

INTEGRAL MUSIC PERFORMANCE AND PEDAGOGY

A Post-Secondary Performance and Education Model

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This article presents a curricular model that integrates the behavioral, music theory/aural skills, stylistic/historical, and individual psychology aspects of music performance and pedagogy. It applies to all music genres and cultures.

ABSTRACT Integral music performance and pedagogy equalizes the four quadrants of the AQAL model through developmental stages. Accidental or deliberate segmentations result in the split of expressive-artistic and technical-scientific skills, leading to uninspired and faulty performances. An Integral Music Performance, Educational, and Assessment model (IPEA), specifically developed for American post-secondary educational institutions, can bridge this divide by using upward causation (science) and downward causation (art) while tracing a performer's development (quadrant-holon developmental spiral) in relation to a community of practice. This all-quadrant, multilevel model represents a major shift in music performance and pedagogy by addressing the developmental needs of students and performers without corroding their expressive or technical strengths.

KEY WORDS: community of practice; integral theory; music; performance; trumpet

In today's world of swift technological advances, there is a divide between the expressive and technical sides of Western music. Leading to this divide has been the entrustment of musical reproduction and dissemination to electronic devices—such as mp3 players and wireless streaming—instead of live music performances. As a result, the “musical experience” of most contemporary listeners has consisted of post-production performances that are highly edited or sampled. Consequently, the unrealistic rise in performance expectations from those listeners—wanting to hear note-perfect performances that replicate their purchased recordings—has replaced the at times flawed, but most often interactive, storytelling nature of expressive live performances.¹

Hurried to meet those high performance expectations, many performing musicians shut off their expressive skills and concentrate on their technique to put out note-perfect but bland live performances (Rich & Yagmour, 2005). These bland live performances display a high degree of introversion in an art-form geared towards extroversion, signaling, perhaps, the emergence of an unfortunate state of polarization between the expressive and technical skills in music performance—prevalent in many performance and academic institutions of today.

This state of polarization threatens the performer-to-audience, interactive communication that transpires during live performances. Expressive live music performances are the result of the integration of a player's expressive and technical skills in accordance with an established musical culture. Whereas technical playing suffices to render a clean and clear performance, it is the beauty enacted and the emotions portrayed in expressive live performances that often take our breath away.

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In this article, I propose and open for discussion an integral approach to Western music's performance and pedagogy by uniting their two inherent skills, the expressive and the technical, in relation to a specific group, or culture, that will be called a community of practice.^{2,3} This Integral Performance, Educational, and Assessment model (IPEA) will serve as a foundation, or starting point, to an integral music performance and academic curriculum at the post-secondary level.⁴ The IPEA will strive to teach musicians to play expressively—in accordance with a primary community of practice—through highly developed technical skills.⁵ Although the IPEA model could be used in many post-secondary music institutions, it should be noted that in this article the system theories used will be limited in scope and will be most applicable to post-secondary educational institutions in the United States and the various music genres taught in them (e.g., classical, jazz, rock, and some types of ethnic music).

Expressive and Technical Skills in Music Performance

As beginners, most performing musicians try to express their emotions through music following the pre-determined artistic aesthetics of their cultural background. Soon they find that their sound production or rhythmic sequences are not clear or precise enough to give shape to their expression. In other words, they have not brought to balance their technical and expressive skills, leaving their audience unable to appreciate those beginning musicians' artistic efforts.⁶

Expressive and technical skills are acquired by musicians who develop within a community of practice by listening, practicing, and performing music correctly over an extended period of time. These communities of practice are described by educational theorist and practitioner Etienne Wenger as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (2002, p. 4). In a post-secondary music program, these communities of practice are varied—happening in genres from classical to rock—and form at most stages of development. They also share three characteristics:

First, in a post-secondary music program there might be a primary community of practice, such as the classical community of practice, which establishes the pre-determined expressive and technical requirements for full acceptance (or participation) in accordance with a correlative community of practice outside academia (i.e., between professional classical ensembles outside academia and student classical ensembles inside academia). These pre-determined expressive and technical requirements will be used as “rites of passages” (or obstacles) for achieving full participation in all the sub-groups of the primary community of practice (i.e., subgroups such as chamber music communities of practice, orchestral communities of practice, or opera communities of practice). The same would happen between the primary jazz community of practice and its subgroups (i.e., combo jazz, big band jazz, or jazz piano solo).

