needed that would help teachers to promote thinking on a higher order. Such an approach would allow students to articulate a descriptive idiom for musical expression. Successful academic achievement is a paramount goal in education. According to the National Association for Music Education (2014/2020), “Students need to have experience in creating, to be successful musicians and to be successful 21st century citizens” (p. 1). Advocacy for children’s proficiency not only in music performance, but also at improvising, composing, and understanding of the relationships between music and the other arts and disciplines, can be seen in the adoption of the National Standards for Music Education revised in 2014.

Common pedagogical approaches for eliciting musical expression stem from behaviorist-dominated teaching methods in which expression is generally limited to technical mastery (Broomhead, 2005; Hultberg, 2007; Karlsson, 2008; McPhee, 2011). Although these methods present valuable starting points for grasping and encouraging musical expression, they do not foster students’ exploratory options while learning because they result from a teacher-centered approach. Eventually, students reproduce their teachers’ expressive recommendations without being afforded the possibility of adding their personal expressive input. Undoubtedly, these are essential phases in the learning process that, nonetheless, could be improved through the implementation of methods that invite students to follow their own interpretative intuitions.

Consequently, the metacognitive approach for learning musical expression presented in this paper is an attempt to fill this gap in the research by inviting the student to actively engage in making interpretative decisions based on the musical context. Furthermore, the learner should be able to develop both a vocabulary for recall and guidance and the ability to develop a conversion channel (a mental processing ability) for linking this language with their expressive rendition. From that perspective, this approach engages the learner beyond the methods generally used for learning musical expression.

The learning must result from the student's distinct experiences and shift toward the transformation of those experiences into concrete musical statements. In this manner, learners will be able to access their emotions through the tools that will allow them to associate those emotions with specific musical ideas through a clearly defined transformative process. Applying this pedagogical perspective, teachers should be able to ensure that personalized learning is actively occurring. This experiential teaching method might allow teachers to evaluate the process whereby they conceive a learning frame by which students can develop a set of words (idiom) for musical expression that channels their thought processes. As a result, the teacher may be able to provide feedback that addresses the musical uniqueness of each student.

This metacognitive approach places students at the center of their learning by allowing them to gain ownership over their intellectual processes. Through the use of such experiential learning, students are afforded the necessary tools to actively explore and make decisions about how to discover creative contextual solutions as they navigate their musical sensibilities. Consequently, through a metacognitive process designed to endow students with the means necessary to monitor their own thoughts, and in which they engage in experiential learning, it is hoped that they will find a channel to explore and improve their interpretative skills. Ultimately, this method should become a catalyst through which young pianists could authenticate their individual musical uniqueness.

Purpose and Research Questions

The purpose of this study was to assess the perceived effect of a metacognitive teaching method designed to help young pianists perform more expressively through investigating their experiential processes. In this study, I specifically examined the combined perceived effects of the constructs of aesthetic and stylistic mental representations and of aural modeling as related to four aspects of expressive phraseology: expressive feeling, musical subtleness, rhythmic variations, and melodic phrasing.

Based on these considerations, the following research questions were addressed:

1. How do aural modeling and aesthetic and stylistic mental representations in the metacognitive process allow young pianists to elicit an expressive musical idiom?
2. Through which mechanisms does metacognition, in this context, facilitate the translation from felt emotions to expressive performance?
3. To what extent does this metacognitive approach to developing expressive responses through aural modeling and aesthetic and stylistic mental representations influence the overall performance of young pianists?

Summary

Musical expressiveness is at the core of any finished performance, enabling both the performer and the audience to derive meaning and a sense of emotional attainment. Quite frequently, however, teachers and students alike concentrate almost exclusively on the non-expressive features of the music during the earlier phases of musical instruction; they devote greater effort and time to the technical aspects of their crafts. One strategy by which educators can foster the development of musical expressiveness is through the use of a metacognitive method based on Bandura's (1986) social cognitive theory. Findings from this study aim to reflect the efficiency of such a pedagogical approach as well as the mechanisms involved in this process.

CHAPTER 2

LITERATURE REVIEW

In the following review of the literature, I survey specific areas directly connected to the proposed research as they relate to private piano instruction. The goal is to situate the study in the research found in the literature. These areas are (a) understanding the concept of musical expressivity, (b) understanding the importance of musical expressivity in music instruction, (c) surveying conventional ways of imparting expressivity, and (d) approaching the concept of metacognition.

Understanding Musical Expressivity

In order to properly delineate the scope of this study, a clear understanding of what is meant by musical expression is of paramount importance. In this paper, the terms *expression*, *expressivity*, and *expressiveness* will be used interchangeably. Various studies have emphasized the importance musicians give to the notion of expressivity as they "consider the development of expressive abilities to be an important—if not the most important—part of practice" (Woody, 2006, p. 127). Musical expression can be approached from several perspectives and is generally considered the central feature of a musical performance (Gabrielsson & Juslin, 1996; Karlsson, 2008; Woody, 2000, 2003). Although expression can be described as variations between the written score and its execution, three main aspects can be emphasized. Repp (1990) defined musical expression as the added elements not included in the musical score, thus considering expressivity as "microstructure" (p. 622). Gabrielsson (1987) conceived expressivity as deviations from the musical notation with respects to such components as timing, dynamics, timbre, and pitch. Finally, Timmers and Honing (2002) offered an encompassing definition that views expressivity as deviation within the performance, that is, variations that span larger portions of the musical phrases. I contend that an additional definition could incorporate all of the above while focusing specifically on the fashion in which performers employ their technique (mechanical aspect) and the thought processes involved, based on active reflection (metacognitive aspect), in order to elicit an expressive performance. For the purpose of my study, I define this as *expressive musical phraseology*.

Understanding the Importance of Musical Expressivity in Music Instruction

In the Western musical tradition, expression is considered one of the most important characteristics of musical interpretation. Such statement is underscored by De Poli's (2004) observation that expression "is the added value of a performance, and is part of the reason that music is interesting to listen to and sounds alive" (p. 289). Various empirical studies indicate that, despite its significance, expression is not always the primary focus of musical education. Teachers tend to delay its implementation and emphasize rather the development of technical skills (Tait, 1992; Young, Burwell, & Pickup, 2003). As Rostvall and West (2001) observed, numerous method books designed for instrumental teaching do not deal with expressive musical features with regard to lesson plans. A number of reasons have been stated as for its neglect in music education. One of the most salient justifications is that due to its tacit and subjective nature, expression appears difficult to teach objectively (Hoffren, 1964). Considering its indefinable characterization as a multi-dimensional phenomenon (Juslin, 2003;

Gabrielsson & Juslin, 2003), a universal definition that embraces all of its aspects remains to be outlined. This latter point is of paramount importance, as it could inspire empirical studies that would bring about a consistent understanding as well as theories regarding expression in music education. This would allow teachers to adopt strategies that can effectively enhance their students' overall musicianship.

Surveying Conventional Ways of Imparting Expressivity

The conventional methods for teaching musical expression have well been examined by scholars (Goins, 2006; Karlson, 2008; Karlsson & Juslin, 2008). According to them, the neglect of expression in music education, especially in the earlier stages, can likely be traced to the traditional mindset with which educators generally approach that area triggering, in turn, several consequences. Empirical studies emerging from the field delineate at least three main aspects with regard to this issue that have a direct effect on the strategies used for teaching musical expression: (a) the behaviorist strategical approach to teaching, (b) emphasis on technical skills development, and (c) the lack of connection among specific teaching strategies.

The Behaviorist Strategical Approach to Teaching

The teaching model most generally used revolves around a behaviorist-dominated approach in which the master-apprentice model is prominently employed (Broomhead, 2005; Hultberg, 2007; Karlsson, 2008; McPhee, 2011). Several studies (Eisner, 2002; Mullen, 2002) have stressed the lack of efficiency of traditional pedagogical approaches, as well as the lack of efficiency in their long-term objectives. These studies have also shown that many students are becoming increasingly alienated from conventional means of schooling, referred by Freire (2000) as “banking education” in which students are passively taught through teacher-centered instruction (p. 72). As a consequence, the pedagogical methods generally used during music lessons “do not necessarily relate to the ways in which students understand what they are doing” (Reid, 2001, p. 26). Such an approach to teaching musical expression can be observed in a study by Karlsson (2008) measuring “language use and feedback strategies” during private lessons (p. 28). It was found that teachers’ speaking dominated the lesson, the teacher using almost three times as many words as the student. It became apparent that instrumental teaching was done according to a teacher-centered approach in which aspects of musical expression received little consideration.

In an observational study investigating how musical expression is approached in instrumental teaching, Karlsson and Juslin (2008) indicated that teachers concentrated on addressing technical matters and the printed score. Teachers did not appear to supply specific goals with clear, explicit means to guide their students in developing a vocabulary to convey their musical expressivity. Expression was addressed implicitly rather than explicitly. When expression was approached explicitly, it was generally in the form of “vague statements that provided little concrete advice about the playing to the student” (p. 321). Judging from Elliott’s (2005) comments, this issue might reveal a rampant, though prevalent view of teachers:

> Contrary to what most non-musicians might assume, music teachers seldom think about whether or how sonic-musical patterns may be expressive of specific emotions. Accordingly, teachers seldom teach students how to hear, interpret, and

> create musical works in relation to (what I call) 'expressional' musical meanings and the role of such meanings in our enjoyment of music (p. 94, as cited in Karlsson & Juslin, 2008, p. 312).

The above statement underscores those mental processes guiding students' reactions in their music lessons, during which no conceptual understanding is achieved. Students respond to the teacher's perceptual structures instead of reconfiguring their individual experiences so as to accommodate new information.

Emphasis on Technical Skills Development

The acquisition and development of technical skills during lessons is strongly emphasized (Tait, 1992; Young et al., 2003). For example, in a study that explored the pedagogy of musical expression in instrumental teaching, Karlsson (2008) observed the interaction between teachers and students during lessons:

> a) lessons were mainly devoted to the reproduction of specific pieces of music from a written notation; b) the focus was mostly on technique and on the musical score; c) playing by ear occurred rarely; d) improvisation did not occur at all; e) lessons were rarely guided by explicit goals or plans; f) lessons usually proceeded by asking the student to play practiced pieces while the teacher commented on the performance in an 'ad-hoc' manner. (p. 30)

He isolated "six themes that arose throughout music lessons" (p. 30):

- Technique (focuses on technical problems of the performance, e.g., intonation, fingering);

- Notation (focuses on some aspect of the music notation, e.g., different editions or analyses);
- Practical issues (focuses on practical issues that concern the lessons, e.g., deciding about the next meeting);
- Expression (focuses on expressive aspects of the performance, e.g., communication, emotions, interpretation, shaping);
- Self-confidence (focuses on boosting a student's self-confidence through encouragement or challenge);
- Instrument problems (focuses on problems related to the student's instrument or ergonomics). (pp. 30–31)

In the investigation, it appears that the concept of musical expression was deferred in the learning process. No clear teaching methods appeared with explicit strategies meant to address expressivity.

It is, however, worthwhile to observe that on close examination this aspect raises a dilemma. One may argue that, given the technical prerequisites necessary to allow young musicians to express themselves musically, the sensory-motor requirements involved have not yet become completely automated. On the other hand, certain complex gestures involved during performance do entail a conscious thinking process to be executed (Lehmann, 1997).

It may seem a paradox to attempt to teach musical expressivity skills while physical technical channels are still being developed. Yet, considered from a constructivist perspective and as interrelated entities in which expressive skills gradually mature as technical proficiency improves, bridging the gap between both the mechanical and the interpretational attributes of musicianship appears possible. As Broomhead (2005) pointed out, expressiveness and technical proficiency should not be approached independently but must complement each other. How this suggestion aligns itself with using metacognitive strategies as effective during lessons will be explained below.

Lack of Connection Between Specific Teaching Strategies

When considering how educators deal with expression, strategies employed in isolation may not suffice in helping students to elicit metacognitive responses in developing an expressive musical idiom (Karlsson, 2008). These strategies are use of: (a) metaphors (Barten, 1998), (b) modeling (Dickey, 1992), (c) focus on felt emotion (Woody, 2000), and (d) verbal instruction (Woody,1999). In addition, studies about the development of skills have led researchers to highlight three components necessary for efficient learning of a task: (a) a well-defined task, (b) informative feedback, and (c) opportunities for repetition and correction of errors (Ericsson et al., 1993). Tait (1992) underscores the importance of providing students with precise task objectives and explicit feedback. Such feedback acts as a means that will allow students "to compare their present strategy with a representation of an ideal strategy" (Balzer et al., 1989, p. 412).

Metacognition

Classically trained students in music performance are traditionally instructed to use a format centered on imitation. In general, those students learn to perform by watching their teachers whose performance recommendations they try to apply, including replication of expressive musical features and gestures which may not necessarily reflect their own intentions and sensibilities. While this model has fashioned excellent musicians, results from studies have shown the scarcity in dialogue and questions emanating from students during lessons. This claim can be illustrated by two recent studies that have investigated the interactions between instrumental teachers and their students.

The first study, by Rostvall and West (2001), examined elements of videotaped instrumental music lessons. They found that emphasis was typically given to the notational aspects of the score and that musical elements were not articulated from a melodic, rhythmic, or phrase perspective. The researchers observed a prevalent lack of emphasis regarding the expressive properties of the music. Kostka (2002) administered a questionnaire to college-level studio music teachers and music majors focused on approaches concerning practicing. The author found that 67% of the students indicated that practice plans were never discussed during lessons. Furthermore, this result was at odds with teachers' statements that approaches concerning instrumental practice were examined during lessons.

In light of the above, a rethinking of the traditional methods used in instrumental teaching appears to be needed. I am calling for an alternative metacognitive approach that would alter the behaviorist-oriented teaching that prevails in the studio. A constructivist approach would yield the idea that, through self-reflection, musicians can become able to monitor and reflect about their own cognition. In other words, musicians become aware of their learning process. Pintrich (2002) explains that "because meta-cognitive knowledge in general is positively linked to student learning, explicitly teaching metacognitive knowledge to facilitate its development is needed" (p. 224). Metacognition, a concept found in cognitive psychology, was first described by Flavell (1976) as "one's knowledge concerning one's own cognitive processes and products or anything related to them, e.g. the learning-relevant properties of information and data" (p.232). Metacognition is a strategy that

> refers among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective. (p. 232)

Kluwe (1982) highlighted two characteristics related to metacognition: first, the individual has some knowledge about his or her own thinking and, second, that individual is able to monitor and regulate the development of his or her own thinking. In Brown's (1987) definition, metacognition denotes the status of one's own knowledge and the level of control over one's own cognitive practices. One recurrent idea about metacognition is that of two distinct processes, monitoring and control, concurrently at play.

Although one definition of metacognition "focuses on the active participation of the individual in his or her thinking process" (Stewart & Landine, 1995, p. 17), a variety of scholars have also defined the term (Brown, 1987; Ellis et al., 2014; Flavell, 1979). These definitions encompass the following areas: "knowledge of strategy," "knowledge about cognitive tasks," as well as "self-knowledge" (Ellis et al., 2014, p. 4016). These three interrelated aspects of metacognitive knowledge are still considered essential components of the learning process (Krathwohl, 2002; Pintrich, 2002, as cited in Ellis et al., 2014). Flavell (1979) further conceptualized metacognition into four categories:

metacognitive knowledge, metacognitive experiences, tasks and goals, and the initiation of strategies or actions.

To help foster an idiom that would elicit expressive responses in music students, my research aligns itself on premises developed by Bandura's (1986) social cognitive theory. I draw from the theory's feature of humans' self-reflective aptitude, also found in Flavell's (1979) notion of metacognition. One of these self-reflective abilities is self-regulation, about which Bandura's (1986) writings helped to shed new light. Bandura (1977) explained the processes of human performance as the interactions between the individual, the environment, and actions. Self-regulatory behaviors emphasize the reciprocity at work between the environment and the individual and which is mediated through human behavior. Bandura underscored the importance of the interplay between the environment and the individual in order to derive knowledge as part of the self-regulatory process. Flavell's views on self-regulation appear to focus on the cognitive aspect, thus favoring its endogenous characteristics such as those described by earlier writings of Piaget (1976).

I propose to illustrate how both approaches can be used concomitantly, thus demonstrating how the concept of metacognition can be perceived and utilized from both an exogenous and endogenous perspective (Byrnes, 1992). Such an understanding underscores Moshman's (1982) observation that "neither exogenous learning nor endogenous development is, in this view, predominant over the other: the two exist in a relation of reciprocal constraint and facilitation" (Moshman, 1982, p. 375).

Leutwyler (2009) pointed out that a curriculum that fosters active learning and takes into account students' concerns can promote the use of a metacognitive strategy. This view reflects Bandura's (1986) social cognitive theory that social influences play an important role in human development both at the inter- and intrapersonal level. His theoretical construct of "triadic reciprocal determinism" (p. 23) emphasizes the view that social determinants influence and are influenced by both personal and behavioral factors. Referring specifically to modeling, he wrote that

> The capacity to learn by observation enables people to expand their knowledge and skills on the basis of information exhibited and authored by others. Much social learning is fostered by observing the actual performances of others and the consequences for them. However, a special virtue of modeling is that it can transmit simultaneously knowledge of wide applicability to vast numbers of people through the medium of symbolic models. (p. 47)

In such a context, fostering a constructivist stance, conceptual new knowledge is not simply absorbed, it is also created.

Elements of Metacognition

Cognitive strategies can be identified as the basic mental capacities a person employs to reflect, study, and learn (e.g., remembering information, probing various sounds or images, comparing and interpreting different sorts of data, or making inferences). These strategies allow an individual to reach specific objectives, such as solving math problems or text comprehension, and can be both categorized and assessed. Metacognitive strategies, in turn, are the procedures one employs in assessing the achievement of a task. For example, such metacognitive actions can involve the monitoring of one's own intellectual grasp of a text, the ability to self-assess and self-correct, or the evaluation of improvement (Perfect & Schwartz, 2002).

A distinction is made in metacognition between metacognitive knowledge and metacognitive skills. According to Flavell (1979), metacognitive knowledge refers to a person's declarative knowledge in relation to the interaction between person, task, and strategies, while metacognitive skills addresses a person's procedural knowledge in monitoring and regulating learning tasks (Veenman et al., 2005). Such skills are those involved in planning activities, setting goals, evaluating and monitoring for errors, or making corrections. Several aspects of metacognition stem from these distinctions, such as meta-memory, meta-comprehension, transfer of learning, self-regulation, etc.

Modeling. A component of metacognition is modeling whose characteristics have been described earlier. Research shows modeling to be an essential technique widely used in metacognitive learning. A well-known procedure used during Suzuki lessons (Colprit, 2000; Duke, 1999; Goins, 2006), modeling calls upon "the capacity to learn by observation [that] enables people to expand their knowledge and skills on the basis of information exhibited by others" (Bandura, 1986, p. 47). By imitating a model (teacher, pre-recorded, or computerized device, for instance), a student can learn new skills. In Western instrumental instruction, learning occurs in the initial stages through imitation and during subsequent phases of technical proficiency. This method is based on the idea that prior exposure to auditory stimuli can create a familiarity with a musical point—technical or expressive—especially when the goal is performance. This familiarity allows for an efficient use of lesson time. Furthermore, "Aural modeling has been recognized as a contributor to the acquisition of expressive music performance skills" (Woody, 2000, as cited in Woody, 2003, p. 51).

In an experiment, Frewen (2010) assessed the influence of prior aural familiarity on children's performing accurately a keyboard melody. During a 15-day period, students with no piano training listened 128 times to a musical tune in order to familiarize themselves with the melody that they later learned to perform on the keyboard. The melody was also learned by a control group. The students familiar with the melody performed substantially more accurately than those not familiar with the melody.

Henley (2001) investigated how modeling and changes in tempo could influence the execution of high school students enrolled in instrumental performance in two regions of the United States. Two independent variables were chosen: Presence versus absence of a model and progressive rise in tempo against pre-set tempo versus fluctuations in tempo from a slow to a faster pace. Four dependent variables were used: Pre-test, Post-test gain score comparisons of percentages of correct pitches, Rhythms, and Tempo percentage gain. From a sample of n = 60 participants and using a Pre-test-Post-test Analysis of Variance (ANOVA) procedure, the overall results suggested that, although variations in tempo did not yield any substantial effect on the results, the use of a model allowed students to score significantly higher gains in tempo and rhythm percentage, compared to the group not using a model. Based upon those results, the author acknowledged the benefits of a model for teaching—thus corroborating previous research findings (Dickey, 1992, Henley, 2001; Sang, 1987).

Aesthetic and stylistic representations as mediated by mental imagery. Researchers have proposed that when one is engaged in mental practice, the neuro-motor outlets required in the performance of a motor task are also activated (Kosslyn et al., 2001; Martin et al., 1999). Following the stimulation of the neural channels during mental imagery, a strengthening of the motor programs ensues in the motor cortex of the brain on which movements are dependent. As a result, mental imagery can improve the acquisition of new skills by strengthening coordination patterns as well as training the related motor neurons in the muscles used (Mackay, 1981).

Scientists have also established that when engaging in intense imagery activity, one's brain construes the images as equivalent to the original stimulus (Marks, 1983). Mental imagery is thus contingent upon experiences already accumulated in one's memory. Such imagery is experienced internally by mentally recreating external events. Imagery can also generate new understandings by connecting elements of mental representation in several ways (Vealey & Greenleaf, 2006). A study by Rizzolatti, Fogassi, and Gallese (2001) found that a particular category of neurons, the mirror neurons located in the pre-motor cortex region of the brain, reacts selectively when an animal executes specific actions with either their hands or when the animal observes the same actions executed by another animal.

Scholars have investigated the effectiveness of the response mechanisms involved when engaging in mental imagery and their influence on artistic performance. For instance, Trusheim (1987) conducted a study on "twenty-six elite professional brass performers from five major American orchestras" (p. ii) in order to determine the influence of mental imagery on performance, “especially in reference to its function and use by brass performers” (p. 57). The three categories of questions were descriptive, structural, and contrast. These questions were designed to allow subjects to refer to their personal experiences. The results addressed eight areas that were presented in an Interview Guide. Despite the limitations of the study (all subjects were men, the investigator’s bias, usage of semantics, and generalization), Trusheim found that the use of mental imagery appears to play a vital role in brass performance. Of note are the significance of aural imagery and imagery strategies related to the subjects’ interpretation. Such findings illustrate how brass players devise imagery strategies to develop and refine tone production as well as to rehearse mentally; this minimizes the negative effects of performance anxiety. These results corroborate Rojcewicz’s (1998) statement that

> Image-making is the mind’s fundamental activity of knowing; no cognitive operation is more central to consciousness. New learning results when experiences provide, confirm, or modify images of oneself and the world. Whatever we are conscious of exists in the mind as an image. As primary units of consciousness, images exist in all the sensory modes of perception. Images of sight, sound, taste, touch, and smell abound in the mind. Not simply metaphors for ideas, images relate to how people acquire, organize, retrieve, and use information. Imagistic thinking is a profitable mode of learning and knowing. (p. 100)

Brown and Palmer (2013) investigated how the processes of mental imagery influence both the phases of memory encoding and the retrieval of information in order to understand the close connections between the time-based aspects of performed and mentally visualized movements. Based on the results, they determined that auditory learning tends to occur more quickly than motor learning, especially during the early phases of encoding and retrieval of information. This research confirms the importance of auditory mental representations during the process of learning novel auditory-motor sequences. This study is especially significant for my research as its highlights its core aspect, namely the influence of aural modeling, the resulting mental representations, and their impact both on motor coordination and, by extension, on musical expressiveness.