Second, these post-secondary communities of practice and their sub-groups will not be equal because some will be more complex than others. Nonetheless, integral musicians who choose to participate in them will strive to adapt to the community of practice's pre-determined expressive and technical requirements in order to become full participating members of a larger primary community of practice outside academia (i.e., a professional symphony or jazz orchestra). In other words, they will be encouraged to perform at the highest possible level even when playing in communities of practice formed at lower developmental stages (i.e., a training university orchestra or jazz band).

Finally, the primary community of practice outside academia will impose life conditions⁷ on those integral students in post-secondary music programs. These life conditions include pre-determined requirements of tempo, intonation, and dynamics that appear in both the expressive and the technical skills. In general, these pre-determined life conditions will be shared by the primary community of practice and its sub-groups but will change to a certain degree when moving from one primary community of practice to another (i.e., from a classical to a jazz community of practice). These pre-determined life conditions appear in both the expressive and the technical skills.

The expressive and technical skills should be the “bread and butter,” or the main subject of study, in a post-secondary music program. These skills are described by John Sloboda (1994), Professor of Psychology at Keele University, in his article “What makes a musician?” Technical skills, he wrote, include “motor co-ordination and fluency that allow rapid musical passages to be played evenly without hesitation. They also consist of perceptual skills such as pitch acuity, which allows accurate tuning” (p. 20). He added that performers who are merely accurate would be regarded as fine technicians who might come across as dull and lifeless.

Complete musicians, according to Sloboda, show an added value to those perfect notes by adding a whole range of expression. Those “expressions” are present in music through nuances such as slight changes of tempo, dynamics, pitch, and sound qualities and are necessary to make a master musician (Sloboda, 1995, p. 2). Consequently, complete, or integral, musicians in a post-secondary music program need to master their expressive and technical skills, observing the pre-determined life conditions of their chosen community of practice. To help achieve this goal, an integral performance, educational, and assessment model, one that simultaneously addresses both skills, needs to be developed. I will call this model, depending on its practical use, the IPEA Model, Approach, or Instrument for the remainder of this article.⁸

To look further into the prospect of performing, teaching, and assessing applied music using the IPEA model within a post-secondary music program, I will use a system of holons, quadrants, and the quadrant-holon developmental spiral. These systems will help “unpack” music performance and pedagogy into elements so that students and teachers will clearly appreciate those elements’ symbiotic relationships.⁹ However, to do this, we will first look into the IPEA elements necessary for performing and teaching a musical instrument.

The System of Holons and Musical Instruments

Although any musical instrument will suffice, the trumpet will be taken as an example since it is common to many communities of practice.¹⁰ By using a system of holons, all of the elements that make up a trumpet sound will be discussed.¹¹ This will help establish a solid foundation to the IPEA approach used to playing the trumpet. A *system of holons* is composed of elements called holons, with a *holon* being defined as “that which being whole in one context, is simultaneously part in another.”¹² Everything is composed of holons. For example, the letter “a” is part of the word “father” that itself is part of the phrase “to my father,” and that phrase is part of a sentence, and so on. The same process happens in trumpet playing. The breath is part of the buzzing of the lips and the buzzing of the lips is part of the mouthpiece buzz. The interaction and transcendence of the five IPEA elements—the mental image of sound, breath, buzz, trumpet acoustics, and tongue—from holon to holon is shown in Figure 1.

The five IPEA elements (holons) involved in the production of an open and resonant trumpet sound happen

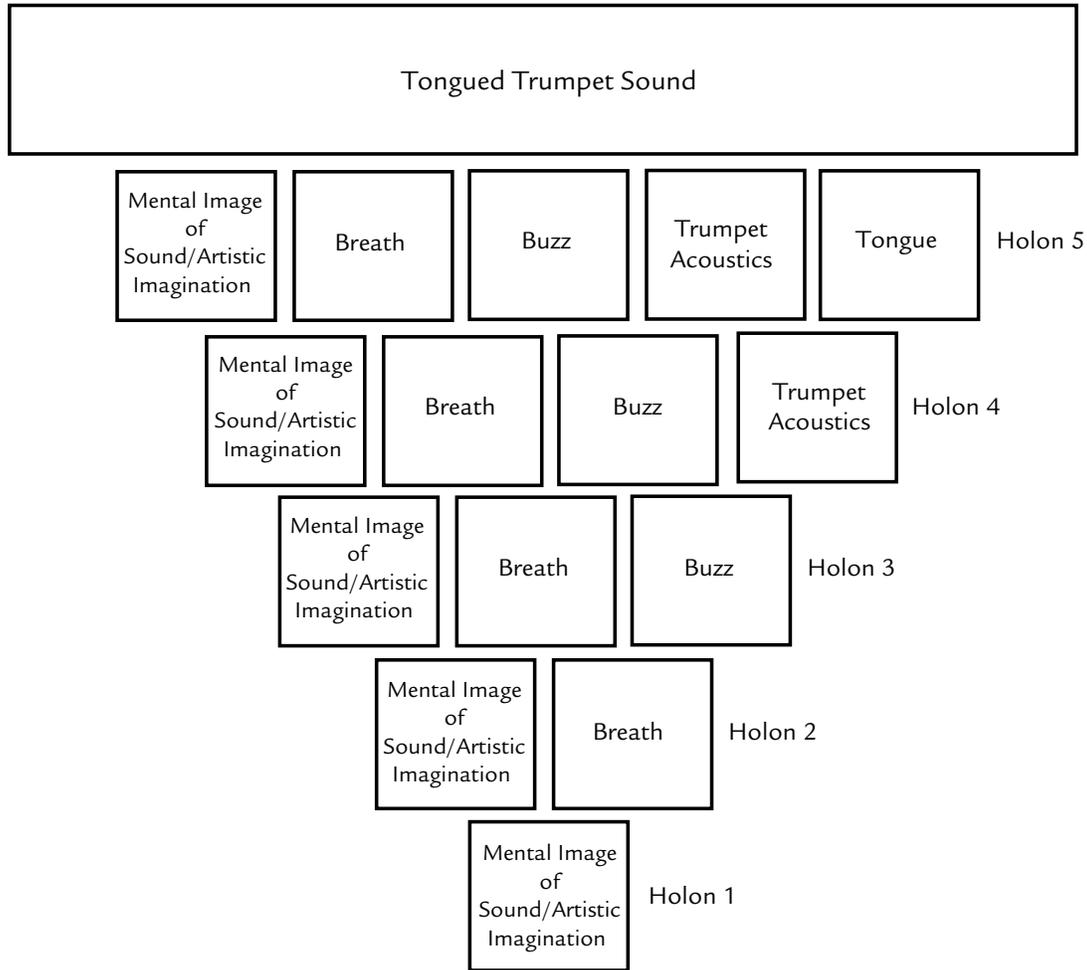


Figure 1. The upside down pyramid as applied to trumpet technique.

simultaneously when the trumpet is played. In turn, it is the quality of the collective IPEA elements that determines the quality of that sound. This process is possible because, as the IPEA elements transcend themselves into new holons, they also keep part of their identity (e.g., the mouthpiece buzz is still a mouthpiece buzz when it is played in the trumpet but it will adapt to the quality, size, and weight of the trumpet). As the IPEA elements complete this process, they also evolve by changing and adapting to that new holon's musical requirements. Those requirements are dictated by the pre-determined expressive and technical requirements of a community of practice.¹³ This adaptation is essential if a player is to perform, teach, and be accepted as a member of that community of practice.¹⁴

Hence, each time a music student enters the realm of a new community of practice (e.g., going from a primary classical to a primary jazz community of practice or moving from one sub-group to another, such as big band jazz to small combo jazz), they will have to, knowingly or unknowingly, alter and adapt their IPEA elements. Therefore, negotiating the simultaneous membership to more than one community of practice can be troublesome to some students as their IPEA elements will need to "re-adjust" in accordance with the aesthetics and acoustical requirements of each new community of practice. This simultaneous membership is especially difficult when the communities of practice belong to contrasting genres (e.g., mariachi and chamber music).