Mental aesthetic and stylistic representations call upon the idea that musicians can produce a target image—referred by Woody (2003) as “goal imaging”—of the sound qualities they wish the music to manifest with regard to expressive gestures. In order to become sound-tangible, however, this “goal image” needs to be combined with a specific strategy (Gabrielsson, 1999, p. 502). Although a constructivist approach fostering metacognitive techniques to teaching expressivity at the piano is not generally emphasized during lessons, paradoxically, metacognition appears to be an important tool used consistently by professional musicians (Hallam, 2001a, 2001b).

Scholars have highlighted a strong relationship between proficiency development and the employment of metacognitive techniques (Barry & Hallam, 2002; Hallam, 2001a, 2001b). For instance, McPherson (2005) established that mental procedures used in the early phases of technique acquisition produces significant gains in learning regarding the efficiency with which rehearsal time is used. Through the self-regulative techniques found in metacognition, students can gauge the correlation between their progress and the strategies they apply. Through this process, they can tailor their learning so as to develop specific skills. Moreover, such self-regulatory approaches have been linked to growth in self-efficacy and motivation (Zimmerman, 1998), both elements are important predictors of music proficiency (McPherson & McCormick, 2006). Thus, while musical expression denotes a complex phenomenon that presents a real educational challenge for teaching and learning, one prompted to look for didactically appropriate paths that acknowledge the interplay between young learners' intellectual growth and musical development if we seek to promote effective teaching strategies.

Summary

A vast corpus of studies has investigated a wide range of teaching strategies in piano instruction, focusing on understanding the effect of auditory modeling in music and motor learning (Goins, 2006; Sang, 1987; Watson, 2006; Woody, 1999, 2000) or the effect of mental representations on musical expression (Bowes, 2009; Brown and Palmer, 2013; Goins, 2006; Trusheim, 1987; Rojcewicz's, 1998; Woody, 2003, 2006, 2010). Little is known about the specific influence of a metacognitive approach to teaching expressivity to young pianists, one that centers on an auditory model combined with aesthetic and stylistic mental representations.

Empirical studies arising from the field define at least three main characteristics that have a direct consequence on the strategies used for teaching musical expression. These features are: (a) the behaviorist strategical approach to teaching that does not foster student's exploratory options because they result from a teacher-centered approach; (b) the emphasis on technical skills development that delays the nurturing of students' expressive abilities; and (c) the lack of connection between specific teaching strategies such as the use of metaphors, the focus on felt emotion, providing verbal instruction and informative feedback, specifying a well-defined task, and creating a space for repetition and correction of errors.

Scholars have investigated the effectiveness of the response mechanisms involved when engaging in mental imagery and their influence on artistic performance. The aim of this study was to assess the effectiveness of the above parameters through a specific methodology designed to extract meaningful information drawn from the observation of the metacognitive processes involved and, thus, expand the existing knowledge in the field. A description of the methodology employed in this study is presented in Chapter 3.

CHAPTER 3
METHOD

With the purpose of assessing the effect of a metacognitive teaching method designed to help young pianists to perform more expressively, I examined the combined effects of aesthetic and stylistic mental representations and of aural modeling in relation to four aspects of expressive musical phraseology. After five students were recruited, these constructs were implemented through a pedagogical application of the metacognitive method. The data obtained was both qualitative and, to a certain extent, quantitative in nature. For the qualitative data, I used a series of deductive analytical methods in order to extract pattern coding and themes generation. Quantitative data, in turn, was analyzed using various statistical techniques that are further detailed.

Case Study

In order to carry out the present study, I used a case study design in which instrumental case studies were compared. Stake (1995) argues that "for instrumental case study, issue is dominant; we start and end with issues dominant" (p. 16). The choice of such format for the proposed investigation rests upon the idea that one of the goal of the present research is to "expand and generalize theories" (Yin, 2009, p. 15), which, in the case of Bandura's (1986) social cognitive theory was used as "a template with which to compare empirical results of the case study" (Yin, 2009, p. 38). From these results, it may become possible to understand how both students and teachers can reflect on their practices in order to act on local policies and influence communities. Although Stake (1995) stated that "the real business of a case study is particularization, not generalization" (p. 8), Stake and Trumbull (1982) had observed that generalizations that are naturalistic and grounded on explicit data remain conceivable, especially when created in previous research in the field. This corroborates Yin's (2005) statements that

> One way of starting your inquiry [might be to] amass a lot of statistics . . . but statistics is not what education is really about. Starting to understand the world of education means bringing to life what goes on in [the setting] and how [this is] connected to a broader panoply of real-life . . . Case studies fill this need. They can provide both descriptive richness and analytic insight into people, events, and passions as played out in real-life environments. (Yin, 2005, p. xiv)

This view is further supported by Stake (2000), who contends that when the goal of the study is to present "explanation, propositional knowledge, and law . . . the case study will often be at a disadvantage. When the aims are understanding, extension of experience, and increase in conviction in that which is known, the disadvantage disappears" (p. 21). Although Yin and Stake adopt two different perspectives on case study, these differences in viewpoints are not mutually antagonistic, as can be seen in Stake and Trumbull's (1982) observations on naturalistic generalizations, given that they provide the researcher with a broader spectrum of appreciation from which to frame the study. These generalizations share the common purpose of heightening understanding by transferring knowledge from a study sample to another population of interest. Stake stated that "case studies will often be the preferred method of research because they may be epistemologically in harmony with the reader's experience and thus to that person a natural basis for generalization" (p. 20). Both Yin and Stake's perspectives align with the purpose of the present case study because they bring on a range of investigative possibilities.

Research Constructs

The concept of musical expression was approached under various aspects in order to portray an array of concomitant mechanisms used to establish the basis for a metacognitive method. This method would be applied as a medium to help young pianists to develop their sense of musical expressivity. Thus, in this study, the following four constructs were used:

- *Aesthetic mental representations* indicating the images produced in the mind upon hearing a musical piece.
- *Stylistic mental representations* refer to the stylistic impressions (style period, musical genre) that one may think of upon hearing a piece.
- *Aural modeling* is understood as a strategy for teaching expressivity (Woody, 2000) by using pre-recorded musical excerpts (excerpted from YouTube) matching the style of the music used for this study.
- *Expressive musical phraseology* refers to musical expression in relation to the use of technique and active reflection. It is comprised of the following five sub-constructs:
    - *Melodic phrasing* refers to the manner with which students articulate the relationships between musical phrases through specific gestures, so as to translate expressively the inflection of musical ideas.

- *Musical subtleness* represents the judicious use of dynamics in relation to the micro- and macro-structure of a phrase or passage.
- *Expressive feeling* describes the way in which the students were able to convey their emotions in relation to the music's overall musical character and tempo.
- *Rhythmic variations* refers to the various inflections and deviations of the rhythm in order to bring vitality to the music and underscore its structure.
- *General use of expressive means* is a collective construct that takes into account all of the above sub-constructs as a means to identify the degree with which the student was able to display a superior level of expressivity and musicianship.

Pedagogical Application of the Metacognitive Method

The teaching of the metacognitive method is divided into three units, each dealing with a core metacognitive component. Each component represents a specific area of observation focusing on one aspect of analytical learning. These three units are:

1. Identifying the structural articulations of the piece in terms of its phrases.
2. Identifying the corresponding relevant dynamics pertaining to each phrase.
3. Conceiving a logical canvas through which these units can be inserted in order to create a meaningful interpretation.

Unit 1

During the first unit, the students were asked to identify the phrases and sub-phrases of the piece by using a series of notational slurs over the measures. The importance of delineating the phrases was of the greatest importance to help students to conceive clearly the musical articulation of the piece. One will also notice that, within the span of a phrase, sub-phrases can occur. Getting into the habit of identifying these articulations provides the student with a logical approach regarding the judicious use of dynamics needed for the interpretation.

One way to find these phrases was to play a section of the piece many times on the piano. The students were invited to start singing the theme aloud. They slowly began to notice that they became able to distinguish clearly the beginning and end of a phrase. They also discovered the sub-phrases that constitute the larger phrase. Approaching the piece in this fashion also helped students to build a mental grid in which all the parts and sub-parts became clearly visible and easy to recall when needed. This mechanism was the metacognitive formatting of the way in which the learning was taking place.

Within each structural articulation (phrase), it was important to analyze the structural design of the melodic lines *per se*. In the *Andante Cantabile* from Mozart's Sonata, K. 330, used in this study (see Appendix I), one can notice the repeated four notes that open many phrases (see measures 1, 5, 6, 14, and 16). The ending of each section (measures 8–9 and measures 21–22) is similar and uses a descending three-note pattern in the soprano. This symmetrical pattern cannot be ignored. This evenness in lyric design is the hallmark of the piece whose proportions rest on the closed, self-sufficient melodic cells.

In order to recall the above structural analysis, one can draw a structural map of the piece as shown in Figure 1. This is one example from which to apply such techniques.

Figure 1. Delineation of phrases and sub-phrases in the *Andante Cantabile* from Mozart's Sonata, K. 330.

Unit 2

In addition to paying attention to the dynamics Mozart wrote, the students should be able to conceive, in light of the above preliminary structural phrase study, the kinds of dynamics that should be used throughout the phrases. The simplest manner to do so is to sing the phrase aloud (as well as playing it on the piano) until a logical and natural intonation—an inner aural picture—emerges to guide the student. Once the student gets convinced of his dynamic intonations, he or she should pencil them into the score (*crescendo, decrescendo, forte*, or *piano* signs, etc.). Considering this type of symmetrical compositions stemming from the Baroque and the Classical era (the Romantic era should be carefully approached in this context), it is usually expected to end a phrase with a *decrescendo* preceded by a *diminuendo/rallentando* adhering more or less to the following pattern: *beginning* (generally soft)—*crescendo—decrescendo* leading to the ending melodic material.

The next step is to try to imagine how a singer would project the phrases using vocal intonations. Similarly, students should try to imagine how passages could be orchestrated in relation to the type of instrumental color that they would use in specific places of the phrases. For instance, one might think of the *pizzicato* of the strings, or the particular brightness and clarity of the brass section, or the warmth of the clarinet, the flute, or the oboe. The idea is to create and hear internally an imagined sound of the passage(s) students are learning. This technique allows one to visualize not only the elements of the sounds that one hears mentally, but it also helps to project a mental representation on various levels of appreciation: (a) sound coloring, (b) story-telling, (c) mental imagery, or (d) global synthesis of musical ideas as these transform themselves through the musical discourse. Only when these layers are clear in the mind can the student begin to conceive aesthetically of a musical rendition of the piece. This exercise will provide efficient solutions in terms of finding the most adequate fingerings for instrumental performance.

Unit 3

Now that both the structural phrase articulations appear clear to the students and the corresponding dynamics have been addressed, it becomes possible to envision a global rendering of the entire piece. In order to do so, various techniques can be employed, such as questions and reflection about mental projections of images into sound, suggestions of a set of words (idiom) for recall of sounds, or story-telling in order to remember the structure of the piece as well as the various tone colors suggested in the segments. Students can also describe how they translate their emotions into physical motion, using different types of key pressure on the piano to elicit a variety of tones, for instance. A simple but meaningful way to ensure that students' musical ideas flow from one section to the next is to conceived a few "key words" (vocabulary) that would be the connecting hinges between sections. Students should encapsulate the piece with key words such as:

- The opening measures can be conceived as "I am making a statement" (the exposition of the theme).
- The second section (measure 10 to 20) can be conceived as an elaboration of the opening theme (a sort of development of the composer's ideas) and sub-themes. Thus, this section's key word could be "Therefore."
- Measures 21–22 can be conceived as the closing of the argument. The key words here could be "I am concluding."

A compendium of the above can be seen in Figure 2.

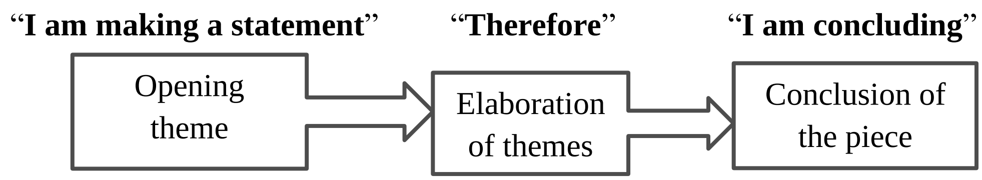

Figure 2. Flow map of illustrative key words.

These three key words are simple, yet strong landmarks that will act as a framework in guiding the students' imaginative conception of the music. Within such boundaries, the student will be able to instantly recall the structural conception of the piece and, consequently, the proper dynamics associated and to be used. In addition, this will be accomplished in real time as the music unfolds. Through constant repetitive practice, both mind and body progressively acquire the sequence of the physical actions and their corresponding sounds in order to recreate the phrases.

Research Authorizations

I was granted authorization to conduct this study by the Universidad Panamericana in Mexico City on November 20, 2017 (see Appendix A). The study prospectus and research instruments were submitted on June 1, 2017, to Boston University Review Board (BU-IRB) for approval to conduct research involving human subjects. I was granted authorization by the IRB on December 7, 2017, in order to conduct the present research study (see Appendix B).

Both verbal and written data gathering was conducted in Spanish, and the resulting English translations were made by myself. Translation of the study procedures forms were established under the supervision of my thesis adviser prior to their use in the study.

Participants

Recruitment of Participants

This study included the participation of intermediate-level piano students from four studios, as well as their teachers, who were affiliated with the Panamerican University in Mexico City. The Dean of the School of Fine Arts at the Panamerican University informed all of the piano teachers on its faculty about this study. After having been informed about the goal of the study and the various phases involved, as well as the technical ability level of the students required, four teachers agreed to participate in the study and to refer their students. Five students agreed to join the study, which ensured the small sample for this research. The Dean contacted me so that I could provide all necessary additional explanations to both the teachers and the students' parents.

I then contacted the four piano teachers, via electronic mail and telephone, in order to further explain the purpose of the study and answer all of their questions, after the Teacher Information Letter was sent to them via electronic email (see Appendix C). This letter contained an overview of the procedures to be used in the research and how data would be gathered, stored, processed, and so on. Once all questions were answered, the teachers were sent electronically a Teacher Information and Consent Form, approved by the Boston University Institutional Review Board and detailing the research procedures and length of the time involved in their participation (see Appendix D). This document also mentioned how information would be collected as well as the fact that participation is on a voluntary basis entailing withdrawal at any time during the study with no consequences. Also mentioned was how participants' privacy would be protected as well as the benefits and risks involved in partaking in this study. Teachers had two weeks to read and sign the document, and to return it.

After a Parents' Recruitment Letter (see Appendix E) and a Students' Recruitment Letter (see Appendix F) were sent, I contacted the parents of the five students, via electronic mail and telephone, in order to explain the study's purpose and answer their questions. Once all questions were answered, parents of prospective participating students were given a Parent Information and Consent Form (see Appendix G), as well as a Student Information and Assent Form (see Appendix H). They had two weeks to ask additional questions. Both the Parent Information and Consent Form and the Student Information and Assent Form were designed to allow parents and students to become familiar with the goal and procedures to be used in the study. These forms explained the purpose of this study and offered an overview of the procedures to be used in the research, such as how data will be gathered, stored, processed, and so on. They also indicated the fact that participation was on a voluntary basis entailing withdrawal at any time with no consequences. Mention was also made of how participants' privacy would be protected, as well as the benefits and risks involved in participating in this study.

Once the five student participants were confirmed, they immediately received a number label (ID) by which they were identified throughout the study (referred to, under the following pseudonyms, as Juan, Maria, Jorge, Isabel, and Alexandra). This ID was linked to a coding key (separate paper document connecting the student's name to the study ID) that was securely kept in a locked cabinet accessible only by me. Ages of student-participants ranged from 11 to 15 years old. These students came from well-educated upper-class Mexican families who were able to afford a private musical education.

Data Collection Method

In order to observe the effectiveness of a metacognitive method for learning musical expression, I collected data of both qualitative and quantitative nature. Data collection was conducted using a case study method. Data obtained through these approaches was aimed at providing a comprehensive exploration of the metacognitive method from diverse perspectives.

Qualitative Data Collection

Qualitative data was collected via multiple sources that include: (a) surveys and questionnaires in Word or PDF format sent and received electronically via emails, (b) field interviews, (c) electronically recorded discussions and interviews via Skype meetings, (d) field notes, (e) recorded students' piano performance of the music used in this study via WhatsApp application, (f) students' diary entries in Word format sent and received electronically, (g) teachers' questionnaires responses and adjudicators' assessments in Word format sent and received electronically, and (h) two group sessions (Group Session I and Group Session II) that were used to provide answers to the research questions. The details of these group sessions are discussed in greater length in the following pages.

Session I, held via a recorded Internet meeting using Skype. As an introduction to the study that took place on week 1, questions were asked of the students to ascertain their knowledge of the concept of musical expressivity and to ask them to reflect on it. On a form sent to them electronically (see Appendix E), they wrote their responses as the discussion took place. The form was then returned to me at the end of the session. My role was to act as a moderator, as well as to provide guidance regarding the ways in which students could approach the concept. This first session played a crucial function in the way the study was to be conducted as it provided me with a way not only to assess each students' level of understanding of the concept of musical expressivity but also with a venue through which to introduce them to its ramifications and from which the metacognitive method used in the study was designed.

These questions were designed to both gain insights into the students' initial approach to musical expression and to trigger their exploration of various aspects of the concept. For this introductory session, students were presented with pieces selected from YouTube on the Internet and asked to identify moments of expression and to compare how several pianists' performances of the same piece varied. These excerpts ranged from Brahms's Intermezzo in A major, Op. 118 No. 2, Beethoven's Third Symphony, Chopin's Preludes. Op. 28, to Mozart's Piano Concerto, K. 467.

The first question sought to compare the students' responses about the concept of musical expressivity considering the excerpts they had just heard. Students were asked to describe their understanding of the term *musical expression,* and I asked them to expand on the meaning of the term so they could begin to refine their definition(s). Similarly, I opened a debate-like discussion among the students themselves so that they could comment on each other's definitions and create a synergy that would allow them to link their responses to related concepts, namely that of aesthetic and stylistic mental representations and of aural modeling that fall within the constructs of the present study.

In order to moderate the discussion and to lead students to critically explore a larger array of elements of musical appreciation, such as dynamics, tempo, musical form, etc., I asked students to reflect on the excerpts that they had just heard and to relate their answer based on this initial listening. For instance, I asked students to explore how more expressively salient Brahms's Intermezzo in A major, Op. 118 No. 2, is when performed on the piano or by an orchestra. The logical next step consisted in identifying the specific musical elements that could account for their responses. I asked the students to indicate which elements they considered involved in the concept of musical expression in relationship to the constructs of aesthetic and stylistic mental representations and of aural modeling. I sought to explore students' awareness about the importance of expressivity in musical performance. Such an awareness represents an important element of the metacognitive method used during this study. This exploration was accomplished by contrasting the role of musical expressivity as applied to a piece being performed to that of the feeling of expressivity felt by the performer and then translated into the musical medium during performance.

A further aspect of musical expression was explored by adding dynamics and discussing their importance during performance. Students were asked to reflect on the intrinsic limitations of the use of dynamics in the printed score and whether additional expressive elements could be considered given those limitations. Such can be the case, for instance, when indications of dynamics are not sufficient to allow for an expressive performance. Students were also asked to differentiate between the terms *emotion* and *expression* and whether an awareness of various music styles and performing customs from different eras could play a significant role in rendering an authentic performance. Finally, I asked students to explore and indicate, in light of their prior answers, ways in which they could not only incorporate physicality more expressivity into their playing, but also suggest an approach that could account for all the elements discussed above in order to achieve that goal.

Session II, held via a recorded Internet conference-type meeting using Skype. During this session, which took place on week five, I sought to explore the four aspects of expressive musical phraseology: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing, in order to foster an idiom that would elicit expressive musical responses in students. Specifically, this session aimed at enhancing the students' understanding of the ramifications derived by the term *expressive musical phraseology*. They would confront ideas and elicit questions, as well as creatively investigate the four components and their meanings. A set of guidelines was sent to the students to serve as a prompt to help them organize and refine their reasoning (see Appendix J). This guideline was used as a reference as students regularly reported their metacognitive experience on their diary. This second session was divided into two modules lasting one hour each (see Appendix S). In these modules, I led the students in exploring meaningful ways to approach their interpretations through the use of the constructs employed in the study. Students were also given specific to investigates ways in which they could improve their pianistic abilities in order to better express themselves during performance.

Validity of the qualitative data collection instruments. In order to ensure the validity and quality of the present study, qualitative data were obtained from the multiple and rigorous sources indicated in Chapter 3. Cross-checking of data coming from three separate sources—such as adjudicators' assessment of recorded piano performances, responses gathered from students' piano teacher questionnaire, and students' reports on their progress as indicated in their diary entries—provided information regarding changes in students' performance ability.

Quantitative Data Collection

I collected quantitative data were through the use of a Likert-type of scale found in the Teachers Questionnaires and in the Adjudicators Assessment Form. Such data were needed only to provide support in answering Research Question 3. This research question was used to explore the quality of the expressive pianistic performance exhibited by the students when applying the metacognitive learning approach described in the present study.

Validity and reliability of the quantitative data collection instruments. The teachers and adjudicators were asked to provide comments or suggestions with regards to the clarity of the data collection instruments, their content, and their design. After their positive evaluations, I found no necessity to revise the forms. In both the teachers' questionnaires and the adjudicators' assessment forms, a set of Likert-type questions was employed for each question as follows: 1 = Poor; 2 = Fair; 3 = Average; 4 = Good; 5 = Excellent.

In order to assess the inter-rater reliability of the adjudicators' evaluation responses, I employed Cohen's kappa coefficient. This inter-rater consistency test was conducted among the three adjudicators, in order to examine the level of agreement between pairs (adjudicators 1+2, 1+3, and 2+3 in all measurements of expressive musical phraseology of each student (including pre- and post-initiation assessments). The highest agreement among adjudicators was found for the Student 3 (Jorge), moderate to substantial agreement .541 to .664 (see levels of agreement in Landis & Koch, 1997) and, across students, between adjudicators 2 and 3 (slight to substantial agreement .083 to .664). The lowest agreement among adjudicators was observed with Student 4 (Isabel), -.333 to .464. Most coefficients, however, fell in the range of fair to substantial agreement (.210 to .800), and the coefficients indicating poor agreement (<.0) may be due to the number of categories within the ordinal scales.