A Community of Practice

Students of a community of practice in music can choose to be in its center of activity (full participation or performance at the highest level) or remain at its peripherals as amateurs. However, in a post-secondary music program, integral students will strive towards full participation by learning performance practices that are similar to those of the established active members of their chosen community of practice (Lea, 2005). Once full participation is achieved, those students will become full members of that community of practice. To accelerate and help negotiate the movement towards full participation, students will summon the help of an integral teacher.¹⁵ This integral teacher will help bridge the gap between the students and their chosen community of practice by engaging in a systematic pedagogical approach designed to overcome obstacles that would keep students in the periphery of their chosen community of practice (Fig. 2) (Lea, 2005).¹⁶

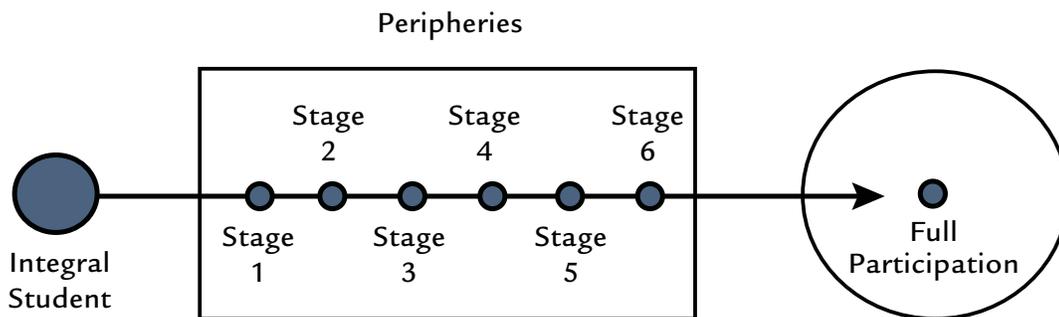


Figure 2. Obstacles towards full participation. These include the idiosyncratic performance of rhythmic and/or intonation elements, from the part of the prospective member/student, which are often perceived as technical and/or expressive deficiencies.

The two “pedagogical tools” used in this systematic pedagogical approach are upward and downward causation. In this article, these terms are synonymous with the science/technique (upward causation) and the study of art/expression (downward causation) as related to music making. In upward causation, integral students practice each IPEA element, one at the time, to increase the possibility of success of the end product.¹⁷ In downward causation, students increase the quality of the end product, by imagining a mental conception or imitating a role model of their desired sound, so the quality of the lower IPEA elements increase. Although these two procedures seem opposites, when we look closer, the two work together to overcome performance deficiencies (obstacles) while addressing two different types of training: the expressive and the technical. These two types of training are essential for achieving integral performances and integral teaching.

Upward causation, as used in technical training, starts with the *stimulus identification* (i.e., the mental image of sound of a specific technical skill the students imagine by using their artistic imagination or by imitating their chosen role model) followed by the *response selection* (the performance of their mental image of sound). In tandem with the appropriate conditioned reflexes to innervate the necessary muscle groups (the *response programming*), the student’s mental image of sound comes to life.¹⁸ I call this series of events the SRR sequence (see Fig. 3).

In addition, integral students receive feedback as they practice each IPEA element—when using upward causation—through three performance loops: an open/close (hybrid) performance loop that will include in-

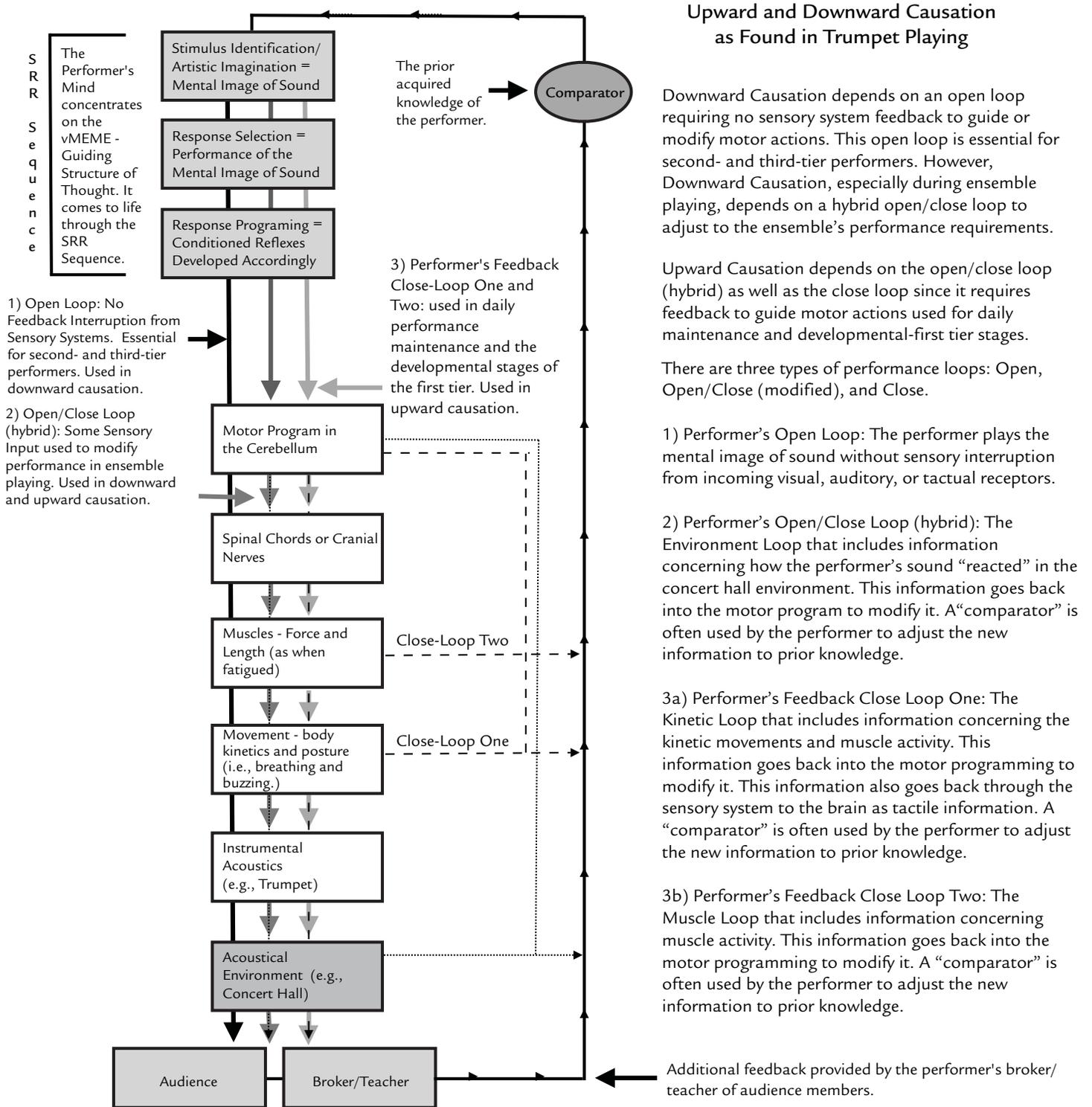


Figure 3. Upward and downward causation.

formation about the student's sound and how it "reacted" to the student's acoustical environment, a close loop that will include information about the student's kinetic movements, and a secondary close loop that will contain information about the student's muscular activity. This information will be compared against the student's acquired knowledge (called the comparator) before it comes back to the student's mind to adjust the SRR sequence for any change in the performance environment (see Fig. 3).¹⁹

An example of upward causation as used during technical training is when an integral student has a deficient IPEA element (e.g., corrupted breathing) that has to be replaced by a new element (e.g., correct breathing). In this case, the student will practice that element with a spirometer (or other similar air-measuring apparatus) while receiving feedback from the close loops. The student will use this feedback to re-adjust the SRR sequence until that element is corrected and becomes a conditioned reflex, or habit.²⁰ As a result of this correction, the end product (tongued trumpet sound) will improve in quality.