Justification for the use of statistical data. Considering that the small population sample used in this study would not provide the statistical power to clearly perceive differences and variations, statistics used in this research were employed solely as a support for the assessments grounded on qualitative analysis and reflection. As such, paired *t*-tests were conducted after a Cronbach's alpha statistical technique was employed as an indicator of the internal consistency of the five constructs assessed by the adjudicators. (Those five constructs were expressive feeling, musical subtlety, rhythmic variations, melodic phrasing, and general use of expressive means). The coefficients ranged from .765 to .920. Cronbach's alpha is a "measure of the inter-correlation of the items and estimates the proportion of the variance in all the items that is accounted for by a common factor" (Vogt, 2005, p. 71). It ranges from 0 (no correlation) to 1.0 (perfect correlation), in which a highest value (e.g. above .70; Vogt, 2005) suggests that the items are measuring the same thing. The above data were statistically analyzed using IBM Statistical Package for the Social Sciences (SPSS) for Windows Version 24.0. The paired *t*-tests and the Cronbach's alpha measurement will be further discussed in Chapter 4.

Timeline Regarding the Research Procedures Involved in the Study

After obtaining approval from the Institutional Review Board and receiving the consent and assent forms, the following procedures were applied:

- Week 1: Meeting through an online Skype session with the four piano teachers who agreed to partake in the research after they had determined that their students could perform the piano piece, *Andante Cantabile* from Mozart's Sonata, K. 330, selected for the study. I introduced the study in its various aspects, including metacognitive procedures. This recorded session lasted approximately one hour and 30 minutes.
- Week 1: A preliminary introductory meeting took place via a recorded Skype discussion session with the five students to discuss the goal of the study in its metacognitive aspects (*Students Group Session I*). To this end, students were asked to indicate on a form their understanding of the concept of musical expression (see Appendix J for detailed explanation). This session lasted approximately one hour and 30 minutes.
- Week 2: Students were sent a link to YouTube to several musical excerpts from the Classical era. They were asked to listen to these excerpts and to answer a set of open-ended questions, as well as to discuss various aspects of this music

according to their perceptions (see Appendix K).

- Week 2: Students' piano teachers were asked to fill out a questionnaire describing various characteristics of the student's musical abilities (see Appendix L). This document was sent back to me at the end of that week.
- Week 3: Students received the score of *Andante Cantabile* from Mozart's Sonata, K. 330. Students were given three weeks to read through the piece and record it. Students were asked to return their recordings at the end of week 6 via the WhatsApp application.
- Week 4: Students were sent a set of open-ended questions and asked to discuss their understanding of expressivity in relation to the research questions, as well as the four elements of expressive musical phraseology: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing (see Appendix M).
- Week 5: I introduced students, via a recorded Skype discussion lasting about two hours (*Students Group Session II*), to the concept of metacognition in relation to mental representations and aural modeling. To this end, I sent a set of guidelines (see Appendix N) to each student and, during the remaining seven weeks, interacted with them via electronic mail exchanges and Skype discussions. Through these guidelines, I taught students how to approach their practice from a metacognitive perspective in relationship to the four elements of expressive musical phraseology: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing.

• Week 6: Students were asked to keep a diary documenting their experiences in studying metacognitively and detailing their mental representations and how those relate to their actual playing (see Appendix O). This journal was to be written on a Word document provided via electronic mail to the students and was returned to me at the end of the study on week 12. At the end of week 6, students returned their first recording of the musical piece.

• Weeks 7–12: I interacted individually with each student through recorded Skype sessions during which I continued to teach them how to approach their practice from a metacognitive perspective in relationship to the four elements of expressive musical phraseology initiated on week 5.

• Week 12: Students' piano teachers were asked to fill out a second questionnaire concerning the student's progress regarding applied expressivity in their playing after they had been introduced to the metacognitive learning approach (see Appendix R). This questionnaire was sent via electronic mail to the teachers and returned to me at the end of that week.

• Week 12: Students again recorded the musical piece. These recordings were sent to me via the WhatsApp application. As an assessment, students were sent via electronic mail a set of open-ended questions to discuss their new approach and understanding of the musical piece in relation to the four elements of expressive musical phraseology with regard to mental representations and aural modeling (see Appendix P). The recordings were grouped by the student's ID labels without identifying which was recorded before or after the introduction to the metacognitive method used in the study. The recordings were then submitted to a panel of three independent American adjudicators for evaluation using a Likert scale (see Appendix Q). Each student had made two recordings for a combined total of ten recordings (five students times two recordings), recordings before and after students' introduction to the metacognitive learning approach.

Data Analysis Method

After all written and recorded materials were transcribed, the data obtained were analyzed using three methods: (a) coding and theme generation, (b) continuous comparison, and (c) cross-checking of data. The combination of these procedures for data analysis ensured that all material was constantly and comprehensively evaluated from various standpoints. Such analyses allowed a thorough investigation and assessment regarding the effectiveness of applying this metacognitive method to develop musical expressivity at the piano.

Qualitative Data Analysis

At the end of the 12 weeks and once the data was gathered, I used a series of analytical methods, such as transcription of written and recorded materials, in order to extract coding and themes generation. Using a pattern coding technique, I looked for patterns in the data in order to use them as the basis of the coding process. I used a deductive approach to qualitative data analysis, which means that the data analysis was based on a predetermined structure. In this case, the specificity of each research questions was used as a guide for to group and analyze the data, as well as to ensure that findings could be interpreted within their respective realms. This technique focused on the scope under consideration in order to gain a precise understanding of the generated results. Because of the specific nature of this study, I shared all of the themes with the students (with the exception of few sporadic themes that were not common among the students and did not provide any meaningful information). Continuous evaluation of students' entries in their survey responses and in their diaries, as well as contrasting evaluation of qualitative data, was also employed. In this latter case, by crossing sequentially the data (cross-checking), I ensured that the replies obtained from the students reflected their unique responses to the various prompts I had designed. Doing so helped me establish the credibility of the findings. Finally, constant review by my adviser of the results emanating from the data analysis allowed me to determine the trustworthiness of the information gathered.

Considering that qualitative analysis is guided by fewer universal rules and standardized procedures than quantitative analysis, an important feature of what distinguishes qualitative analysis is the possibility of revisiting the data as additional questions arise. New connections are uncovered and more complex formulations emerge along with a deepening comprehension of the material. As Miles and Huberman (1984) underscore, relatively few intrinsic organizational structures concerning qualitative data analysis can be considered as a universal consensus for deriving conclusions and validating results.

Quantitative Data Analysis

Although the present study is qualitative, selected statistical computations were nonetheless used as a means to substantiate, contrast, and validate the findings addressing Research Question 3. By using the software Excel 2016, comparative tables were established in order to compare both the adjudicators' assessments and the teachers' responses from the questionnaires before and after the metacognitive initiation took place. In order to assess the internal consistency of the adjudicators' evaluation responses, a Cronbach's alpha statistical analysis was employed using IBM Statistical Package for the Social Sciences (SPSS) for Windows Version 24.0. It provided me with a means to assess the overall construct of expressive musical phraseology in relation to the five categorical constructs mentioned below.

Finally, using Excel 2016 software, paired *t*-tests were conducted regarding data gathered from the adjudicators' assessments using Excel 2016 software. The intent was based on the consideration that critical information could be obtained from comparing data based on items contained in the five categorical constructs and reflected on the adjudicators assessment form: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, (d) melodic phrasing, and (e) general use of expressive means (see Appendix Q). These multiple means of qualitative data processing (and, to some extent, data processing of a quantitative nature) are geared toward contributing to the research's trustworthiness and verisimilitude.

Summary

In this chapter, I explained the methodology used to probe the influence of a metacognitive approach to teaching expressivity to young intermediate pianists. I described the types of research instruments used, the authorization process, the sampling and data collection, the reliability and validity of the research instruments, as well as the statistical analyses used to answer the research questions. I also indicated the trustworthiness and credibility regarding the qualitative data that included member checks and review of the data analysis by my thesis adviser. By adopting a qualitative method based on questionnaires and surveys, a variety of field observation, as well as a specific use of statistics employed solely as a support for my assessments, I find that this study served the dual purpose of portraying the case in its complexity and wholeness, as well as providing a springboard from which to add new knowledge to the existing body of research with which it can be compared. Outcomes from this research are described in Chapter 4, where the exploration and analyses of the data are described in greater length. The overall discussion, conclusions, recommendations, and implications are set forth in Chapter 5.

CHAPTER 4
RESULTS

This chapter presents the results of this study and is organized according to the data supporting each of the three research questions. Because of the pivotal value of the constructs used in this research to bring about the data, it appeared important to first determine the students' conceptualization of each of these notions. A regrouping of the students' approaches of the construct of musical phraseology can indicate the depth of their understanding of the construct and its four conceptual components. Such a regrouping makes it possible to note and categorize commonalities between this construct and those of aesthetic and stylistic mental representations and of aural modeling. This would show a greater awareness of the students' grasp of such concepts. For instance, the exploration of the construct of aesthetic and stylistic mental representations, as conceived by the students, reveals a sharp perception regarding how they were able to appreciate the differences between the definition of the terms *aesthetic* and *stylistic*. Some students referred to the aesthetic component of a musical work as a reflection of the composer's mental creative dispositions. Tables 1 and 2 offers a synoptic and detailed view of the students' approaches to the constructs.

Table 1

Emergence of Themes for the Construct of Musical Phraseology

Constructs	Juan	Maria	Jorge	Isabel	Alejandra
Expressive Feeling	Expressing your feelings through the way you play.	The perception of feelings.	Expressing what you feel in the music physically.	Demonstating feelings of joy, anger, sadness.	When you express your feelings in various ways (musically, physically).
Musical Subtlety	Something light reflecting your feelings.	Any small aspect in the music that creates a difference to express various feelings.	The ability to play delicately and with agility.	The finesse or quality of the music.	The subtle and varied ways to combine your feelings in your playing.
Rhythmic Variations	The type of rhythm we use to change the character of the music and show feelings.	Changes in the rhythm that demonstrate the feelings of the composer.	Different ways to play a rhythm inde-pendently of the piece.	Differences in the distri-bution of timings and of the sounds.	The differernt timings in the music that allow to play with feeling.
Melodic Phrasing	The way the notes are grouped in order to express your feelings.	The way in which you link the notes to show a musical idea.	To sing or play the melody/combination of state of mind that create the music.	The number of measures that make up the musical phrase without being interrupted.	When the piece has rhythm and appears to be phrasing.

Table 2

Emergence of Themes for the Constructs of Aesthetic and Stylistic Mental Representations and Aural Modeling

Constructs	Juan	Maria	Jorge	Isabel	Alejandra
Aesthetic and Stylistic Mental Representations	Combining the way the music goes with the rules that composers used during that period and how you feel.	How you perceive the composer's feelings and the style that reflects his musical period.	How you project both the style of the composer, and the style of his musical period.	Seeing in your mind the music through the way the composer wrote and the time he was alive.	Seeing images that reflect the mood of the music and the period when it was composed.
Aural Modeling	It is when you hear how the music should sound.	A guide that gives you an idea how the music is should sound.	Hearing how the music sounds so that you understand the structure of its sections.	When you hear the structure of the music.	Understanding how to perform the sections of the music.
Rhythmic variations	The type of rhythm we use to change the character of the music and show feelings.	Changes in the rhythm that demonstrate the feelings of the composer.	Different ways to play a rhythm independently fo the piece.	Differences in the distribution of timings and of the sounds.	The differernt timings in the music that allow to play with feeling.
Melodic phrasing	The way the notes are grouped in order to express your feelings.	The way in which you link the notes to show a musical idea.	To sing or play the melody/combination of state of mind that create the music.	The number of measures that make up the musical phrase without being interrupted.	When the piece has rhythm and appears to be phrasing.

Students indicated how such concepts could be linked to musical style, thus indicating the singularity of each construct and the interplay between them. Regarding the Mozart sonata excerpt, students outlined a particular mental conversion process to achieve their learning outcomes. This process usually unfolded as follows: first, students perceived the relationship existing between the style of the music (compositional conventions used during the Classical era) and, second, the understanding of the individualized aesthetic manner in which Mozart was expressing his mood in the way the musical lines and harmonic support were displayed.

The students reported that the sounds helped them create mentally projected images easy to recall for future performances and serving as a guide to remember how to phrase the musical lines. In a third phase, they explained how this mental process enabled them to associate an expressive goal with specific keywords. This facilitated the translation process from abstract thoughts into physical finger motion at the piano. Jorge clearly articulated this process: “I first perceive the formal construction of the piece, then I see how the composer used it for expression. Finally, I can imagine words that help me remember how to create dynamic or remember how to use my fingers.” An illustration of this tri-phase process can be seen on Figure 3.

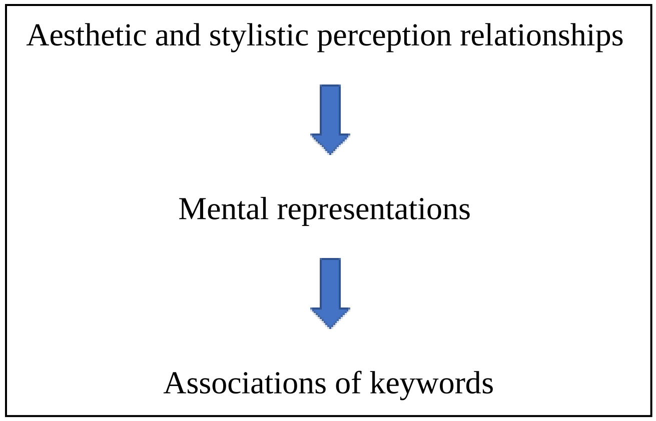

Figure 3. Illustration of the tri-phase process of mental conversion.

Response to Research Question 1

The focus of this research question was to inquire about the perceived influence of aural modeling and aesthetic and stylistic mental representations in the metacognitive process, through which young pianists can elicit an expressive musical idiom. These constructs' influence can be approached under two interrelated, observable layers that help to describe the responses mechanisms students use as they tried to formulate an idiomatic vocabulary for interpretative recall. These levels of understanding provided a mental context for the students by facilitating the processes through which they could crystalize their thoughts and transform them into specific words, thus encapsulating both a given concept and the actual formulation of that concept.

Students' Approach to Aural Modeling

The students used aural modeling to connect a large array of interrelated areas of musical interpretations such as: (a) acute consciousness of the piece's formal structure in relation to its musical style, (b) heightened perception of the tonal center of the music as a whole and in the different sections, (c) greater sense of the structural musical lines ranging from the sub-phrases in relation to the larger melodic phrases, and (d) a global understanding of the music's character in its general atmosphere. Actively listening and perceiving musical meanings and cues that will later inform the student's performance is an interactive process easily and effectively achieved as evidenced by the responses obtained from the data. In effect, this mechanism, as used by the students participating in this research, corroborates the "multi-process analysis of observational learning" described by Bandura (1986), who posits that "providing a model of thought and action is one of the most effective ways to convey information about the rules for producing new behavior" (p. 51).

This construct was used in this study as a means to gather data that would help to evaluate the effect of the use of a model during both learning a piece and its performance. Such data would be used to determine the mechanisms involved in students' ability to recall specific emotions or particular moods that they associated with the music. They used these moods as a guide to translate their perceptions into words that would, in turn, drive their piano performance.

During the discussions and through their entries in their journals, the students remarked that observing a model (the researcher demonstrating at the piano, or listening to various interpretations) was fundamental in the process of judiciously employing specific stylistic nuances during phases of interpretation. Observing a model allowed them to form a global idea of the various levels of understanding through which they could approach the piano piece while, at the same time, it acted as a support to better identify potential relationships between sections. Furthermore, the observation of a model served to frame the formal content within which students could feel more comfortable in establishing a descriptive language or idiom that would facilitate their interpretation.

An analysis of the data from the interactions between the students and me, as well as their entries in their journals and questionnaires, revealed that the pertinence of this construct could be drawn for four specific spheres: (a) suitability for understanding the idiomatic elements of the musical style, (b) usefulness of an aural model as a lever for future recall during the phases of interpretation, (c) suitability to approach challenges in the perception of a tonal center within the sections of the piece while considering tonal changes due to temporary modulations, and (d) conversion of the concept into key words for recall.

Suitability for understanding the idiomatic elements of the musical style. All students indicated that modeling helped them to understand the formal structure of the piece within the musical style that it was written in. This understanding included how the melodic lines were fused in order to shape the musical discourse, as well as how the dynamics and interpretation decisions could be employed consistent with the musical intentions of the composer. Jorge reflected, “Just having an idea how the piece should sound is very helpful since I can better use my imagination and create a story with the music knowing that I am not changing the style.” Alejandra indicated

> The main challenge for me was to understand how to phrase the ending of each phrase so that they agree with each melodic line without sounding the same all the time. Without listening to the demonstration provided, I would not have been able to guess what would have been an acceptable way to do this.

Both Juan and Isabel noticed the fact that phrasing the melodies was a challenge, considering that various compositions of the same period had their own specifics. Listening to a model helped them to recognize and understand the stylistic musical mold. Maria indicated that listening to a model helped her to mentally synthetize the piece both as a whole and in its parts.

Aural model as a useful lever for future recall during the phases of interpretation. One of the most frequent statements made by the students regarding the aspect of aural modeling was its usefulness in helping them detect the music's tonal center as well as the modulations throughout the sections. They indicated that, although they were able to "feel" the chord progressions leading to a half cadence (sense of culmination) and later resolving to a tonic chord (sense of repose), they still were unsure about how the composer was able to indicate a departure from the main tonality. This observation was triggered because they felt that each section flowed so well from one to the other.

On listening repeatedly to excerpts from music of the Classical era, along with the demonstrations and suggestions provided during my interactions with the students, students began to rethink how to listen to the sections and what to listen for during the audition process. Juan observed: "Without this kind of guidance, it was not clear to me whether the repeated notes found throughout the piece should be played in the same way every time they reappeared, even if the dynamics were expressed differently." Alejandra added that "hearing how the dynamics should be contrasted makes it clear to me how to use these indications written in the piece and to extend them in order to create additional contrasts." Jorge expressed a similar view in indicating that "dynamics are used to create the soul of the music, otherwise the notes would sound monotonous and without life; but it is important to know how to use them." This statement suggests that the use of dynamics in various situations, such as the same melodic cell being used within different contexts (for example, repeated notes in two different sections or tonalities) had not been completely assimilated by the students.

The use of an aural model, therefore, appears to have had an impact on the global treatment of the music and that impact, consequently, participated in the overall metacognitive process of mental interpretative guidance the students were following. Maria indicated,

> After hearing how the piece should be performed, I was able to link the various sections in my mind and create my own dynamic contrasts within those sections according to the imaginary story I think the piece is telling us.

Isabel noted that my demonstration allowed her to embrace the piece both as a whole and as sections because she could now better perceive the relationship between the musical phrases and the coloring of their contours as a contrasting expressive device.

Suitability for perception of tonal center. All the students indicated that the phases of recall during performance were greatly facilitated due to the exploratory nature of the aural modeling construct that rendered a layering of creative expressiveness possible. They were able to envision the whole and the parts from a tonal standpoint; they would add musical colorings by means of a range of contrasting but logical dynamics aligning with the musical style. In the words of Isabel: "Having in mind the general matrix of the piece in its general character is a very helpful tool that facilitates my interpretation of the piece in many ways and brings more confidence in my playing." This meant that students could immediately, easily, and automatically adjust their phrasings with the style features while also perceiving the key center. At the same time, they indicated how this knowledge helped them to find the best fingerings and hand gestures that would best serve to express their feelings.

Conversion of the construct into keywords for recall. Finally, the students converted their overall perception of the construct into key words used to recall. For instance, recall cues for indications of dynamics included various analogies. Maria alluded to a sense of "ascending to light" or "descending to darkness." Isabel used the term "amplifying" in reference to increasing the level of sound. Juan mentioned the idea of "creating contrasts," which indicates the idea that dynamics reflect the subtleties in intensity of the sounds. Recall cues for indications of tempo included also several analogies. Alejandra used the term of "steadiness," expressing her thoughts: "The tempo is the steady speed of the music throughout the piece." Jorge referred to the tempo as the "animation" and the "energy" of the music, which denotes that the concept is understood as an ongoing transformation of the musical time as the music unfolds. Maria described it as "something that is slowing down." In this case, the recall cue alludes to a definition of the tempo as a change in the pace of the music. Recall cues for indications of melodic lines also included the use of analogies. Juan expressed his understanding by saying that "Melodic lines are like curves that can go up or down." This cue tends to originate from a visual conception of the term, probably in relation with the ascending or descending slurs on the music score. Alejandra uses the analogy of the wave-shape of the melody: “It is like creating waves.” For Jorge, the cues were based on the observation that the repeated notes “look like a spiral.”

Students’ Approach to Aesthetic and Stylistic Mental Representations

During the initial phase of the research, students were asked to indicate and discuss their understanding of the concept of mental representation in relation to musical aesthetics and musical style after having listened to a variety of musical excerpts covering different musical eras. During the discussion that ensued, they were able to develop and express a refined and concise understanding of the relationships between the characteristics that identify a musical style and the aesthetic components intrinsic to that style. For instance, after having listened to Brahms’s Intermezzo in A major, Op. 118 No. 2, presented both in its original piano version and in an orchestrated rendition, and after the subsequent interactive conversation, they were able to distinguish many features that characterize musical compositions of the Romantic era. Such features included a tendency for longer and lyrical melodic lines, a fuller harmonic configuration of the tonal balance, a propensity for dramatic contrasts of dynamics and pitches in order to trigger direct emotional responses from the listener, a greater freedom in the treatment of the design of the forms used—including the sonata form—or the idea of a “program” or story-telling in the music.

Jorge highlighted the fact that “Romantic music differs from other previous styles, such as the Baroque or the Classical style, by strange and unusual dynamic contrasts as if the composer wanted to call our attention to specific aspects of the music.” Isabel indicated that the composer "appears to create an ambiance or a general mood by the different sound registers he chose to use for the melodic lines or for the sections of the piece." Similarly, they described the aesthetic component of this work as the general treatment of the musical matter as a means to convey a specific message by the composer, reflecting his state of mind or mood as perceived through listening to the composition.

Through this process, students began to realize that connections could be drawn between musical aesthetics and musical style through an understanding that composers were writing music as a felt experience (aesthetics) using the support of a specific set of compositional conventions during a given era (style). It became almost evident that both constructs could be approached through a series of mentally projected images that would identify the musical characteristic of the aesthetic and the stylistic components of a given piece of music. These mental projections could be sequenced into key words characterizing a specific aspect of each construct. For instance, Juan observed that Brahms chose to paint an overall melancholic mood that would permeate the entire piece despite its contrasting sections indicating, thus, the composer's aesthetic approach to this work. He wrote: "Brahms creates contrasts within contrasts by using layers of musical colors on top of each other in order to create a melancholic general feeling that keeps changing." Isabel suggested the idea of darkness, an absence of fulfillment or unresolved personal conflicts that could be perceived through the general mood of the piece and which become even more pronounced in its orchestral version. She said, "The composer uses the notes as letters to describe his feelings; so, the whole piece is organized like a letter or a journal."

Aesthetic and stylistic mental representations along with those of musical phraseology, was processed by the students through two levels, and later fused as a mental support for projected images. First, this process entailed that students gain a greater understanding of the relationship between musical aesthetics and musical style by understanding that composers were writing music as an individualized *aesthetic* experience within a specific set of *stylistic* compositional conventions in use during their era. The second step consisted of a succession of mental representations associating the construct of musical phraseology that would determine the musical characteristic of both the aesthetic and the stylistic components of the music.

Third, the students approached these ideas as a catalyst through which they could mentally project their abstract visions and turn them into a tangible set of expressive verbal cues for later retrieval during interpretation. Jorge, for instance, alluded to a

> moving connection between the concepts of style and aesthetic, and the idea of listening to a professional interpretation in order to blend these concepts. . . . then, it becomes easier to associate words to help guide my interpretation because I am not afraid to make mistakes regarding the style and the way the composer's music should be played.

Within the themes that emerged, students added several variations they found suitable according to their own perceptions of the piece.

What can be inferred from the interplay between aural modeling and aesthetic and stylistic mental representations, along with that of musical phraseology in the metacognitive conversion process, is that these concepts function both independently and in conjunction with each other in order to provide the learner with an ability to adapt to new contexts of cognitive awareness. By presenting to the students a meta-strategic level of thinking, they were able to develop practice habits in which they could “actively monitor their learning strategies and resources and assess their readiness for particular tasks and performances” (Brandford et al., 2000, p. 67). Figure 4 describes the tri-phase process of mental conversion indicated above in its successive phases as they were generally navigated by the students.

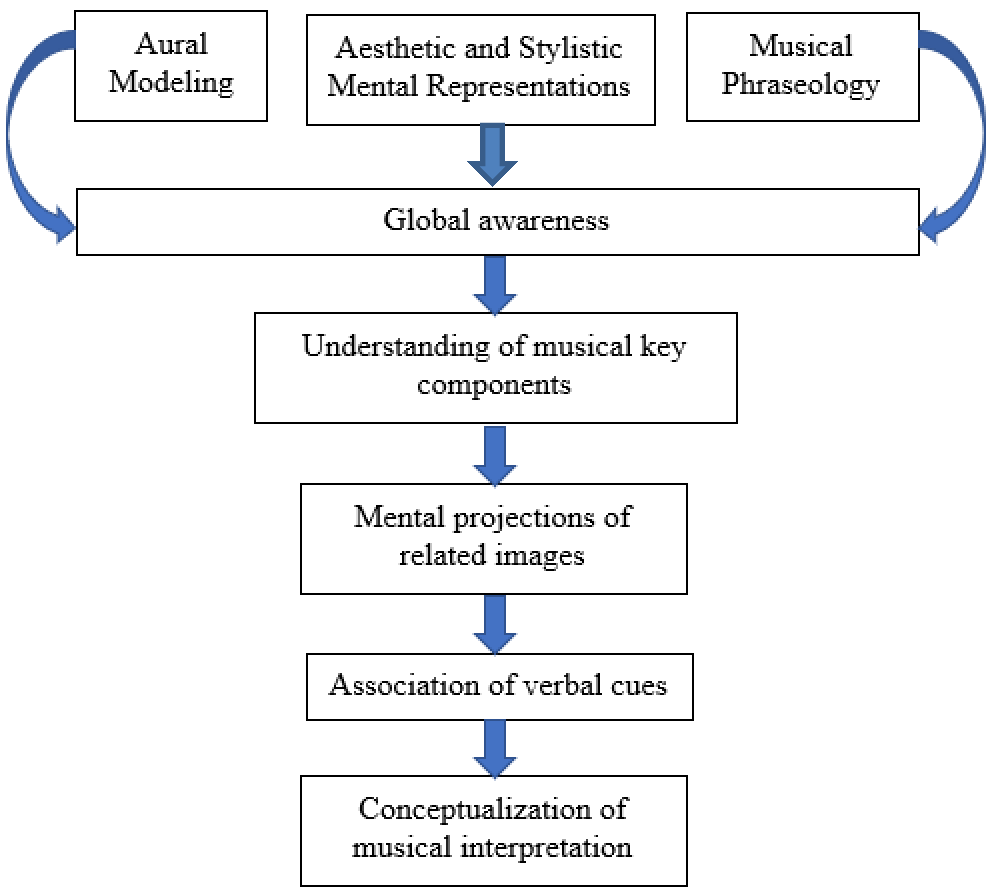

Figure 4. Successive steps of the tri-phase process of mental conversion.

Students' Approach to Musical Phraseology Through Its Four Components

This construct was designed as a meta-construct in order to provide me with an idea about how students perceived these four components (sub-constructs) intrinsic to a higher musical appreciation and that lead to a superior interpretation. Students used these components in association with the other constructs as they furthered their metacognitive learning during this research study. Expressive musical phraseology refers to the notion of musical expression in relation to the use of technique and active reflection and embraces the following four sub-constructs:

• *Expressive feeling* describes the way in which the students were able to convey their emotions in relation to the overall musical character and tempo of the music.

• *Musical subtleness* represents the judicious use of dynamics in relation to the micro- and macro-structure of a melodic phrase or passage.

• *Rhythmic variations* refers to the various inflections and deviations of the rhythm in order to bring vitality to the music and underscore its structure;

• *Melodic phrasing* refers to the manner with which students articulate the relationships between musical phrases through specific gestures, so as to translate expressively the inflection of musical ideas as they perform a given passage.

Expressive feeling. According to Juan, expressive feeling is "how you feel transmitted through the way that you play." For Maria "It is the sentiment that you manifest in your actual performance." Jorge remarked that "it is how you are able to express what you perceive in the music through the way that you play." Isabel defined the concept by stating that "it is how you are able to demonstrate and convey such feeling as joy, anger, sadness." Finally, Alejandra described it as "what you are expressing with regard to how you are feeling while playing."

Musical subtleness. Juan defined musical subtleness as "a delicate interpretative aspect of the music." For Maria, "It is the one aspect of the music that creates a difference." Jorge understood it as "the agility and delicacy with which you express the music." For Isabel, "It is the refined quality of the music that you are expressing." Alejandra, however, presented the idea that musical subtleness is "how you vary the way in which you play."

Rhythmic variations. Rhythmic variations were understood by Juan as "changes in the rhythm that is written." Maria echoed the same idea with an emphasis on the minute changes in details by stating that rhythmic variations represent "changes in the rhythm during performance by the player." Jorge offered another definition centering around the expressive intentions of the performer. He stated that rhythmic variations are "the various ways of altering a rhythm for expressive purposes." Isabel offered the following definition as the "changes in the distribution of the timing of the sounds." Another symbolic approach was offered by Alejandra, as being "the various notational timings included in the music."

Melodic phrasing. For Juan, melodic phrasing "is the shaping of ideas included in a melodic phrase." Another view was described by Maria as "how you use your musical ideas in order to shape a melodic line." For Jorge, "It is the way in which you express the melody." Isabel expressed another layer in the definition, one which conveys the idea of an aesthetic understanding of the melodic phrase. She stated that melodic phrasing is "the length of a musical phrase regardless of the bar-lines." Alejandra offered a definition that centers more around a metered conception of musical lines, by saying that "It is when the rhythm indicates how to shape a melodic phrase."

Teachers' Observations on the Use of Modeling as a Metacognitive Teaching Tool

An important factor for measuring the effectiveness of this method was the applied instrumental teachers' remarks on the observed musical growth of their students over the course of the study. According to their responses in their questionnaires, all reported that modeling used as a metacognitive teaching tool significantly influenced their students' musical expressiveness. In the present study, the application of a metacognitive approach to developing young students' expressivity at the piano acted as a catalyst to bring effective awareness of the needed cognitive processes. This suggests that heightened development of students' sense of musical expression is contingent on increased metacognitive practice.

Response to Research Question 2

The second research question centers on the metacognitive mechanisms involved in facilitating the conversion from the felt emotions to the students' musically expressive performance. The question sought to explore students' use of metacognitive means as a vehicle to translate their musical experiences into physical motions of arms and fingers at the piano in order to elicit an expressive performance. Students' metacognitive mechanisms to achieve an expressive musical performance yielded results highlighting their unique appropriation of the transformative ability concerned with the constructs discussed above. Each student exhibited an individual mode of learning processes of newly acquired knowledge that revealed how these concepts were put into use in order to reach an expressive goal through motion of the hands. Students' unique experiential impressions will be discussed as such in the following paragraphs and are based on their remarks from their diaries, questionnaires, and discussions.

Emergence of Themes

As illustrated earlier in the findings, considering that aural modeling and aesthetic and stylistic mental representations, along with musical phraseology, were functioning both independently and in conjunction with each other, it appeared logical that, in order to provide a response to research question 2, the resurgence of common themes had to be determined in this specific context. This undertaking had to consider the unique manner in which each student used the concepts and how this usage intersected with that of other students as they endeavored to formulate technical strategies for expressive musical interpretation.

As can be seen on Tables 3 and 4, five common themes emerged regarding how students appropriated these constructs in order to select the most appropriate hands gestures at the piano for interpretative purposes. These five themes were: (a) aligning mental imagery with sound through hands gestures, (b) aligning sound with hands gestures, (c) aligning mood with musical dynamics through hands gestures, (d) aligning stories with musical lines through hands gestures, and (e) aligning phrasing with fingerings and hand gestures.

As can be seen in the tables, when one compares aesthetic and stylistic mental representations with aural modeling, the theme of aligning mental imagery with sound through hands gestures appears the most frequently. The theme of aligning stories with musical lines through hand gestures appears the least frequently. What is underscored by this finding is a strong relationship between these themes and the constructs. When examining the frequency of appearance of the other themes, however, no such association can be seen between these two constructs. Other themes appear with more or less frequency due to the nature of the constructs and how students approached them.

When one observes the frequency of the themes' appearance for the construct of musical phraseology, the theme of aligning mental imagery with sound through hands gestures appears the most frequently in the five sub-constructs (with the exception of the sub-construct of rhythmic variations). This finding tends to echo the previous finding described above when comparing the construct of aesthetic and stylistic mental representations with that of aural modeling. The theme of aligning mental imagery with sound through hand gestures seems to play a prominent role across the constructs. Given the results, this highlights a certain uniformity in the mechanism through which the metacognitive method was perceived by the students.

Table 3

Emergence and Frequency of Themes for the Construct of Aesthetic and Stylistic Mental Representations and Aural Modeling

Aesthetic and Stylistic Mental Representations Themes	Juan	Maria	Jorge	Isabel	Alejandra	Total
• aligning mental imagery with sound through hand gestures	3	3	4	2	4	16
• aligning sound with hand gestures	3	3		2	2	10
• aligning mood with musical dynamics through hand gestures	4	2	3	2	3	14
• aligning stories with musical lines through hand gestures		3	2			5
• aligning phrasing with fingerings and hand gestures		3	1	3		7
Aural Modeling Themes						
• aligning mental imagery with sound through hand gestures	4	3	3		2	12
• aligning sound with hand gestures			2	2	3	7
• aligning mood with musical dynamics through hand gestures	3	3			2	8
• aligning stories with musical lines through hand gestures			3	2		5
• aligning phrasing with fingerings and hand gestures	2	2		3	2	9

Table 4

Emergence and Frequency of Themes for the Construct of Musical Phraseology

Expressive Feeling Themes	Juan	Maria	Jorge	Isabel	Alejandra	Total
• aligning mental imagery with sound through hand gestures	2	2	3	2	4	13
• aligning sound with hand gestures		3	2	2	2	9
• aligning mood with musical dynamics through hand gestures	2	3	3		2	10
• aligning stories with musical lines through hand gestures	2	2	2	2		8
• aligning phrasing with fingerings and hand gestures			2	3	2	7
Musical Subtleness Themes						
• aligning mental imagery with sound through hand gestures	2	2	3	3	3	13
• aligning sound with hand gestures	4	4	3	4	2	17
• aligning mood with musical dynamics through hand gestures	3	3	1	2	2	11
• aligning stories with musical lines through hand gestures	1	1	2		2	6
• aligning phrasing with fingerings and hand gestures		1	3	1	2	7
Rhythmic Variations Themes						
• aligning mental imagery with sound through hand gestures	3	3	3	1	1	11
• aligning sound with hand gestures	3	4	2	2	2	13
• aligning mood with musical dynamics through hand gestures	1	2	1	1	1	6
• aligning stories with musical lines through hand gestures		2	2	2	1	7
• aligning phrasing with fingerings and hand gestures	2	1	3	2	2	10
Melodic Phrasing Themes						

• aligning mental imagery with sound through hand gestures	2	2	1	3	2	10
• aligning sound with hand gestures	1	2	2	2	2	9
• aligning mood with musical dynamics through hand gestures	2	2	3	2	2	11
• aligning stories with musical lines through hand gestures	3	3	2	1	1	10
• aligning phrasing with fingerings and hand gestures	1	1	2	2	2	8

Through weekly interactions with the students, as well the students' entries in their diaries and on their responses to the various questionnaires, I was able to determine the motivations of the students with regards to the five themes they shared in common in relation to the three constructs (aesthetic and stylistic mental representations, aural modeling, and musical phraseology). The most striking element observed is that, while being able to discriminate among the constructs, students spontaneously applied the same aligning themes described above in their own ways, a logical outcome of their use of metacognitive learning.

Aligning mental imagery with sound through hand gestures. Concerning how the students aligned mental imagery with sounds through hands gestures, Juan expressed the idea that aligning mental imagery with sound helped to find what he considered logical hand gestures and fingerings. He explained, "In order to replicate the images that this passage creates in my mind, I first tried out various ways to hold my hands and tried different fingerings until I was satisfied in the way I was able to perform." This view was echoed in various ways by all of the other students, which suggested a causal relationship between the imagination and the technical methods employed to tangibly express these felt emotions at the piano.

Aligning sound with hands gestures. Regarding aligning sound with hands gestures, Maria explained that when one hears the sound in your mind first, one is more likely to find the correct way to produce that sound at the piano, that is, how to choose the fingerings and how to move the hands: “It becomes easier to think of the type of sounds you want to produce before you even play, because thinking ahead acts as a guide to help you find technical ways to re-create the sound you have in mind.” Isabel wrote that

> I noticed that in the repeated notes throughout the piece, I could change fingers on the keys because that is the only way I could produce the change in the sound I have in mind for each one of these identical notes. Notes remain the same, but I want them to sound different in order to create contrasts.

Similarly, Jorge indicated that

> The story told in the music calls for contrasts between the sections of the score. But contrasting the music means also contrasting the way in which you play those parts by finding the best technical solutions to reproduce the sounds that you imagined.

Aligning mood with musical dynamics through hand gestures. Aligning mood with musical dynamics through hand gestures required students to approach the sections of the piece as building blocks of emotional display that could be assembled to create contrasting sequences, as they indicated in their journals. The act of looking for the general character of the music and trying to separate each section into individual musical cells with their own mood, appeared to make it easier for students to create a logical discourse that emphasized the tonal character of the music. Thinking in this manner underscored how important it is that the students view the ability to transform a felt perception (the mood they sensed) into an opportunity to reflect and to find a technical means (fingerings and hand motion) in order to express it musically. For instance, Isabel expressed the idea that she "could imagine several ways of pressing the keys in order to convey the drama that the opening of the music suggested." This idea was corroborated by Juan who stated that "the mood of the music sets the way in which the performers must move their hands and fingers in order to give a convincing interpretation." Alejandra stated in the diary how she was able to use the dynamics markings in ways that also indicate her own emotional feelings about the music. This student also mentioned the use of "colored" words, a sort of synesthesia, which helped her see the music as a canvas of sounds and to better hear internally the sound that she wanted to create before pressing the piano keys.

Aligning stories with musical lines through hand gestures. An analysis of the entries from the students' questionnaires and diaries revealed that story-telling was prevalent in many of their decisions about how to better express not only the musical messages that they perceived in the music, but also their own. "Making stories from the music itself is a great way to remember various aspects of it and how the sections connect," remarked Jorge. According to the harmonic progressions underlying the shape of the musical lines, the students suggested that inventing a story made it easier to create logical tonal shades that parallel the dynamic indications in the score. Isabel also indicated that "the notes are telling me a story; it's like a matrix that the composer gives me in order to create my own music."

Aligning phrasing with fingerings through hand gestures. Aligning phrasing with fingerings and hand gestures elicited a great many remarks from the students in their diary entries and during their interactions with me. For the most part, they viewed the musical phrases as the melodic skeleton of the music. This view helped them map the melodic directions (ascending, descending, repetition of notes, appoggiaturas, and so forth). In addition, many considered the phrasings as an indication of the composer's intentions and that they had first to understand the interplay of the phrases within the sections. Jorge wrote, "Phrasing is the way to make the composer speak again. Finding good fingerings and movements is important to achieve this." They viewed that opportunity as a means to reflect on the various fingerings options that would best describe the musical content intended by the composer. Alejandra sums up that idea,

> When I try to find which fingerings to use, I look at the shape of the phrase, where it starts and where it ends, and I see how I can incorporate the idea of aesthetic and style as well as the other concepts used during the discussions, such as varying the rhythm, subtle musical inflections, etc. Doing this is very useful because I do not miss out on all the elements that are important for a good performance.

Juan indicated that his rhythm improvement was contingent upon his awareness of the general musical discourse which helped him break the melodic lines into smaller units in order to discover the basic rhythmical pulses in and between phrases. Jorge expressed the following: “Now I can hear the various nuances in key attack when trying to create a staccato or an accent on each note. Before, I was playing them the same way.” This observation exemplifies a case in which conscious understanding was brought about by listening to a model. This creates a contextual grounding for behavioral transformation in terms of skills acquisition and technical abilities. Alejandra observed, “When I became more comfortable understanding how the music should sound, then I was able to use my imagination to create a more expressive contour of the melodic lines by creating shades with the sounds.” Maria also expressed that idea

> Because it became easier to understand the structure of the music, I am able to emphasize moments of tension and moments of release in the music through the way I approached the keyboard, and I made many experiments to try to become more expressive according to what I thought the composer is trying to tell us.

As can be understood from the exploration of the students’ reactions in their responses, the convergence of these metacognitive mechanisms provided them with a laboratory in which they could reflect on ways to appropriately adjust their playing expressively. This was accomplished by their making conscious decisions about the best fingerings and hand motions to employ.

Response to Research Question 3

The third research question sought to explore the quality of the expressive pianistic performance exhibited by the students applying the metacognitive learning approach described here. Specifically, in order to provide a response to this research question, quantitative data were also gathered through the use of a Likert-type of scale found in the Teachers Questionnaires and in the Adjudicators Assessment Form. Consequently, questionnaires administered to the students' applied instrumental teachers (pre- and post-study), surveys in which a panel of adjudicators were evaluating the students' recorded performances of the Mozart excerpt (pre- and post-study), as well as students' comments in their diaries and surveys entries supplied the data for this research question.

Results of Comparative Analysis of Numerical Data

As explained in Chapter 3, the examination of the quantitative data focused on two sources: (a) the applied instrumental teachers' questionnaires (see Appendices L and R), and (b) the adjudicators' assessment form (see Appendix Q). In these documents, a set of Likert-type questions was employed using the following rating scale: 5 = Excellent; 4 = Good; 3 = Average; 2 = Fair; 1 = Poor. These questions centered on the construct of expressive musical phraseology that comprise the four sub-constructs or categories as follows: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing. In addition, I included a fifth category in the adjudicators' assessment form, (e) general use of expressive means. This sub-construct was not included in the teachers' questionnaires because it was considered that data obtained for this category could be biased and rendered irrelevant, due to the familiarity of the teachers with their respective students. The scores obtained were then averaged.

In Table 5, each of the five categorical components of musical phraseology contains two items labeled (a) and (b) as follows: expressive feeling, or EF (a)-(b); musical subtleness, MS (a)-(b); rhythmic variations, RV (a)-(b); melodic phrasing, MP (a)-(b); and general use of expressive means, GEM (a)-(b). Responses in these categories allowed me a greater degree of refinement in the evaluations from the adjudicators, given the qualitative nature of this study. Similarly, the responses offered a greater in-depth understanding of trends during cross-checking of the data.

Table 5

Pre- and Post-Initiation Outcome Comparisons of Adjudicators' Assessment

Variables	Pre-initiation M (SD)	Post-initiation M (SD)
EFa	3.47 (.64)	4.07 (.70)
Efb	3.53 (.64)	4.27 (.59)
Msa	3.33 (.49)	3.93 (.46)
MSb	3.13 (.35)	4.00 (.53)
Rva	3.13 (.52)	3.73 (.46)
RVb	3.27 (.59)	3.87 (.52)
Mpa	3.53 (.52)	4.27 (.59)
MPb	3.60 (.51)	4.33 (.49)
GEMa	3.27 (.46)	4.27 (.59)
GEMb	3.33 (.49)	4.20 (.46)

Note: EF = expressive feeling; MS = musical subtleness, RV = rhythmic variations; MP = melodic phrasing; GEM = general use of expressive means.

In order to assess the internal consistency (reliability) of the adjudicator's evaluation responses, and to confidently reduce the data by calculating means for each construct (items a's and b's), a Cronbach's alpha statistical analysis was employed with a set coefficient of .7. It provided me with a means to assess the overall consistency of the construct of expressive musical phraseology in relation to the five categorical constructs mentioned above. Coefficients ranged from .765 to .920, suggesting a moderately strong internal consistency (.920 for expressive feeling Efa-b; .793 for musical subtleness Msa-b; .765 for rhythmic variations Rva-b; .908 for melodic phrasing Mpa-b; .890 for general use of expressive means GEMa-b). Figure 5 illustrates the resulting means from pre- and post-initiation outcome comparisons of the adjudicators' assessment. In each category, the numbers presented are the average obtained from the responses of the adjudicators after listening to the pre- and post- recordings of the five students (ten recordings). Higher scores indicate higher results outcomes following the metacognitive initiation in the study. As can be seen in the post-initiation result numbers, in all the categories significant improvements can be noticed. This indicates a positive influence of the metacognitive initiation that was administered to the students.

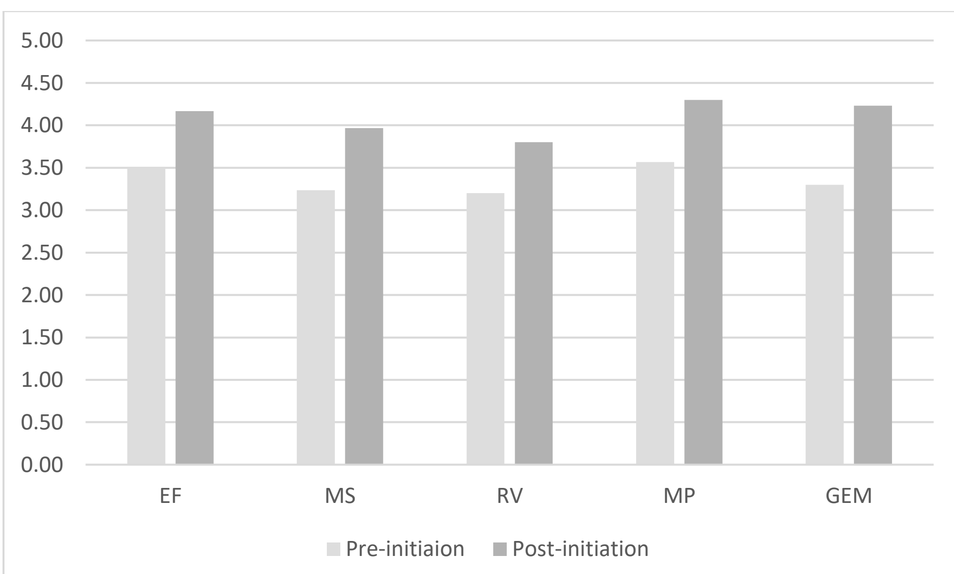

Figure 5. Pre- and post-initiation outcome comparisons of adjudicators' assessment chart.

The adjudicators' assessments provided an indication of the quality of the students' performance improvement and reflected the influence of the metacognitive initiation. In light of the above results and in order to gain a deeper and corroborating understanding of the results, five paired *t*-tests were conducted with the level of alpha set at .05 (Table 6). For this study, the null hypothesis was that there was no significant difference between the mean numbers obtained for the pre-metacognitive initiation and for the post-metacognitive initiation treatment based on the adjudicators' evaluations. The outcomes from these paired *t*-tests indicate that the *p*-value obtained for each of the *t*-tests is lower than the alpha value of .05. In this case, the null hypothesis could be rejected because the *t*-test values fell into the rejection zone. Thus, based upon this evidence, it is possible to conclude that there is statistically significant evidence to support the research proposition that the use of a metacognitive approach to developing expressive responses through aural modeling, and aesthetic and stylistic mental representations may positively influence the performance of young pianists.

Table 6

Paired Samples T-Test Results for the Adjudicators' Assessment

Pre- post-initiation		Test group n = 15		t	p
		M	SD		
Pair 1	PreExpressive Feeling - PostExpressive Feeling	-0.667	0.362	-7.135	0.000
Pair 2	PreMusical Subtlety - PostMusical Subtlety	-0.733	0.372	-7.643	0.000
Pair 3	PreRhytmic Variations - PostRhythmic Variations	-0.600	0.573	-4.054	0.001
Pair 4	PreMelodic Phrasing - PostMelodic Phrasing	-0.733	0.417	-6.813	0.000
Pair 5	PreGeneral Use of Expressive Means - PostGeneral Use of Expressive Means	-0.933	0.258	-14.000	0.000

I conducted a similar comparison with data obtained from the teachers' responses from their questionnaires, presented in Table 7 along with a corresponding chart seen in Figure 6. In Table 6, only four of the five categorical components of the musical phraseology constructs analyzed are presented. Each contains a single numerical entry as indicated earlier. As can be observed in the post-initiation result numbers, in all the categories except melodic phrasing, some improvement can be noticed which suggests a positive effect of the metacognitive initiation administered to the students, but without reaching statistical significance ($p > .05$). Furthermore, although all the applied instrumental teachers indicated in their final questionnaires their general use of some form of modeling, they reported several notable improvements in their students in terms of increased sense of musicianship and technical abilities. Modeling was used by the teachers for purposes such as (a) in support of breathing methods, (b) to increase expressivity, and (c) as a means to solve technical issues regarding fingerings.

Table 7

Pre- and Post-Initiation Outcome Comparisons of Teachers' Assessment

Variables	Pre-Initiation M (SD)	Post-initiation M (SD)	*t*	*p*
EF	3.60 (.55)	3.80 (.45)	-1.00	.37
MS	3.40 (.55)	3.60 (.55)	-1.00	.37
RV	3.00 (.71)	3.20 (.84)	-0.41	.71
MP	4.00 (.00)	4.00 (.00)	*a*	

Note: The correlation and *t* cannot be computed because the SE of the difference is 0.

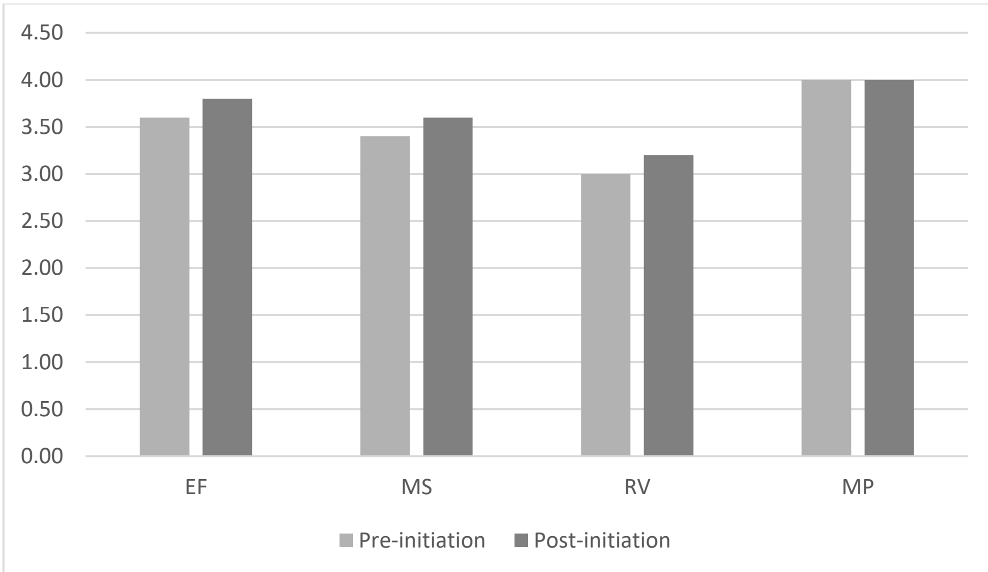

Figure 6. Pre- and post-initiation outcome comparisons of teachers' assessment chart.

Cross-Checking of Data and Convergence of Observations

Triangulation, understood as a cross-checking of data, denotes the use of more than one approach to the investigation of a research question so as to enhance confidence in the findings. For instance, according to Denzin (1978), the logic of triangulation is based on the premise that "no single method ever adequately solves the problem of rival causal factors. Because each method reveals different aspects of empirical reality, multiple method of observation must be employed" (p. 28). According to O'Donoghue and Punch (2003), triangulation is a "method of cross-checking data from multiple sources to search for regularities in the research data" (p. 78). After cross-checking the results obtained from the three sources, I found that one of the most salient outcomes of this study was the data supporting the development of a profound emotional tie to the music-making process (see cross-checking Tables 8 and 9).

Table 8

Cross-Checking of the Data from the Three Sources Pre-Metacognitive Initiation

Student Number	Categories observed	Teacher's ratings	Adjudicator 1 ratings	Adjudicator 2 ratings	Adjudicator 3 ratings	Students' observations in their diary
	Expressive Feeling	3	2	4	3	"what I feel when I play"
Juan	Musical Subtleness	4	3	3.5	3	"additional changes in the tone of the music"
	Rhythmic Variations	4	4	3	3	"varying the rhythm to affect the character of the music"
	Melodic Phrasing	4	3	4	3	"grouping of the notes to express your feelings"
	Expressive Feeling	4	4	3	3.5	"it is the perception of feelings"
Maria	Musical Subtleness	4	3	3.5	3	"a small aspect in the music that creates a different feel"
	Rhythmic Variations	3	3	2	3	"rhythmic changes used by the composer"
	Melodic Phrasing	4	3	3	4	"how the notes are linked to show a musical idea"
	Expressive Feeling	3	3	3	3	"expressing physically what you feel in the music"
Jorge	Musical Subtleness	3	3	3	3	"the ability to play delicately and with agility"
	Rhythmic Variations	3	3	3.5	3.5	"the differernt ways to play a rhythm"
	Melodic Phrasing	4	4	4	4	"the way the melody is played"
	Expressive Feeling	4	4	4	4	"how you demonstrate various feelings through playing"
Isabel	Musical Subtleness	3	4	3	3	" the finesse or quality of the music"
	Rhythmic Variations	2	3	4	4	"differences in the distribution of timings and of sounds"
	Melodic Phrasing	4	3.5	3	4	"the number of measures that make up the melody"
	Expressive Feeling	4	4	4	4	"when you express your feelings in various ways"
Alexandra	Musical Subtleness	3	3	3.5	4	"the subtle ways to show your feelings in your playing"
	Rhythmic Variations	3	3	3	3	"the differents timings used to display your feelings"
	Melodic Phrasing	4	3	4	4	"when the rhythm is phrasing the melodic line"

Table 9

Cross-Checking of the Data from the Three Sources Post-Metacognitive Initiation

Student Name	Categories observed	Teacher's ratings	Adjudicator 1 ratings	Adjudicator 2 ratings	Adjudicator 3 ratings	Students' observations in their diary
	Expressive Feeling	4	3	4	4	"communicating ideas when I play"
Juan	Musical Subtleness	4	3	3.5	4	"creating tonal contrasts while playing"
	Rhythmic Variations	4	4	4	3.5	"rhythmic contrasts for expressive purposes"
	Melodic Phrasing	4	4	4	4	"conceiving the melody as a phrase"
	Expressive Feeling	4	4	4	4	"these are the elements that are part of how you feel"
Maria	Musical Subtleness	4	4	4	4	"small details that you highlight for musical expression"
	Rhythmic Variations	3	4	4	4	"rhythmic differences to vary the musical expression"
	Melodic Phrasing	4	4	3.5	5	"the grouping of the notes for melodic expression
	Expressive Feeling	3	3.5	4	3.5	"showing how you think the piece should sound"
Jorge	Musical Subtleness	3	4	3.5	4	"the ability to combine different moods while playing"
	Rhythmic Variations	3	4	4	4	"the rhythmic changes that make up the music"
	Melodic Phrasing	4	4	4	5	"how the melody can be imagined"
	Expressive Feeling	4	4.5	4.5	5	"the aspects of your feelings when you play"
Isabel	Musical Subtleness	4	5	4	4	"subtle combinations of impressions when you play"
	Rhythmic Variations	4	3	4.5	4	"combinations of different types of rhythms"
	Melodic Phrasing	4	4	4	5	"the musical line of the melody"
	Expressive Feeling	4	5	4.5	5	"the ability to show your musical feelings"
Alejandra	Musical Subtleness	3	4	4	4.5	"subtle changes to create tone color in your playing"
	Rhythmic Variations	2	3	3	4	"changes between rhythms for expressive reasons"
	Melodic Phrasing	4	4	5	4	"the characteristics of the musical phrases"

Summary

This chapter offered a presentation of the study's results, based on to the data supporting each of the three research questions. Those questions aimed at assessing the effect of a metacognitive teaching method designed to help young pianists to perform more expressively by investigating their experiential processes. The students in this study highlighted the relatedness between musical aesthetics and musical style as part of a more general approach to musical understanding. The results also indicate that aural modeling appeared to have played a crucial role in recalling specific emotions or particular moods associated with the music. It would be used as a guide to translate their perceptions into words that would, in turn, drive their performance at the piano. This construct brought forth three specific areas of practicality: (a) suitability for understanding the idiomatic elements of the musical style, (b) usefulness in using an aural model as a lever for future recall during the phases of interpretation, and (c) suitability to help approach challenges in the perception of a tonal center within the sections of the piece while considering tonal changes due to temporary modulations. All these elements transpire in the overall positive effect of the metacognitive initiation as reflected through the students' final pianistic performances. Finally, the meta-construct of musical phraseology allowed to determine students' approach and subsequent use of its four conceptual components mentioned in the previous chapters in relation to the other constructs. These results are further discussed in Chapter 5.

CHAPTER 5

DISCUSSION

As evidenced by a growing corpus of empirical studies in the field, the emphasis on musical expression is often undervalued, if not ignored, during the initial stages of piano apprenticeship in private music instruction. Concentration on instrumental technique is the norm. An overview of the literature highlights the widespread reasons that lead to such a situation. These reasons are as follows: (a) due to the individually affective character of musical expressivity, the concept of expression cannot easily be described in words (Hultberg, 2007); (b) expressive playing cannot be learned as it is often considered as an indicator of musical aptitude; (c) general understanding of expressivity is implicit and consequently challenging to express in words (Juslin, 2003); and (d) when approaching the concept of musical expressivity, we find an absence of mental configurations and representations (Brigham, 1979) that would render learning a rewarding experience.

In the present study, I proposed an experiential learning approach as a vehicle to help educators engage students in navigating creative solutions in the learning process. They can then explore meaningful avenues of musical expression. By using a metacognitive approach, I examined the combined effects of aesthetic and stylistic mental representations and of aural modeling in relationship to four aspects of expressive musical phraseology: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing. These were examined to foster an idiom that would elicit expressive musical responses in young piano students.

Through the mental conversion process resulting from the use of this method, students were able to shift from the intangible (mentally projected images of internally perceived sounds) to the tangible (physical pianistic performance through appropriate gestures) by generating an individualized idiom. This newly acquired medium of expression allowed students to reach within themselves to find new interpretive capabilities and to validate their uniqueness as musical beings. This chapter offers a discussion of the outcomes of this study and is organized according to the evidence supporting each of the three research questions.

Discussion on Research Question 1 Outcomes

For the first research question, the constructs of aural modeling and that of aesthetic and stylistic mental representations along with that of musical phraseology were used as a framework for observation of behavioral responses in students as they were experiencing the metacognitive method of learning expressivity. For this research question inquiring about the perceived impact of aural modeling, and aesthetic and stylistic mental representations in the metacognitive process, whereby young pianists can elicit an expressive musical idiom, I observed the formation of a tri-phase process of mental conversion based on the remarks from the diary entries and questionnaires provided by the students. Therefore, the constructs mentioned above acted as a catalyst in conveying effective awareness of the cognitive processes needed in this context of musical learning and performing. This awareness implies that an increase in metacognitive practice is likely to yield a higher sense of musical expression among students. Two main aspects emerged from the findings in this aspect from the study: (a) personalization of the appropriation of the conceptual processes, and (b) heightened awareness of sensory perceptions.

Personalization of the Appropriation of the Conceptual Processes

An important outcome in this study highlighted the defining role that aural modeling and aesthetic and stylistic mental representations play in the metacognitive approach to musical expression. It represents a means to create an individualized interface linking various interrelated areas of musical interpretation, along with the concept of aesthetic and stylistic qualities that pertain to any type of music. From the musical excerpts used as models during the phases of learning, students were able to identify and associate elements of musical interpretation as building blocks. Such findings underscore the idea of scaffolding in teaching and learning as “a way of operationalizing Vygotsky’s (1987) concept of working in the zone of proximal development” (Wells, 1999, p. 127), specifically focusing on the tasks that lead to new knowledge.

When prompted with questions on how they perceive the importance of the use of a model coupled with the understanding of aesthetic and stylistic mental representations, students generally indicated that it was important for them to be better acquainted with musical styles and usages in the various eras. Yet, they furnished minute details in their explanations that denote how individualized their perceptions were. For example, they referred to aesthetic sensory perception of a sound as an indicator of a given sensation; aesthetic perception of a musical phrase filtered through the lens of a musical style; and stylistic conceptions of a musical idea as an interpretation. Although vicarious guidance provided through the modeling phase was influential, the individualized appropriation of the learning path itself speaks to a level of identification with the learning process in which students see the model as a transitional support upon which aesthetic and stylistic understanding can be approached.

A tri-phase conversion process was identified in which, through a meta-strategic level of thinking, students were able, after listening to appropriate musical excerpts, to identify and link the musical style of the music to the individualized aesthetic manner in which Mozart was expressing his mood. In a final step, students were able to elicit sets of mental images that would help them generate suitable interpretative gestures at the piano, backed by an appropriate idiom for recall.

In the context of the present study, aural modeling appears to serve an important purpose as a purveyor of a musical context which paves the ground for idiomatic identification with concrete perception of the music as an epitome of a particular genre (here, the Classical era as illustrated through the Andante by Mozart). Aural modeling requires an active listening capacity which allows musicians to use what has been heard as prompts to make informed decisions during actual performance. During the music-making process, this capacity becomes metacognitively active when the listener uses musical cues, as in this instance, to create a framework of musical expressive possibilities of which they are wholly aware.

During the tri-phase process already mentioned, it is important for teachers to make students understand the inter-connectedness of this metacognitive progression during which the layering of various types of perceptions are enacted. Through their entries in their journals and questionnaires as well as during the discussions with me, students were unanimous about the transformation of thought that had occurred. From a nearly intuitive approach to musical understanding in terms of styles and aesthetics, to a more conscious expressive attitude, students were able to create the expressive ground on which they could render tangible (through performance) the mentally projected representations resulting from hearing a model.

This method was first met with a certain degree of anxiety and perplexity by some students. It became evident that the implementation of such a new approach to music learning required the establishment of an environment in which the learner could feel both comfortable and stimulated. In other words, teachers who use this approach must create a trusting relationship with the student. This relationship allows to move from a hierarchical method of learning to one in which the student is empowered through careful guidance.

An important factor for measuring the effectiveness of this method was the applied instrumental teachers' remarks on the musical growth of their students over the course of the study. According to their questionnaires responses, although all of the teachers were employing an approach in which they would systematically model the pieces, they did not appear to incorporate an interplay in which the students would be asked to use the modeled interpretation as a springboard to elicit further musical responses. Furthermore, it was possible to compare and relate the types of teaching techniques used by the teachers and the levels of musical proficiency achieved by their students.

Modeling was listed by all the teachers as a prominent means to teach expression. This technique was used mainly during the initial phases of learning of a new piece, part of an overall presentation of the work prior to systematic study. For one teacher, modeling was accompanying the learning process of the students as a framework of expressive reference. For the remaining three teachers, modeling was used as a shortcut to help the student understand expressive articulations of the piece when the music's complexity prevented the students from making informed choices. Other techniques included modeling breathing methods to relieve the students of physical tensions and allow a greater freedom in their expressive ability. One teacher reported modeling as a way to look for appropriate fingerings to facilitate the expressive rendition of the piece. These observations corroborate Bandura's (1986) remarks concerning the use of modeling as "the capacity to learn by observation [that] enables people to expand their knowledge and skills on the basis of information exhibited by others" (p. 47).

Heightened Awareness of Sensory Perceptions

The metacognitive approach to learning places the students in the center of their own knowledge acquisition, and it renders possible an increased consciousness of the physical requirements to produce a particular task. Due to the fact that students are asked to make conscious decisions throughout the learning process, they become more aware of the physical requirements necessary to achieve their expressive goals. The process by which the brain selects, organizes, and interprets the sensations received through the sensory receptors of the students are becoming more apparent to them as they engage in active learning. They then make enlightened decisions in terms of selecting the best suited physical actions, as well as determine relevant aesthetic, and stylistic interpretative possibilities.

According to some students, the use of a model (presented through video excerpts during my research process), coupled with the various ensuing discussions, triggered their curiosity as they investigated the many ways on how to find adequate fingerings that would best aid their musical expression. Jorge noted

> I am now more conscious that the repeated notes throughout the piece must each be played with a different musical character and not just be repeated for the sake of repeating them because they are simply aligned on the score. So, I have to look for a way to change fingers on each of these notes, and also look for the intensity with which I press the piano key for each of them.

For Juan, listening to the model helped him "to understand the intentions of the composer. It became easier to find performance solutions concerning the intensity to be used when pressing the keys, the choice of fingers, and the way to use the pedals."

Discussion on Research Question 2 Outcomes

For the second research question, in which I sought to discover the metacognitive mechanisms involved in facilitating the translation from one's felt emotions to the actual expressive performance, I have described in Chapter 4 the emergence of five common themes regarding how students appropriated the constructs used in this study. I have also highlighted how students employed these themes to select appropriate hand gestures at the piano used for interpretative purposes. Using these premises, they were able to reflect on how best to regulate the expressivity of their musical interpretation by continually seeking the best fingerings and hand motions to employ. These themes were: (a) aligning mental imagery with sound through hands gestures, (b) aligning sound with hands gestures, (c) aligning mood with musical dynamics through hand gestures, (d) aligning stories with musical lines through hands gestures, (e) aligning phrasing with fingerings and hand gestures. From these themes, students selected various set of words as cues for recall during interpretation.

These five themes illustrate a common trend among students employed to achieve their musical goals: they used processes by which they linked their expressive goals to the actual performance as channeled through the five interpretive constructs mentioned above and detailed in Chapter 4. This translation process focused on two sequential learning techniques:

- The students were able to associate their understanding of both the musical style and the Mozartian aesthetic to a set of expressive gestures at the piano to perform in a convincing manner reflecting not only their understanding of the music but, even more importantly, the expression of their unique artistic personalities.

- By means of mental projections derived from listening to a model as a conceptual framework, students achieved a specific conversion process incorporating almost simultaneously the various elements needed for an inspired, expressive interpretation. They achieved this result by combining the use of musical dynamics and tempo with the proper hands and fingers gestures to bring an overall sense of persuasive lyricism to the music.

Although all students mentioned difficulties in the translation process during the early stages of the study, they also indicated that becoming familiar with aural modeling, as well as with aesthetic and stylistic mental representations, gained them new knowledge. For instance, the mental images that came from listening to a model prompted the students to carefully think about the emotional aims they wished to convey during performance. Because students created their own mental vision of the music, they were able to achieve their expressive goals by using particular cues—words describing specific mental images, words describing stylistic and aesthetic features associated with particular dynamics—as meaningful markers in the translation process.

It appeared important to provide guidance to the students by suggesting ways to choose a set of words that would encapsulate their conception of the section of the piece as they navigated their own interpretation. Allowing access to an expressive idiom appeared to have eased the conversion process from a verbal agent to an expressively tangible one in performance. Musical comprehension is procedural, that is, knowing how to play. This means that students know how the performance should be carried out, but are not yet able to clearly formulate the process. This study provides a way of knowing, the declarative knowledge, that reflects the ability to approach music in representative, linguistic terms. Allocating a mentally creative space in which students can think and express conceptual understanding in their own terms bolsters musical perception from the procedural sphere to the declarative domain. Seen from this perspective, words increase conceptual understanding as they empower us to think critically. This approach to understanding can help students apply such concepts to other contexts. That idea is stressed by Bransford, Brown, and Cocking (1999) who state that:

> A pronounced difference between experts and novices is that experts' command of concepts shapes their understanding of new information: it allows them to see patterns, relationships, or discrepancies that are not apparent to novices. They do not necessarily have better overall memories than other people. But their conceptual understanding allows them to extract a level of meaning from information that is not apparent to novices, and this helps them select and remember relevant information. (p. 17)

The metacognitive mechanisms highlighted above in explaining the responses observed for this research question speak to an important process used in metacognitive learning and described as "verbal mediation" (Vygotsky, 1986) also referred to as "self-talk." It is a way of thinking aloud during students' practice in order to discover the origins of a difficulty and, consequently, achieve a deeper grasp of a task. As Mithen (2005) observed, children who supply their own verbal observations acquire skills faster than those who do not. Concerning the method described in present study, this notion of verbal mediation has been adapted through a prior added step of scriptural mediation alluded to earlier, during which the vocabulary chosen by the students is first written out and then used mentally for recall. It could thus be described as an inner verbalization. A synoptic illustration of this mechanism appears on Figure 7.

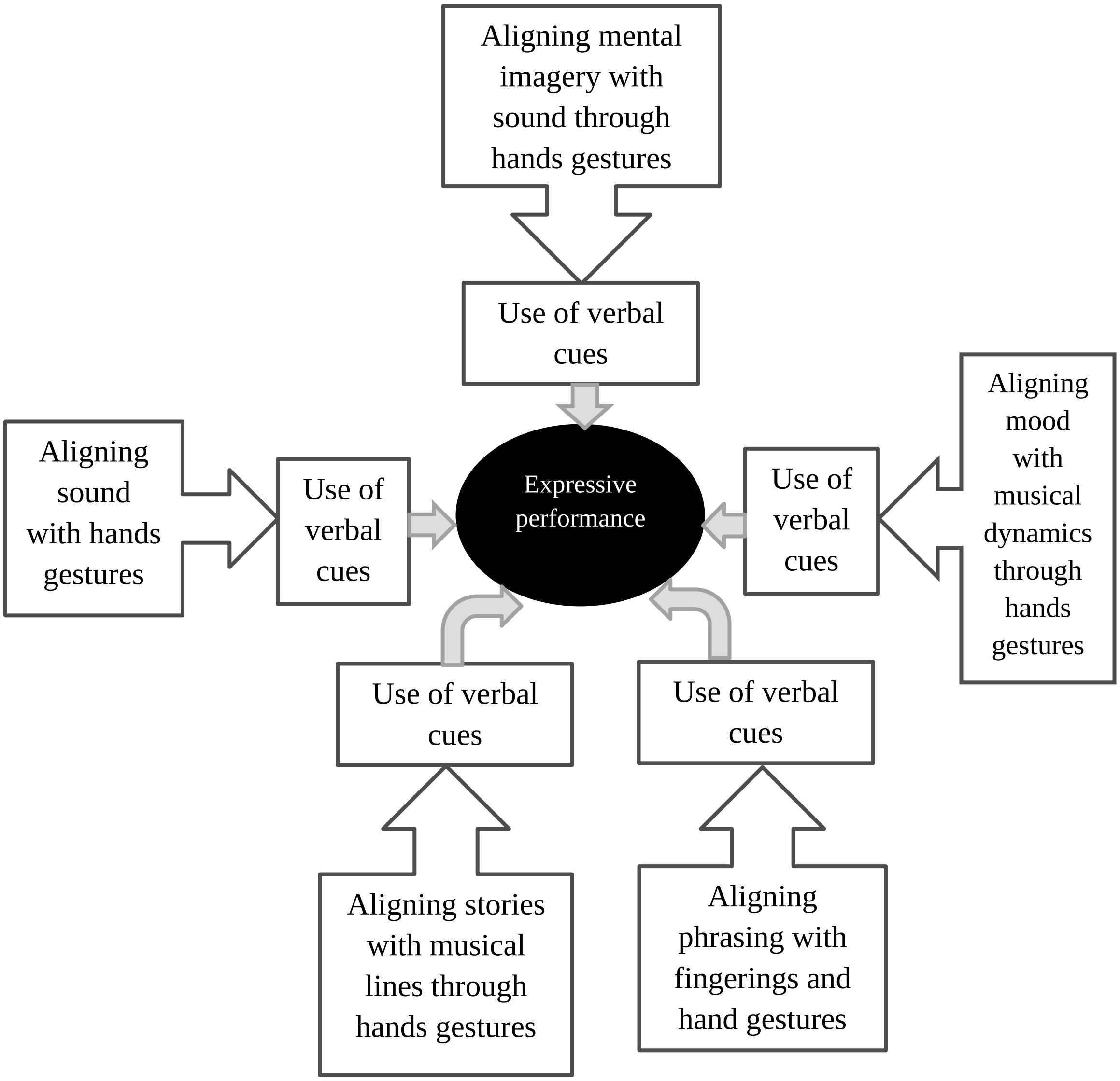

Figure 7. Verbal mediation mechanism map.

Discussion on Research Question 3 Outcomes

The third research question sought to examine the extent to which the metacognitive process positively influenced the expressive qualities of the students' piano performance. Surveys in which a panel of adjudicators were evaluating the students recorded performances of the Mozart excerpt (pre- and post-metacognitive initiation), questionnaires administered to the students' applied instrumental teachers (pre- and post-metacognitive initiation), as well as students' observations and comments in their diaries and surveys entries used for cross-checking of data supplied the data for this research question. The Likert-type responses found on the applied instrumental teachers' questionnaires and on the adjudicators' assessments were processed statistically using SPSS and showed a positive influence of the metacognitive method.

Observations Regarding the Data from the Adjudicators' Assessments

Comparative results were obtained from pre- to post-metacognitive initiation outcomes (through randomized students' recordings presentation) based on each of the five categorical components of the musical phraseology construct. As indicated in Chapter 4, although the results observed from the adjudicators' assessments in all the categories indicated a positive influence of the metacognitive initiation administered to the students, improvements emerged more noticeably for the sub-constructs of musical subtleness MS (b) and melodic phrasing MP (b). The statistical substantiation of improvement observed in the area of performance quality is an important acknowledgment of the effective value of the metacognitive learning method employed in the present study.

Because musical subtleness is a measure of the judicious use of dynamics in relation to the micro- and macro-structure of a melodic phrase, any improvement in this category may speak to the students' capability to project, through the way they played, their notion of the music from a personal interpretational set of lenses, as well as their acknowledgment of the overall aesthetic and stylistic sentiment intended by the composer. Melodic phrasing here refers to the manner in which students articulate the relationships between melodic phrases through specific gestures. These translate expressively the inflection of musical ideas as they perform a passage. Improvement in this category underscores the growth level of expressive conviction and authenticity achieved by students and prompted them to articulate a technique-based mediation between their musical understanding and their performance.

Observations Regarding the Data from the Applied Instrumental Teachers' Questionnaires Responses

Comparative results were obtained from pre- to post-metacognitive initiation progress outcomes from students based on four components of the musical phraseology construct. The fifth sub-construct, general use of expressive means, was not included in the teachers' questionnaires as it was considered that data obtained for this category could be biased and rendered irrelevant, in this instance, due to the familiarity of the teachers with their respective students. As reported and explained in Chapter 4, with the exception of a negative result observed for the sub-construct of rhythmic variations (RV), noticeable improvement was observed in all the categories. The most important ones were expressive feeling (EF) and musical subtleness (MS).

Although the teachers used some level of metacognitive input into their teaching, including aural modeling as a means to frame the musical context of the music they present to the students, they did not mention any systematic and rigorous pedagogy in which specific steps would be implemented. The teachers would employ a device such as contour analysis of the musical phrases, as well as fingerings in order to match the performance envisioned by the student and resulting from a mental projection of images or words. For instance, one teacher mentioned playing for her students various sections of the pieces that they were studying and recommending certain fingerings. Although the intention is justified in trying to help students both expressively and technically, this approach does not invite the students to participate in the learning process by prompting them, through questioning and reasoning, to come up with their own solutions.

The applied instrumental teachers, however, attested to the improvements they observed near the end of the study. The students grew conscious of articulating their musical ideas and produced the pianistic sound they wished to hear. This aspect is corroborated by the students' observations of how more aware they had become in making discerning judgments. One teacher sums up

> Although it used to take many weeks for this student to grasp the overall musical idea of the music we were working on, in recent weeks I have noticed the emergence of a steady maturity in the way he would use his musical abilities, both in being more discerning about the physical gestures that he applies, and in his use of the dynamics in order to create and express a logical understanding of the piece during performance.

Observations Regarding the Data from the Students' Comments

The third set of data provided a window to measure the students' progress. In the early stages of the study, students' entries attested to the ways in which they spent their practice time, as well as how they implemented the notions introduced by me. It became apparent in the last month preceding the conclusion of the study that these entries indicated personal observations about their musical expressive growth as performers. Students' observations underscored their perceived changes in their learning habits and the ways in which they were becoming more expressive in their musical interpretations. These indications revealed a shift from a passive and technique-oriented learning approach to an individual one that calls for active participation of the senses.

Students articulated that this metacognitive process facilitated their ability to access levels of consciousness that they would use to explore more possibilities of expressive musical development. They were signaling the importance of acquiring new skills as conscious, participatory learners. This achievement came from their faculty to draw from a combination of stimuli (mental representations, auditory cues, and so forth) to inform a higher level of musically expressive performance.

Observations in the students' diaries, questionnaires, and discussions corroborated the findings in Brown and Palmer's (2013) research regarding the influence of the processes of mental imagery during memory encoding and retrieval of information. The present study goes one step further by clearly articulating the process involved in the time-based aspects of performed and mentally visualized movements as part of the tri-phase process of mental conversion. Through an enhancing learning, they tapped into the possibility to look for different expressive perspectives as they became more independent in order to continue to develop beyond their craft. Using reflection as an integral function of the learning process falls within the concept of self-directed learning (Gibbons, 2014) one which allowed the study's students to identify their areas of growth and act accordingly.

Implications

Considerations Regarding the Metacognitive Adaptation of Vicarious Learning Capabilities

This aspect of the study speaks to the transforming impact of a conscious metamorphosis regarding the way in which students approached their performing goals as a result of their introduction to the metacognitive method. A more conscious and engaging learning environment provided some creative means by which the students were able to explore musical interpretative solutions from both a technical and an expressive lens as they ventured beyond their comfort zone.

An additional result of this study is that the development of musical expressivity calls upon the musician's ability to unveil, identify, and channel his or her emotions in ways that are uniquely emancipating to the performer. This reflects Prosser and Trigwell's (1994) remarks that

> Learning outcomes, or ways of understanding which include the more complete ways of conceiving of something, are of higher quality than those involving more limited conceptions. Students who are able to see relations between elements of their understanding in a subject and are aware of how that understanding and those relationships can be applied in new and abstract contexts have a higher quality learning outcome than students who cannot. (p. 4)

When the student becomes the center of the aesthetic moment in both the learning and the performing stages, the metacognitive music-making process connects him or her to an imaginary province in which the emotional layers of expressive means provide a venue for an artistic and inspired musical expression. These emotional layers are encapsulated in an idiom that students are able to call on to enhance their learning and, ultimately, their pianistic interpretations. As Custodero (2002) observed

> Taking intellectual ownership of musical materials by transforming them into something individually meaningful provides both aesthetic delight and a means to learning. By transferring knowledge from an imitated model to a source of original thought . . . one can demonstrate the depth of their understanding. (p. 7)

From the experiential learning advocated in this study through a metacognitive approach to developing expressiveness, it appeared that the translation process allowed students to successfully improve their expressive pianistic abilities. Such an improvement was achieved through the creation of an individualized idiom that resulted from processing mental images of sounds. In a second stage, this process was transferred to actual pianistic performance through appropriate gestures by the creation of an individualized idiom. This newly acquired medium of expression allowed students to reach within themselves for new interpretive capabilities and to validate their uniqueness as musicians.

Based on Bandura's (1986) social cognitive theory, the aim of this case study was to investigate the effect of a teaching method designed to help young pianists to perform more expressively. Bandura's framework was of major significance because it set the inquiry inside human thought processes. Those processes were used as catalysts to transform both aural and visual observations into tangible actions. Common practice for teaching music usually places the teacher as the purveyor of information (Freire, 2000) and the students as receptors. Common practices for teaching music usually places the teacher as the purveyor of information (Freire, 2000) and the students as receptors. Reimer (2003) similarly highlights the pedagogical dichotomy in which technical abilities in performance proficiency are given precedence over the expressive features of music seen by the order in which they are introduced to students. He refers to this practice as "technique now, musicianship later."

Avoiding this behaviorist-centered method, the proposed pedagogical approach rethinks traditional teaching behaviors employed in musical instruction. In the early stages of piano instruction, the student is not usually led to self-reflection in problem solving but is encouraged to seek answers from the teacher. The results of the present study appear to imply that teachers should equip their students with strategies, at an appropriate level of difficulty, for them to consciously direct their own learning, including the stages of monitoring and evaluation. This understanding aligns with social cognitive theory, which assigns a central place to self-regulatory capabilities (Bandura, 1986). In Bandura's words, "People do not behave just to suit the preferences of others. Much of their behavior is motivated and regulated by internal standards and self-evaluative reactions to their own actions" (p. 20).

The advantages of employing this method during piano lessons were selecting appropriate learning strategies (for instance, choosing specific fingerings in accordance with the technical demands necessary to express the phrases) and transferring them to new settings by adapting previous abilities to a new expressive context (Pressley et al., 1987). When the students were prompted to reflect on their actions as they performed a task (Bandura, 1986; Biemiller & Meichenbaum, 1992), they appeared more eager to take ownership not only of the outcome but also of the paths that led to the desired performance results. This use of reflection as an integral part of learning is what Zimmermann (2000) describes as self-regulated learning; he refers to “self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals” (p. 14).

Limitations and Recommendations for Future Research

The conclusive results observed in this study highlight the benefits of a metacognitive approach to help young students develop and improve their expressivity in piano playing speak to the value of integrating this approach in private instruction. The implications for the field are various, especially considering that method books designed for instrumental teaching do not generally deal with expressive musical features with regard to lessons plans (Rostvall & West, 2001). Nonetheless, a consideration of the limitations encountered in the present research will likely be beneficial to future studies in the field by enhancing the possible methods that can be applied. These limitations consist of the small sample size, the instrumental medium constraints (only piano students), the length of the study, and students’ ages in relation to their musical development. Factors such as the participants’ racial, ethnic, gender orientation, and socioeconomic status should also be taken into consideration.

Small Sample Size

As indicated in Chapter 3, the selection of a case study design for the present investigation was based—in addition to observing specific behaviors—on “expand[ing] and generaliz[ing] theories” (Yin, 2009, p. 15). Bandura’s (1986) social cognitive theory was applied as “a template with which to compare empirical results of the case study” (Yin, 2009, p. 38). Although a positive influence of the metacognitive method was shown in this study, a larger number of participants might have allowed for additional data. Such data, in turn, could pave the way for the emergence of new themes during the data analysis.

Instrumental Medium Constraints

Although the piano was the chosen musical instrument for this study, it might prove useful to investigate how this metacognitive approach could be adapted to other instruments, including the human voice. Additional insights could be gathered from vocalists, violinists, or flutists, to name only a few. These could help customize the metacognitive method on developing musical expressivity. The same approach could also be applied with respect to non-Western musical instruments.

Length of the Study

This study was carried out over a 12-week period. I was able to gather the necessary data without the difficulties of attrition, absence of data from surveys, and questionnaires not being returned, and so on. The metacognitive method might become more efficient if implemented over a longer period of time. Additional results might appear. The key element of this original approach is the consistency with which the students build a new understanding of how to become the center of their own learning. Developing such a new set of mechanisms requires time so that each aspect of the method can become familiar and automatic. Additional evaluation instruments would need to be designed as well as readjustments in how certain data should be gathered, for example, additional recordings or restructuring the group meetings. In so doing, useful information and new implications for the field could be gathered.

Students' Age Range as Factor Influencing their Stages of Musical Development

Students participating in this study ranged from 12 to 15 years of age and all had achieved an intermediate level of piano proficiency. It could be useful to conduct additional research specifically designed to measure the influence of age on the effectiveness of the metacognitive method. The mental maturity of 18-year old adolescents might yield different results in their use of the method when compared with 11-year-olds at the same proficiency level. Results provided by such additional research could be used to refine and customize the way in which the metacognitive method to developing musical expressivity is used.

In addition, the present study proposes an approach geared toward increasing the awareness of the students' capabilities through the learning process, their stages of musical development, and their pedagogical implications. These three might correlate to distinctive ways of learning. To ensure maximization of the method, attention should be given to this area of research. Some avenues of investigation might include: (a) aspects of the metacognitive method that can best address the stages of musical development with regard to the students' age groups, including children in Kindergarten; (b) specific adjustments that might become necessary when using the method with exceptionally gifted children regardless of their age; and (c) the determination that a particular age groups is more likely to profit from this method than other groups.

One-To-One Setting versus Group Setting

One obvious limitation of the present study is that it deals with private piano students. These students received weekly private lessons in a one-to-one setting. Such an environment usually favors individualized guidance from the teacher. It would be of interest to investigate how the metacognitive method could be implemented in a classroom. By making adjustments in the methods with which data can be gathered, researchers might learn new ways to teach metacognitive strategies in the classroom that aim at developing students' musical expressivity. Such metacognitive approaches can be imparted (Halpern, 1996) and they are linked with effective learning (Borkowski et al., 1987).

Racial, Ethnic, Gender Orientation, and Socioeconomic Status of Participants

The students who took part in the present study were coming from well-educated upper-class Mexican families who could afford private piano instruction to their children. The questions are how socioeconomic status, gender orientation, and ethnic background can affect the efficacy of the metacognitive method used in this study and, consequently, how to adapt this method in areas with low educational attainment. Blustein (2013) found that racial, ethnic, and socioeconomic hindrances generally hamper individuals' vocational growth. Career barriers are substantially higher for people of color, people from poor backgrounds, women, or those with disabilities, as well as LGBTQ-identified individuals. Exploration of this subject might benefit the applicability of the metacognitive method by enhancing its practicality in a wider range of pedagogical situations. Further implications for the field might revolve around such considerations as (a) the societal context, (b) the types of repertoire and settings used (choir, band, orchestra, chamber formation, and so on), (c) the grouping of students according to their level of musical proficiency, and (d) the quality of the interactions between teachers and students. This list, however, is not exhaustive.

Conclusion

The National Standards for Arts Education as published by the National Association for Music Education (NAfME, 2014/2020), underscore the idea that to promote "conceptual understanding in areas that reflect the actual processes in which musicians engage" (p. 1) students should develop experience in "creating, performing, and responding to music" (p. 1). Such an account stresses the key role that awareness of one's thoughts must play to achieve these goals. The *New Harvard Dictionary of Music* (2003) defines *expression* as "not necessarily imply[ing] that anything in particular is being expressed, though some connection with emotion, even if undefined, is usually presumed" (p. 295). This description also underscores the important tasks involved in the art of musical creation which comprises pitch, rhythm, tempo, articulation, and dynamics. Although these characteristics are usually indicated in the score, their realization is subject to the performer's own appreciation of its details. This creates a context in which teaching and learning occur.

Although the effect of auditory modeling in music and motor learning (Goins, 2006; Sang, 1987; Watson, 2006; Woody, 1999, 2000, 2003, 2006, 2010) or the effect of mental representations on musical expression (Bowes, 2009; Goins, 2006; Trusheim, 1987; Woody, 1999, 2000, 2003, 2006, 2010), are well known, few scholars, prior to this study, have applied the metacognitive approach to teaching expressivity to young pianists. This approach to teaching musical expression focuses on an auditory model combined with aesthetic and stylistic mental representations. This study attempted to bridge that gap and to provide evidence that reflective ability, introduced by a metacognitive approach, might be effective in generating an expressive musical performance by young pianists.

Teaching musical expression can present challenges in finding appropriate pedagogical strategies. The metacognitive approach to developing musical expressivity used in this research yielded several key outcomes. One aspect highlighted by this study is the important role played by a set of external stimuli drawn from active listening of modeled references by the students in order to create an imaginary support (mental projections used as narratives) which would then be codified through a specific idiom for recall during performance. Doing so allows the student to create a mental chart of the piece grounded in the examination of its music.

Students were able to (a) significantly improve the quality of their playing both expressively as well as technically, (b) express their awareness of the steps involved in the process, especially those concerned with the planning, reflection and evaluation of the progress and performing results, and (c) become more autonomous in their habits as they monitored their progress. This third point deserves a special attention, because all of students' practice takes place after the weekly lesson. When students metacognitively monitor their learning, they can achieve a level of expertise in their expressivity (Tobias & Everson, 2002). This awareness of the processes of learning becomes helpful to students through their lessons in that it creates a space in which the experience with the teacher can be fully felt both during and after the lesson. Such learning means that the students take an active responsibility in setting their goals and assuming the appropriate actions needed to reach them.

Expressivity in music making is a uniquely personal trait that reflects the performer's emotional sensibilities. Students should have the possibility to consider alternative strategies to learn and develop this capacity, one based on "process-level" in performing (Berardi-Coletta et al., 1995). This pedagogical strategy is a powerful vehicle with which students can engage in a never-ending spiral of personal expressive growth and reach far beyond their craft as enlightened musicians.

APPENDIX A
UNIVERSIDAD PANAMERICANA APPROVAL LETTER

UNIVERSIDAD PANAMERICANA

eba
Escuela de Bellas Artes

Subject: Letter of Authorization to Conduct Research at the Universidad Panamericana.

Dear members of the Institutional Review Board at Boston University,

This letter will serve as authorization for Serge Bonnaire (PI), DMA Candidate, College of Fine Arts - Music Education Department at Boston University to conduct his doctoral study entitled "Aural Modeling and Mental Representations as a Springboard to Elicit Young Students' Metacognitive Responses in Developing an Expressive Idiom at the Piano" at the Universidad Panamericana, Mexico.

The Universidad Panamericana acknowledges that it has reviewed the protocols presented by the researcher and authorizes the research project to proceed upon approval from Boston University Institutional Review Board.

If we have any concerns or require additional information, we will contact the researcher and/or Boston University Institutional Review Board.

Sincerely,

University's Authorized Signatory

November 20, 2017
Date

Dr. Gabriel Pliego, Dean of the School of Fine Arts
Printed Name and Title of Authorized Signatory

Antonio Dovalí Jaime 75, 4º piso. Centro de Santa Fe, 01210. Tel (55) 5482 1600 ext. 5735, bellasartes@up.edu.mx

APPENDIX B
IRB APPROVAL LETTER

Boston University Charles River Campus Institutional Review Board

25 Buick Street
Room 157
Boston, Massachusetts 02215
T 617-358-6115
www.bu.edu/irb

BOSTON UNIVERSITY

Notification of IRB Approval: Initial Review

December 7, 2017

Serge Bonnaire
Doctoral Student
College of Fine Arts
School of Music Education

Protocol Title:	Aural Modeling and Mental Representations as a Springboard to Elicit Young Students' Metacognitive Responses in Developing an Expressive Idiom at the Piano
Protocol #:	4557E
Funding Agency:	Unfunded
IRB Review Type:	Expedited (6) (7)

Dear Mr. Bonnaire:

On December 7, 2017, after review of your initial application received on June 1, 2017 and your response to subsequent modification requests, the IRB has approved the above-referenced protocol in accordance with 45 CFR 46.111. Approval for this study is effective from December 7, 2017 to December 6, 2018.

In accordance with 45 CFR 46.404 and 46 CFR 46.408, the IRB determined that the research did not involve greater than minimal risk, and that the permission of one parent is sufficient. Consent will be obtained from the parents. Assent will be obtained from minors.

This approval includes a waiver of written informed consent in accordance with 45 CFR 46.117(c)(2).

This approval includes the following:

1. IRB Application - approval to enroll 12 subjects
2. Two Informed Consent Forms – Parent and Adult
3. One Assent Form
4. Three recruitment letters
5. One recruitment flyer
6. Instruments \ Questionnaires: Ten study procedures

This approval is valid for one year, and will expire on ***December 6, 2018.*** Please submit a Continuing Review Application, which is located on our website (http://www.bu.edu/irb/), six weeks prior to the expiration of your study.

As the Principal Investigator, you are responsible for ensuring that studies are conducted in accordance with federal regulations, state laws, and institutional policies.

Please note:

- No subjects may be involved in study procedures prior to the IRB approval date or after the expiration date.
- All unanticipated problems or serious adverse events must be reported to the IRB immediately.
- All protocol modifications must be approved by the IRB prior to implementation unless they are necessary to eliminate immediate hazard to subjects.
- All protocol deviations must be reported to the IRB.
- All recruitment materials and methods must be approved by the IRB prior to use.

If you have any questions, please contact me at 617-358-6117.

Sincerely,

Ed Szkutak
Senior IRB Analyst
Charles River Campus IRB

cc: Professor Patricia Gonzalez-Moreno, PhD

APPENDIX C
TEACHER INFORMATION LETTER

Proposal for a Doctoral Study on Metacognition Applied to Teaching and Learning Expression at the Piano

Date

Dear Teachers,

My name is Serge Bonnaire, and I am a doctoral candidate at the College of Fine Arts in the Music Education Department at Boston University. By means of this letter, I would like to invite you to participate in my doctoral research. The purpose of this study will be to better understand how young beginner pianists are able to develop skills that will allow them to perform more expressively from a metacognitive perspective (understanding of one's own thinking processes). This will be accomplished by investigating how young learners process their thoughts in order to articulate a descriptive vocabulary for musical expression (adding words to feelings that will be translated into actual expressive playing).

Data will be gathered through the following methods: field observations; student interviews; two students' piano teachers questionnaires documenting the development of expressivity in the student's performances; student's annotations in the music score of a piece that they will be learning for this research, as well as personal journal notes documenting students' reflections and thoughts about their progress. Audiovisual data will also be used such as videotaped and audio sessions. Assessment of the quality of recorded piano performances of students will be provided by a panel of three independent adjudicators. All physical interactions with students will take place on a day, time, and location (room) provided by the Universidad Panamericana.

It is my hope that this research will deepen our understanding regarding how young students engage in their leaning processes with regard to their aural perception and mental projection of the music that they hear.

Participating in this study may provide young piano students with an opportunity to benefit from an innovative private piano instruction. At the same time, parents having their children involved in this project may also develop increased awareness regarding the cognitive skills involved in music learning, especially as it relates to how their children are able to translate their felt emotions into physical actions. Finally, it is expected that findings from this study will help to articulate educational recommendations designed to optimize teaching strategies in the field of music education and beyond.

While I will conduct the bulk of the study, your participation will solely be limited to participating in a 1.5-hour initial meeting, and completing two questionnaires about your students and yourself. You will be given two weeks to complete ach questionnaire. Each questionnaire takes about 30 minutes to complete. You can skip any questions you do not want to answer.

Please, feel free to contact me via email or by telephone so that I can address any questions that you may have. I can be reached at: sbonnai@aol.com or at 914-237-1048. Also, on [date] I will hold an interactive meeting in (room/location) during which I will discuss my research project in great details. This will also provide you with an additional opportunity to ask for clarifications if needed.

I thank you, and I look forward to meeting with you soon!

Sincerely,

Serge Bonnaire
DMA Candidate
College of Fine Arts - Music Education Department
Boston University

APPENDIX D
TEACHER INFORMATION AND CONSENT FORM

Dear Teacher,

My name is Serge Bonnaire, and I am a doctoral candidate at the College of Fine Arts in the Music Education Department at Boston University, and I would like to invite you to participate in a research study that I am conducting. The purpose of this study is to better understand how young beginner pianists are able to develop skills that will allow them to perform more expressively. This will be accomplished by investigating how they process their thoughts in order to articulate a descriptive vocabulary for musical expression through a metacognitive approach. It is my hope that this research will deepen our understanding regarding how young learners engage in cognitive processing with regard to their aural perception and mental projection of the music that they hear.

Study participation and early withdrawal

Your participation in this study is entirely voluntary, and you may withdraw at any time during this study at your discretion without any consequence affecting your future relation with the music school or with me. Please read the information below to better understand what is involved in this research. If you are willing and able to participate, please print your name at the bottom of this document and email it back to me. I will return it to you with my name printed on it.

How will information be collected?

Held at this music school, this research study will last three months during which time I will examine the combined effects of Aesthetic and Stylistic Mental Representations and of Aural Modeling in relationship to four elements of expressive musical phraseology, comprising the following: (a) “expressive feeling”; (b) “musical subtleness”; (c) “rhythmic variations”; (d) “melodic phrasing”.

I will conduct the following group sessions with students: one video-recorded 2-hour group meeting via a Skype discussion session and two video-recorded physical group meetings with the students lasting 1-hour each. These sessions will allow me to gather data relevant to the study and to introduce them to the concept of “metacognition” (understanding of one’s own thinking processes) which is at the heart of this study. In addition, during the remaining weeks, students will fill out various surveys and questionnaires, and be allowed to skip any questions they do not want to answer. They Students will have the opportunity to learn a new piano piece based upon a metacognitive approach. They will also be asked to record their performances of this piano piece. Finally, students will be required to keep a diary documenting their progress.

After an initial meeting via a 1.5-hour Skype session during which I will be detailing the purpose of my study, I will ask you, the teacher, to fill out two questionnaires: one before and one after the research has taken place, documenting the progress of your student in terms of improvement of their expressive skills at the piano. Each questionnaire takes about 30 minutes to complete. You will have two weeks to do so for each of the questionnaire. You can skip any questions you do not want to answer.

How will participants' privacy be protected?

The information collected during this study will be treated with strict confidentiality. Participants' names will not be used. They will be identified by a number label instead. All raw data (such as teacher questionnaires, student's diary, and video tapes) will be securely stored at my home and destroyed upon completion of the research. All information obtained during this research will remain strictly confidential and you will not be asked to indicate your name or any personal information that could be used to identify you once this project has been completed. No publication or presentation that is produced from this research will indicate any personal information that would identify you or this music school.

The following people or groups may review the students' study records for purposes such as quality control or safety:

• The Researcher and his dissertation advisor, Dr. González

• The Institutional Review Board at Boston University. The Institutional Review Board is a group of people who review human research studies for safety and protection of people who take part in the studies.

What are the benefits involved in participating in this study?

Participating in this study may provide you and your students with an opportunity to reflect on the cognitive skills involved in music learning and, more specifically, how students can adapt these skills in order to explore creative contextual solutions as they navigate their musical sensibilities and improve their interpretative skills. Likewise, it is expected that this study will help to articulate educational recommendations designed to optimize teaching strategies in the field of music education and beyond.

What are the risks associated with this study?

There are no significant risks involved in this study other than those one would find in everyday life. The main risk of allowing us to use and store your information for research is a potential loss of privacy. I will protect your privacy by replacing identifiable information with a number label. No publication or presentation that is produced from the research will indicate any personal information that would identify you.

For questions please do not hesitate to call me at 914-237-1048, or to contact me directly at sjbon@bu.edu, or Dr. Patricia Gonzalez at pagm@bu.edu. If you have questions about your rights as a human research subject or if you want to speak with someone independent of the research team, you may contact the Boston University IRB directly at 617-358-6115. If you are willing and able to participate, please sign both copies of the Teacher Consent Form, and return one to me in the envelope provided (the other copy is for your personal records). By signing this form, you are indicating that you have been given the possibility to ask questions and that those questions have been answered to your satisfaction.

Statement of Consent

I have read and understood the contents of this form. I have been given an opportunity to ask questions and those questions were answered to my satisfaction. I voluntarily agree to participate in the questionnaires which are part of this research study concerned with the understanding of the metacognitive mechanisms involved in the development of musical expression in young pianists.

____
(Print) Teacher's Name

______________________ ______________
Teacher's Signature Date

I have explained the research to the subject and answered all of his/her questions. I will give a copy of the signed consent form to the subject.

____
Name of Person Obtaining Consent

______________________________________ _____________
Signature of Person Obtaining Consent Date

APPENDIX E
PARENT RECRUITMENT LETTER

Date:

Dear (Parent's Name),

My name is Serge Bonnaire. I am a music teacher and I would like to tell you about a research study that I am doing. Research studies help us learn new things and test new ideas. I am doing this study because it is part of my requirements for my doctoral degree at Boston University.

In this research study, I am interested to learn more about how, as a young piano student, your child is able to develop his/her ability to play with more feeling by taking some time to think about ways to do so. For example, he/she can imagine various images that can represent how the music makes him/her feel and that can shape the way he/she plays.

I would like to invite your child to join this study because he/she is an intermediate level piano student between 12-17 years of age, and may be interested to participate. Your child does not have to be in this study if he/she doesn't want to. Your child can say Yes or No. He or she can say Yes now and change his/her mind later at any time without any consequences concerning your child's future relation with the music school or with me if he/she does not want to be in the study.

This study will last three months and will take about two hours of your child's time weekly. If your child wants to be in this study and, with your permission, I will ask him/her to take part in the following activities: (a) we will have a discussion on the Internet through Skype for about two hours and I will also meet with your child later twice in person for 1 hour each time. I will record these meetings on a video so that I can remember what we discussed; (b) I will also ask him/her to participate in the following research procedures (this means the activities that we will be doing):

Procedure 1: your child will fill out a form in order to explain what "musical expression" means to him/her. It will take about 30 minutes to complete the form. Your child can always skip questions that he/she does not want to answer;

Procedure 2: your child will listen to some music on YouTube. It will take about 45 minutes to do so;

Procedure 3: your child will learn a new short piano piece and record it. It will take about 15 minutes daily for reading and learning, and 5 minutes to record it;

Procedure 4: I will ask your child to fill out a form where he/she will discuss his/her ideas about musical expression in connection to the information that I try to collect for this research. It will take about 30 minutes to complete the form. Your child can always skip questions that he/she does not want to answer;

Procedure 5: I will send to your child a set of information explaining how he/she can think about the way he/she learns and plays music. This will take about 30 minutes to read;

Procedure 6: I will ask your child to write on a notebook his/her comments about his/her practice of the new piano piece he/she is learning for this study. This will take about 15 minutes to complete during each practice;

Procedure 7: I will ask your child to write on a form his/her experiences when he/she was thinking about the idea of "expression" each time he/she practiced at the piano. Your child can always skip questions that he/she does not want to answer. It will take about 30 minutes to complete the form;

Procedure 8: I will ask your child to record again the new piano piece that he/she has been learning. It will take you about 5 minutes to do so.

Learning a new piano piece and recording it may be hard or make your child feel uncomfortable. However, having your child join this study may allow us to learn something that can help him/her and other music students as well as teachers to know more about the way young pianists can become more creative when they play.

I don't plan to tell anyone or share your child's name or other information about your child if he/she joins this study. There is a small chance that other people could find out your child's information. I will do my best to make sure that doesn't happen. All of the information concerning your child from this study will be safely coded and locked on a computer that is protected by a password. Once this study is over, I will make sure to keep your child's information safe.

If you have any questions about this study, you can talk with me. My number is: 914-237-1048. You can also email me at: sbonnai@aol.com. I thank you.

Sincerely,

Serge Bonnaire
DMA Candidate
College of Fine Arts - Music Education Department
Boston University

APPENDIX F
STUDENT RECRUITMENT LETTER

Date:

Hello (Student's Name),

My name is Serge Bonnaire. I am a music teacher and I want to tell you about a research study that I am doing. Research studies help us learn new things and test new ideas. I am doing this study because I am a student at Boston University.

In this research study, I am interested to learn more about how, as a young piano student, you can develop your ability to play with more feeling by taking some time to think about ways to do that. For example, you can imagine various images that can represent how the music makes you feel and that can shape the way you play at the piano.

I would like to invite you to join this study because you are an intermediate level piano student between 12-17 years of age, and you may be interested to participate. You do not have to be in this study if you don't want to. You can say Yes or No. You can say Yes now and change your mind later. All you have to do is tell us you want to stop. No one will be mad if you don't want to take part in the study or if you change your mind about taking part in the study. Your parent or guardian can also decide to have you stop taking part in this study—that is OK, too. Your grades in piano class will not be affected if you decide to participate, not to participate, or to stop participating at any time.

This study will last three months and will take about two hours of your time weekly. If you decide to be in this study, I will ask you to participate in the following activities: (a) we will have a discussion on the Internet using Skype for about two hours and I will also meet with you later twice in person for 1 hour each time. I will record these meetings on a video so that I can remember what we discussed; (b) I will also ask you to participate in the following research procedures (this means the activities that we will be doing):

Procedure 1: you will fill out a form in order to explain what "musical expression" means to you. It will take about 30 minutes of your time to complete the form. You can always skip questions that you do not want to answer;

Procedure 2: you will listen to some music on YouTube. This will take about 45 minutes of your time to do so;

Procedure 3: you will learn a new short piano piece and record it. It will take about 15 minutes daily for reading and learning, and 5 minutes to record it;

Procedure 4: I will ask you to fill out a form where you will discuss your ideas about musical expression in connection to the information that I try to collect for this research.

It will take about 30 minutes of your time to complete the form. You can always skip questions that you do not want to answer;

Procedure 5: I will send you a set of information explaining how you can think about the way you learn and play music. This will take you about 30 minutes to read;

Procedure 6: I will ask you to write on a notebook your comments about your practice of the new piano piece you are learning. This will take about 15 minutes to complete during each practice;

Procedure 7: I will ask you to write on a form your experiences when you were thinking about the idea of "expression" each time you practiced at the piano. You can always skip questions that you do not want to answer. It will take about 30 minutes of your time to complete the form;

Procedure 8: I will ask you to record again the new piano piece that you have been learning. It will take you about 5 minutes to do so.

Learning a new piano piece and recording it may be hard or make you feel uncomfortable. However, your participation in this study may allow us to learn something that can help you and other music students as well as teachers to know more about the way young pianists like you can become more creative when they play.

I don't plan to tell anyone or share your name or other information about you if you join this study. There is a small chance that other people could find out your information. I will do my best to make sure that doesn't happen. All of your information from this study will be safely coded and locked on a computer that is protected by a password. Once this study is over, I will make sure to keep your information safe.

If you have any questions about this study, you can talk with me. My number is: 914-237-1048. You can also email me at: sbonnai@aol.com.

I thank you. Please, let me hear what you think!

Sincerely,

Serge Bonnaire
DMA Candidate
College of Fine Arts - Music Education Department
Boston University

APPENDIX G
PARENT INFORMATION AND CONSENT FORM

What is a Research Study?

I want to tell you about a research study I am doing. Research studies help us to learn new things and test new ideas. People who work on research studies are called researchers. During research studies, the researchers collect a lot of information. They use this information to learn more about a subject. I am doing this study because I would like to learn more about how, as a young piano student, your child is able to develop his/her ability to play with more feeling by taking some time to think about ways to do so. For example, he or she can imagine various images that can represent how the music makes them feel and that can shape the way he or she plays. I am asking your child to join this study because he or she is an intermediate level piano student between 12–17 years of age, and may be interested in participating.

Here are things you should know about this study:

- Your child gets to decide whether he or she wants to be in the study.
- Your child can say No or Yes.
- Whatever your child decides is OK.
- If your child says Yes now, he/she can change his/her mind and say No later.
- No one will be upset if your child says No.
- You or your child can ask us questions at any time.
- We are sending you this form in order to get permission to have your child participate in this study.

What will my child do if he or she is in this research study?

This study will last three months and will take about two hours of your child's time weekly. If you decide to allow your child to participate in this study, I will ask him or her to take part in the following activities: (a) we will have a discussion on the Internet through Skype for about two hours, and I will also meet with your child later twice in person for one hour. I will record these meetings on a video so that I can remember what we discussed, (b) I will also ask him or her to participate in the following research procedures (this means the activities we will be doing):

Procedure 1: Your child will fill out a form in order to explain what musical expression means to him or her. It will take about 30 minutes to complete the form. Your child can always skip questions that he or she does not want to answer.

Procedure 2: Your child will listen to some music on YouTube. It will take about 45 minutes.

Procedure 3: Your child will learn a new short piano piece and record it. It will take about 15 minutes daily for reading and learning, and five minutes to record it.

Procedure 4: I will ask your child to fill out a form where he or she will discuss his/her ideas about musical expression in connection to the information that I try to collect for this research. It will take about 30 minutes to complete the form. Your child can always skip questions that he/she does not want to answer.

Procedure 5: I will send to your child a set of information explaining how he or she can think about the way he/she learns and plays music. This will take about 30 minutes to read.

Procedure 6: I will ask your child to write on a notebook his or her comments about practicing the new piano piece he or she is learning for this study. This will take about 15 minutes to complete during each practice.

Procedure 7: I will ask your child to write on a form his/her experiences when he/she was thinking about the idea of expression each time he/she practiced at the piano. Your child can always skip questions that he/she does not want to answer. It will take about 30 minutes to complete the form.

Procedure 8: I will ask your child to record again the new piano piece that he or she has been learning. It will take you about five minutes to do so.

What else could happen to my child while he/she is in this study?

- Learning a new piano piece might be hard.
- Making a video recording of your child's piano performance for this study might be hard or make your child uncomfortable.

If my child joins this study will it help him/her?

If your child joins this study, we may learn something that can help him/her and other music students as well as teachers to know more about the way young pianists can become more creative when they play.

What will happen to my child's information in this study?

I don't plan to tell anyone or share your child's name or other information about your child if he/she joins this study. There is a small chance that other people could find out your child's information. I will do my best to make sure that doesn't happen. All of the information concerning your child from this study will be safely coded and locked on a computer that is protected by a password. The Institutional Review Board at Boston University, a group of people who review human research studies for safety, will have access to study data. Once this study is over, I will make sure to keep your child's information safe.

Taking part in this research study

Your child does not have to take part in this research study. Your child can say Yes or No. He/she can say Yes now and change his/her mind later at any time. All you have to do is tell me that you want to stop. There will be no consequences concerning your child's future relation with the music school or with me if he/she does not want to be in the study. Your child's grades in piano class will not be affected if he/she decides to participate, not to participate, or to stop participating at any time.

Contacts

If you have any questions about this study, you can talk with me at any time at 914-237-1048, or email me directly at sjbon@bu.edu or Dr. Patricia Gonzalez at pagm@bu.edu. If you have questions about your child's rights as a human research subject or want to speak with someone independent of the research team, you may contact Boston University IRB directly at 617-358-6115.

Statement of Consent

I have read the information in this form including the risks and possible benefits. I have been given the chance to ask questions. My questions have been answered, and I am happy with the answers. I agree to allow my child to participate in the study.

____________________________________ ____________________

(Print) Name of Child Participating Date of Birth

____________________________________ ____________________

(Print) Name of Consenting Parent/Guardian Date

I have explained the research to the Parent/Guardian and answered all of his/her questions. I will give a copy of the Informed Consent Form to the Parent/Guardian with my name printed on it.

_______________________________________ _____________________

(Print) Name of Person Obtaining Consent Date

APPENDIX H
STUDENT INFORMATION AND ASSENT FORM

What is a Research Study?

I want to tell you about a research study I am doing. Research studies help us to learn new things and test new ideas. People who work on research studies are called researchers. During research studies, the researchers collect a lot of information. They use this information to learn more about a subject. I am doing this study because I would like to learn more about how, as a young piano student, you are able to develop your ability to play with more feeling by taking some time to think about ways to do that. For example, you can imagine various images that can represent how the music makes you feel and that can shape the way you play at the piano. I am asking you to join this study because you are an intermediate level piano student between 12–17 years of age, and you may be interested to participate.

A few things you should know about this study:

- You get to decide if you want to be in the study.
- You can say No or Yes.
- Whatever you decide is OK.
- If you say Yes now, you can change your mind and say No later.
- No one will be upset if you say No.
- You can ask us questions at any time.
- I will also get permission from your parent/guardian for you to take part in this study.

What will I do if I am in this research study?

This study will last three months and will take about two hours of your time weekly. If you decide to be in this study, I will ask you to participate in the following activities: (a) we will have a discussion on the Internet using Skype for about two hours. I will record these meetings on a video so that I can remember what we discussed, and (b) I will also ask you to participate in the following research procedures (this means the activities that we will be doing):

Procedure 1: You will fill out a form in order to explain what “musical expression” means to you. It will take about 30 minutes of your time to complete the form. You can always skip questions that you do not want to answer.

Procedure 2: You will listen to some music on YouTube. This will take about 45 minutes.

Procedure 3: You will learn a new short piano piece and record it. It will take about 15 minutes daily for reading and learning, and 5 minutes to record it.

Procedure 4: I will ask you to fill out a form on which you will discuss your ideas about musical expression in connection to the information that I try to collect for this research. It will take about 30 minutes to complete the form. You can always skip questions you do not want to answer.

Procedure 5: I will send you a set of information explaining how you can think about the way you learn and play music. This will take you about 30 minutes to read.

Procedure 6: I will ask you to write in a notebook your comments about your practice of the new piano piece you are learning. This will take about 15 minutes to complete during each practice.

Procedure 7: I will ask you to write on a form your experiences when you were thinking about the idea of expression each time you practiced the piano. You can always skip questions that you do not want to answer. It will take about 30 minutes to complete the form.

Procedure 8: I will ask you to record again the new piano piece you have been learning. It will take you about five minutes to do so.

What else could happen to me while I am in this study?

- Learning a new piano piece might be hard.
- Making a video recording of your piano performance for this study might be hard or make you uncomfortable.

If I join this study will it help me?

If you join this study, we may learn something that can help you and other music students as well as teachers to know about the way young pianists can become more creative when they play.

What will happen to my information in this study?

I do not plan to tell anyone or share your name or other information about you if you join this study. There is a small chance that other people could find out your information. I will do my best to make sure that does not happen. All of your information from this study will be safely coded and locked on a computer that is protected by a password. Once this study is over, I will make sure to keep your information safe.

Taking part in this research study

You do not have to take part in this research study. You can say yes or no. You can say Yes now and change your mind later. Simply tell us you want to stop. No one will be mad if you do not want to take part in the study or if you change your mind about taking part. Your parent or guardian can also decide to have you stop taking part—that is OK, too. Your grades in piano class will not be affected if you decide to participate, not to participate, or to stop participating at any time.

Contacts

If you have any questions about this study, you can talk with me at any time at 914-237-1048, or email me directly at sjbon@bu.edu or Dr. Patricia Gonzalez at pagm@bu.edu.

Statement of Assent

I have read the information in this form including the risks and possible benefits. I have been given the chance to ask questions. My questions have been answered, and I am happy with the answers. I agree to participate in the study.

__________________________________ __________________

(Print) Name of Student Participant Date

I have explained the research to the subject and answered all of his/her questions. I will give a copy of the Assent Form to the subject with my name printed on it.

__________________________________ __________________

(Print) Name of Person Obtaining Assent Date

APPENDIX I
MOZART – ANDANTE CANTABILE
SONATA, K. 330

APPENDIX J
INTRODUCTORY SESSION

Students' Perception of Musical Expression

Date: ___________

Student ID: ______________________

1. How would you describe musical expression? What is meant by that term?

2. What elements do you consider involved when speaking of musical expression?

3. Can you explain how important you think the role of musical expression is during performance?

4. Can you describe any relationships that exist between the way you feel about the music and the way you play it?

5. Do you think that indications of dynamics in the music score are sufficient to allow for an expressive performance? Please explain your views.

6. What other elements or aspects do you think are critical to render an expressive musical performance?

7. What difference do you make between the terms *emotion* and *expression*?

8. Do you think that the awareness of musical styles can help establish a better, more authentic performance? If so, in what ways?

9. Are certain gestures at the piano important in helping you better express yourself? If so, can you comment on these gestures in simple terms?

10. Can you give some examples?

11. Could you suggest an approach that could facilitate your inclusion of expression into your playing?

APPENDIX K
MUSICAL EXCERPTS

Mozart: Piano Concerto No.23 in A Major, K 488, Adagio

https://www.youtube.com/watch?v=mf711o8jAQA

Mozart: *Eine Kleine Nachtmusik*, 1st movement

https://www.youtube.com/watch?v=laQu6Ml9DEY

Mozart: Symphony No. 40, 1st movement

https://www.youtube.com/watch?v=l45DAuXYSIs

Mozart: Clarinet Concerto in A Major, K 622, Adagio

https://www.youtube.com/watch?v=JcIyTiKwDvU

Haydn: Sonata in F major. Hob. XVI 23, 2nd movement, Adagio

https://www.youtube.com/watch?v=co1ILwL607o

Haydn: Sonata in D major, Hob XVI 33, 2nd movement, Adagio

https://www.youtube.com/watch?v=biSP9RCof6A

Mozart: Piano Concerto No. 21 in C major, K. 467, Andante

https://www.youtube.com/watch?v=5Y4Fkxg7WcA

Beethoven: Sixth Symphony, 4th movement

https://www.youtube.com/watch?v=aRwMxCuagYg

Schubert: Impromptu in G flat, Op. 90 No. 3

https://www.youtube.com/watch?v=FxhbAGwEYGQ

After listening to the above excerpts, reflect and write about the following:

1 Do you perceive some common features that could characterize this style of music? Describe them.

2 Does this music follow a particular template in terms of its form (melodic ideas that are redundant or that repeat themselves in specific patterns)?

3 Do you feel that sections of the music are contrasting? Can you describe?

4 Could you try to separate and describe what you really feel when listening to this music(you can refer to a specific excerpt if necessary), its effect on you, and what you feel the music is trying to express (the emotions the music is portraying)?

5 Provide any additional comments about your perception of these musical excerpts.

APPENDIX L
PIANO TEACHER INITIAL QUESTIONNAIRE

Please answer the questions listed below in the space provided.

Date: __________

Student ID: ____________________

1 Provide a brief description of your students' ability to make use of musical expressivity when performing (how, through which means, and how easily is the student able to convey expression of emotions and feelings).

2 Provide an assessment of your student competence in making use of musical expression with regard to the classification below by checking the box that applies:

Expressive feeling	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □
Musical subtleness (use of dynamics in relation to musical phrase structures)	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □
Rhythmic variations	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □
Melodic phrasing (articulating the relationships between musical phrases)	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □

---

3 Describe below how the student is able to use his or her technical abilities in order to translate musical ideas during performance (awareness of specific technical gestures, practice habits focusing both on technique and/or musical expression, etc.)

4 Briefly state your approach to incorporating musical expression into your lessons plans.

APPENDIX M

STUDENTS' QUESTIONNAIRE—DISCUSSION

DISCUSSING MUSICAL EXPRESSIVITY IN RELATION TO THE RESEARCH QUESTIONS AND THE FOUR ELEMENTS OF EXPRESSIVE PHRASEOLOGY

Date: ___________

Student ID: ______________________

1 Describe your understanding of the following terms:

(a) expressive feeling

(b) musical subtleness

(c) rhythmic variations

(d) melodic phrasing

2 Referring to your descriptions above, please try to provide an explanation on how you think these elements of musical performance can function in helping you to translate your musical expressivity**.**

a. Try to briefly describe in simple words the various styles of music that you are aware of (Baroque, Romantic, Impressionist, for example). You can think of the eras when such music was created, as well as what characterizes these works (for example, their forms or the colors used).

b. In what way do you think that such understanding can help shape the performance? Describe.

3 Could you describe the mental projection regarding the images that come to mind after listening to the excerpts (what images, sounds, or even scents come to your mind)?

4 Can you think of ways to reproduce those images (or sounds, or scents) in an actual performance? For example, how to produce on the piano a soft and flowing sound that would evoke the murmur of the wind through the branches of a tree? You might want to think in ways in which specific finger pressures as well as the pedals can be used to achieve this.

5 Choose a piece of music that you have already studied (or are studying) and indicate moments of expression that could be mentally projected in the actual performance (mental representations of images).

Name the piece and the measures (section or sections you are performing in this example).

Piece name: ____

(a) Expressive Feeling

With regard to the overall musical character, underscore the various sections of the music that you think should be contrasted in terms of emotional expression. Indicate how you would convey those emotional responses in relationship to the tempo you chose.

(b) Musical Subtleness

Explain how you can contrast dynamics in order to shade tonally the various sections of the music (underlying moments of repose and climaxes)? Discuss how you can use the dynamics in order to underscore the structure of the sections of the music.

(c) Rhythmic Variations

Explain how you can vary the tempo in order to underscore the structure of the sections of the piece? Discuss how you can vary the tempo in order to add vitality and liveliness to the music through the use of such rhythmic devices as emphasis on accents, patterns, and overall rhythmic inflection of the phrases (*accelerando, ritardando, rubato*).

(d) Melodic Phrasing

Please explain how you can translate expressively the inflection of musical ideas through the use of creative phrasing (legato, staccato, etc.) that reflects the sections in relation to the overall aspect of the music? In what way can you use some mental representations in order to better articulate or contrast the relationships among the melodic phrases of the music.

APPENDIX N
STUDENTS' GUIDELINES

Guidelines to Approaching the Concept of Metacognition through the Use of Mental Representations and Aural Modeling in Relation to the Four Elements of Expressive Musical Phraseology

Expressive Feeling

Let us explore ways in which we can convey our emotions by contrasting the various sections in relation to the overall musical character of the piece.

As a pianist, what can you do physically to create contrast in the music you play (key pressure, combined use of the pedals, and so on)? What can you do mentally to achieve a similar result that will be translated into a physical action (mental imagery and projection of those images)?

What about the tempo that you have chosen; can it be varied as well among the sections to create a contrast that would help you to express or project your feelings in terms of the "story" you think the music evokes to you? Can you share your ideas on this?

Can you describe how you would perform a passage if you wanted to convey a sense of joy or anger? In both cases you try to adjust your playing in order to serve your purpose. Can you put words to your actions? For example, use the word *happy* because the music seems calm and smooth; or use the word *gloomy* because the music uses sounds in the lower register that sound somewhat scary.

If you remember the musical excerpts you heard from the list I gave you, do you think that the excerpts depict various moods? Thinking first about the images created in your mind by those moods, try to attach words to make it easier to recall them. Afterwards it may become easier to adjust the way in which you play—modifying your approach to playing—to convey your emotions into sounds.

●

Musical Subtleness, defined as the use of dynamics in relation to musical phrase structures.

Can you think of ways in which we can shade tonally the various sections of the music? In other words, we can look for specific qualities in the production of the musical tones in order to achieve contrasts in the intended dynamics. Try to remember the music you heard from the list and see how the musicians managed to create contrasting dynamics to convey not only the meaning of the pieces according to their understanding, but also how they used dynamic variety as a device to highlight phrases structures in the music.

Think of images that can help you remember the types of tone color you want to create, and try to project those into words or set of words. These words can become a vocabulary for recalling the tone production that you seek.

Rhythmic Variations

In terms of the rhythm of the piece as considered through the general tempo, can you describe how that element [the rhythm] can be a means to help you convey your ideas of the music? What can you do to the tempo that can impact the rhythm through its sections or through its tonal progression, for example, accenting the tempo—slow or fast—at the end of a phrase?

Find some sections that are a good place to vary the tempo in order to create the desired contrast. Try to relate that portion to the idea that this is the story that you created. Imagine that this section of the story can be labeled by a word that will help you recall how you want it to be put into sound the next time you play this passage.

Think of such rhythmic devices as:

- emphasis on accents at the end of a phrase or sub-phrase;
- patterns that can be contrasted especially when they repeat;
- overall rhythmic inflection of the phrases (*accelerando, ritardando, rubato*).

Always find ways to recall anything that you do for later use. That is why you will find useful the idea of imagining, mental imagery/projection, images that can describe a specific mood suggested by the music. Put a word that represents the [mood, image?] which will guide the way as you are able to project your expressive emotions.

●

Melodic Phrasing, defined as the articulation of the relationships between musical phrases.

Can you create a simple diagram that delineates the melodic phrases of the sections, for example, [?] using slurs on the score? Now can you determine the relation between the phrases? For instance, a phrase can be repeated; a phrase can be an introduction to a more elaborate one; or a phrase can be the melodic inversion of its preceding phrase. This is frequently found in Bach's music, such as in the first Two-Part Invention in C, BWV 772

Can you think of ways that can help highlight the phrases you have outlined? For instance, we can use contrasting tempo but also tone color to achieve this. What else can we do? Always try to associate some mental projections of images that you think characterize the mood and qualities of the section, in that case the melodic phrase, that you play. In the same way, remembering the recorded music from the list you listened to previously. Try to find some inspired method to project the melodic phrases in the way Baroque music is meant to sound. Finally, create a vocabulary that you can use for recall when playing the piece in the future. In order to get creative with the melodic phrasing of the various sections, can you incorporate such devices as *legato* or *staccato* to reflect the sections in relation to the overall aspect of the music that will also help you to translate expressively your musical ideas?

APPENDIX O
STUDENTS' DIARY ORGANIZER

Dear student, the following is a set of recommendations intended to help in the process of documenting and detailing your experiences during your practice. Feel free to expand these suggestions by adding any other ideas you consider relevant.

a. Make sure to describe the circumstance for your entry, such as practicing the Scarlatti Sonata, K. 239; practicing other pieces.

b. Discuss briefly your practice habits and your ways of learning new material; how you approach musical expressivity during practice; how you relate technique and expression; and how do you use technical means to translate and display expression.

c. With regard to mental representations, how do you correlate mental images suggested by the music you are learning or have heard (i.e., on a CD) and actual performance based upon those representations? Do you, for instance, associate colors with sound?

d. Is it easy to identify salient expressive aspects (passages) in your jury pieces? At first try, is it easy to determine expressive aspects (passages) in the Scarlatti sonata, K. 239? How do you identify these moments? Do you look for relationships among the various phrases, for instance? How do you achieve musical expression when you learn and perform a piece?

e. How useful is listening to the CDs (aural modeling) in helping you to shape your performance expressively with regard to the Scarlatti Sonata, K. 239?

f. With regard to the following categories, how do you practice for musical expression: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing? Try to be specific in each category: for instance, do you slow down at the end of a phrase in order to indicate the inflexion of a musical idea? Do you contrast dynamics (perhaps exaggerating a bit)?

g. As you are focusing on the above four categories, do you feel that you are developing an awareness in those areas and that your ability to convey meaning to the music is improving?

h. Describe any other aspect you feel might be relevant to your use of metacognition with regard to how you practice and how you are able to develop a language (idiom) that helps you in expressing yourself musically. For instance, contemplate the idea that creating a language can help you to mentally store or retrieve certain musical elements for later use in your performance.

APPENDIX P
STUDENTS' INDIVIDUAL ASSESSMENT

Evaluation of students' use of musical expression in the *Andante Cantabile* from

Mozart's Sonata, K. 330

Date: __________

Student ID: ___________________

1. How much time have you been able to dedicate to studying this piece weekly?

2. Are you following a particular way to practice this piece? Please describe.

3. What mental features are you using (mental imagery projections, recall of the audio CDs, etc.)? How helpful in your practice was the listening of the CDs? Please describe.

4. Please highlight what you consider are the expressive sections of the music.

5. Describe how you are able to indicate those expressive aspects of the music in the way you practice this piece and in the way you perform it.

6. Explain how you would achieve an expressive performance of this piece with regard to the following elements of expressive musical phraseology: (a) expressive feeling, (b) musical subtleness, (c) rhythmic variations, and (d) melodic phrasing.

7. Do you consider that there are aspects of your performance that could still be improved from a musical expression viewpoint? If so, please describe.

8. Please feel free to add any additional comments that you consider relevant to this study.

APPENDIX Q
ADJUDICATORS' ASSESSMENT OF EXPRESSIVE MUSICAL PHRASEOLOGY

Please rate the performance that you have just heard by checking the appropriate box below.

Student Recording ID Number: _____

Expressive Feeling: (a) How convincing was the student in conveying his/her emotions by contrasting the various sections in relation to the overall musical character of the music?

Excellent □ Good □ Average □ Fair □ Poor □

(b) How convincing was the student in conveying his/her emotions in relation to the overall tempo chosen?

Excellent □ Good □ Average □ Fair □ Poor □

(Musical subtleness is described as the use of dynamics in relation to musical phrase structures)

Musical Subtleness: (a) How convincing was the student in contrasting dynamics in order to shade tonally the various sections of the music (underlying moments of repose and climaxes)?

Excellent □ Good □ Average □ Fair □ Poor □

(b) How convincing was the student in using the dynamics in order to underscore the structure of the various sections of the music?

Excellent □ Good □ Average □ Fair □ Poor □

Rhythmic Variations: (a) How convincing was the student in varying the tempo in order to underscore the structure of the sections of the piece?

Excellent □ Good □ Average □ Fair □ Poor □

(b) How convincing was the student in varying the tempo in order to add vitality and liveliness to the music through the use of such rhythmic devices as emphasis on accents, patterns, and overall rhythmic inflection of the phrases (*accelerando, ritardando, rubato*)?

Excellent □ Good □ Average □ Fair □ Poor □

(Melodic phrasing is described as the articulation of the relationships between musical phrases.)

Melodic Phrasing: (a) How convincing was the student in translating expressively the inflection of musical ideas through the use of creative phrasing (legato, staccato, etc.) that reflect the sections in relation to the overall aspect of the music?

Excellent □ Good □ Average □ Fair □ Poor □

(b) How consistent was the student in articulating/contrasting the relationships between the melodic phrases of the music.

Excellent □ Good □ Average □ Fair □ Poor □

General use of Expressive Means: (a) How convincing was the student in demonstrating his/her understanding of the use of expressive means as a corollary to the technical demands of the piece?

Excellent □ Good □ Average □ Fair □ Poor □

(b) How persuasive was the student in demonstrating unique musical qualities of expression in his/her performance of the music?

Excellent □ Good □ Average □ Fair □ Poor □

APPENDIX R
PIANO TEACHERS' QUESTIONNAIRE FOLLOWING METACOGNITIVE INITIATION

Please answer the questions listed below in the space provided.

Date: __________

Student ID: ________

1 Provide a detailed description of your student's ability to make use of musical expressivity when performing (how, through which means, and how easily is the student able to convey expression of emotions and feelings).

2 - Provide an assessment of your student's competence in making use of musical expression with regard to the classification below by checking the box that applies:

Expressive feeling	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □
Musical subtleness (use of dynamics in relation to musical phrase structures)	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □
Rhythmic variations	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □
Melodic phrasing (articulating the relationships between musical phrases)	**Excellent** □	**Good** □	**Average** □	**Fair** □	**Poor** □

---

3 - Describe below how the student is able to use his technical abilities in order to translate his or her musical ideas during performance (awareness of specific technical gestures, practice habits focusing both on technique and/or musical expression, etc.). What improvements have you noticed since your student was first introduced to the use metacognition in with regard to musical expression? Please describe.

4 - Following your student's introduction to metacognition with regards to musical expression, are there any particular features of musical expressivity that the student now exhibits during performance not displayed in earlier stages? Please describe.

APPENDIX S

TEACHING MODULES USED DURING STUDENTS GROUP SESSION II

Module A

As part of the discussion, students were asked, for instance, to exchange thoughts about the construct of “expressive feeling” and to describe how this concept could be linked to the concept of “musical subtleness.” Using the answers from the students, the researcher helped them to describe how such concept could be used to create a musical vocabulary that could help them recall specific feelings that, in turn, would be used during the interpretation of a piece. Students write and share their comments and begin to create a list of words that would illustrate a specific “mood.” Some of the semantics included synonyms, expressive connotations of words dependent on specific meanings, the interrelationships between signifiers, and the nuances that they carry that reflect the state of constant interpretative flux during musical performance.

Module B

During this module, the researcher made the following introductory statement:

> It is my opinion that the art of music making should be approached in an experiential way rather than as an end in itself. In other words, music making should be approached as an ongoing process. What I mean by this is that, rather than viewing a music lesson as a means to one day be able to play perfectly, the lesson should be seen as an ongoing interactive practice not only with the

> audience or the teacher or even the composer whose music we are playing but, most importantly, with oneself. Mastering the art of expressing one's own vision of the musical message requires patience, discipline, and proper technique.
>
> Week after week, the musical message appears with more clarity and the communication of that message is honed in weekly lessons as a process of constant becoming, of unending transformation rather than in the spirit of seeking instant gratification. This process of becoming is the constant skill of crafting a message to the audience in a meaningful way that results from a deep partnership between one's inner understanding of how to best organize one's cognitive thoughts and the ability to share those experiences as they have been lived in the mental journey.
>
> I would like to invite you—through this journey of exploration of our inner abilities—to discover new paths that will help us not only in becoming better technicians at the piano but, most important, at being able to convey our own musical visions as we experience them in our performances. This is the realm of musical expression. There are several aspects to this idea, and we will review and reflect on those aspects I consider of paramount importance for our musical growth.

Following this introduction, two aspects of piano performance were presented and discussed from a metacognitive viewpoint. These aspects were the mechanics of sound at the piano without the pedals and the imagined sound. The researcher then led the following discussion in order to create a synergy that would stimulate students' metacognitive processing of new information:

> In this first phase, we will explore various ways to create sounds at the piano. First, we will try to understand how to use our hand muscles in combination with the way in which we carry the weight of our arms and fingers when we press the keys of the piano. Second, we will explore different ways of attacking the keys (different types of key strokes) in order to create specific sounds.
>
> Remember that in order to play expressively, not only do you have to create mentally the sounds that you want to produce but, equally as importantly, you must also know how to physically draw those sounds from the keyboard. This aspect is purely mechanical, but it must be mastered first, since without proper technical skills, even basic ones, your imagined sounds cannot become tangible. Because sound is at the center of our discussion and reflection, let us discuss the physical characteristics of the piano mechanism that are responsible for translating tangibly our musical intentions.
>
> As you have noticed, the piano uses a very primitive concept to create sounds: the keys are connected to a set of hammers that strike the strings. Of course, this mechanism is extremely sophisticated, but the idea of hitting a string with a hammer is a basic one. In fact, it is so basic that, unfortunately, when we press the keys and the hammers have been sent to strike the strings, we can do nothing to change the quality of the sound produced.

This explains why we have to know two things: first, we must know what to expect from the piano in terms of its mechanism in order to use it to our advantage and, second, we must already have an idea in our mind of the sound we want to create so that we use the proper technique in terms of motion of the arms and fingers (and fingerings), as well as proper finger pressure, in order for the instrument to produce it.

As you can see after I strike the keys, the sound diminishes and decays completely. Depending on how I strike the keys, I obtain a certain sound quality, but I cannot do anything to change that quality once it has been produced.
Now observe the following: I can play a *forte* sound without sounding harsh. The way to do this is to place your fingers already on top of the keys without leaving any distance between the tip of your fingers and the keys themselves. This ensures that your physical energy transfers directly from your arms and fingers throughout the keys in a way that is in direct contact with the mechanism of the piano. Conversely, if you leave a distance between your fingers and the keys, you will produce a sound that is harsh and not melodious.

The same applies also for the production of *piano* sounds that you want to draw from the instrument. By being constantly in close contact with the keys you can better control the amount of pressure that you need to apply in order to produce a range of *piano* to *pianississimo* sounds and beyond.

Let's explore the question of *staccato* sounds. The term means "detached" and is the opposite of *legato*, itself meaning “linked.” There are different types of *staccato*, and they can be used in a variety of dynamics. A common mistake is to play staccato in a percussive manner. This can be avoided easily with a slight upwards motion of your wrist. In piano playing, percussiveness can be used provided that it is controlled during production and that you do not give a sense of "banging" or “hammering” the keys that results in an unpleasant sound.

There exists another kind of *staccato* called *portato*, in which you carry the weight of your hand for each note played. In this manner, the note sounds detached but with a certain weight added to it, giving it a specific tone quality. So, in light of what we discussed above, try to experiment with various ways to "attack" the keys in order to get different sound responses from the instrument. This exercise is of paramount importance for the successive steps of our experiment since you will need to be in control of the technical requisites of sound production in order to translate at the piano the sounds you hear in your mind.

In this second phase, let us explore the idea of imagining the sound we would like to create, in order to make sense of real sounds and render performances personally meaningful. Here is an example of this concept: at the piano, play a single note (any key you choose) and listen to what kind of sound is being produced. It could be kind of sound, such as soft, loud, long, or short. Now, try to supplement internally (in your mind) a specific intonation to the sound that you want to produce—you might, for example, want the sound to be soft or to have more depth. Can you hear in your mind that specific sound? Does it ring into you ears? Can you “sing” that sound in your mind? Try now to reproduce it on the same key that you played before. This means that in order to recreate this new sound, you will have to adjust the way in which you press the key. Try to hear if the result is close to the sound you have imagined. If not, try again until you manage to get a sound closer to the one that you have been imagining.

Once you have succeeded in doing this, challenge yourself again. Try to imagine another sound and, using the same process, try to recreate that sound on the piano. You may not succeed the first time, but keep trying until you are satisfied with the result. Keep doing this exercise with different imagined sounds (about ten different sounds). You will notice that after a few times, your actual results will be very close to your imagined sound with fewer repetitions and re-trials. You just have triggered your ability to hear internally a “supplemental sound” before actually playing it on the piano. In the same fashion, you need to become aware of the physical adjustments necessary to be able to recreate this sound (key pressure) on the keyboard.

Always keep this concept in mind because, in order to become a good pianist, you must know what to expect from the instrument and how to make the piano *do* what you want. In other words, you must already know the type of sound you want to draw from the piano. That is your responsibility; the piano is not capable of helping you with this. But if you can imagine the way you think a sound should be heard (or a musical phrase for that matter, as we will see later), then you will likely be able to achieve that goal almost as if by magic, just by imagining the intonation of the sound that you want to recreate.

Here are bullet points of what we just discussed:

• You do not touch the keys before you are already imagining the sound that you want to produce; in other words, that sound must be imagined and must already reside in your mind before you tangibly make it appears at the piano (recreating the imagined sound).

• You must hear internally the sound that you want to create before you actually produce it. Use "internal singing" in order to discover how to phrase the passage that you are about to play.

•Associate your movements with a musical idea.

•Your imagination guides your sound production.

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