Downward causation, as used in expressive training, follows the SRR sequence, but is not interrupted by sensory system input—as when playing unaccompanied music or solos. However, in ensemble playing, downward causation depends on an open/close performance loop hybrid that alternates between the open performance loop and the close performance loop to adjust to the student's changing performance environment (e.g., concert hall acoustics) or other life conditions (e.g., changing tempo, intonation, or dynamics).

An example of expressive training happens when integral students, who already have "good playing holons" solidly established, play their repertoire following the mental images of sound as established by high-level performance examples of their community of practice.²¹ Another example of expressive training happens when students imitate their teacher's high-level demonstration of a piece of music. As a result of the high-level demonstration, and the successful imitation that may follow, the student's playing, as well as their IPEA elements, may increase in quality.

The Role of an Integral Teacher

An integral teacher will know when to use the technical (upward causation), expressive (downward causation), or a combination of the two types of training to correct deficiencies (bypass obstacles) based on the developmental needs of each student.²² To enhance and complete this correction process, the student will engage in complementary actions (performances and concert attendances). They will also derive personal meaning when playing with others in mutual engagement (e.g., in a post-secondary music program, they will play in a music ensemble that strives to emulate the high-level professional ensembles outside academia).

It is from these performances and concert attendances that those integral students derive personal meaning by giving a coherent shape to the reification of their experience (e.g., coherent shapes such as the concepts of a beautiful sound, clean attacks, or wavy vibrato that will be stored in the "comparator") (Fig. 3) (Wenger, 1998, p. 58).²³ Their goal as performers will be to recreate this meaning (i.e., the concept of a beautiful sound) during future performances in accordance with the pre-determined life conditions of their chosen community of practice. As the communities of practice increase in complexity, those coherent forms will also need to be performed with more exactitude (i.e., more in tempo, more in tune, and with more exact dynamics).

The re-creation from personal meaning to physical form (e.g., the performance of a beautiful sound) requires

the use of the integral student’s artistic imagination.²⁴ The use of an artistic imagination also helps students create mental images of sound of indefinite expressive shades and forms, such as the image of a beautiful trumpet sound playing a soft cantinela or a thrilling jazz solo, which will become physical sounds once the students perform the correlative pre-rehearsed actions practiced as part of their performance preparation.²⁵ Since the students’ mental images of sound need to accord with the concepts and practices of their chosen community of practice, those mental images of sound will help to establish and strengthen forms of communication that will serve as sources of coherence for the students’ community of practice (Wenger, 1998).

The reliance on the re-creation of mental images of sound, from the conceptual (mental images of sound) to the physical realms (performances), becomes increasingly important when performing at higher developmental stages—usually represented by more complex communities of practice—because it provides integral students with the necessary artistic cues for achieving high-level performances.²⁶ Therefore, as students develop to higher stages, their ability to create more detailed mental images of sound increases and their dependency on their teacher to provide the appropriate performance cues decreases.²⁷ Unfortunately, some of the practices in contemporary post-secondary music programs are mainly driven by analytical, step-by-step procedures (upward causation) inherent in technical training, leaving the use of an artistic imagination to the side. Nonetheless, if we continue with the exploration of the IPEA model, we will see that working simultaneously with both sides, the technical (empirically based) and the expressive (artistically based), will encourage a vivid artistic imagination capable of yielding expressive performances along with a continuous development of performance skills.

The Quadrants and the IPEA Model

By using the quadrant-holon developmental spiral, we will be able to track an integral student’s movement towards full participation in a community of practice. The spiral will also serve as a developmental map of a single multiple-intelligence, in this case music.²⁸ We will also understand how the five IPEA elements create a unit called a meme, which has four counterparts (or quadrants). Those four memes will house the expressive and the technical skills, as required at any level of complexity in a community of practice, and when united create a quadrant-holon. A *meme* is described as a unit of cultural information, such as the concepts and physical actions exercised in a community of practice, that is transmitted from one mind to another mainly through imitation or verbal instructions.²⁹

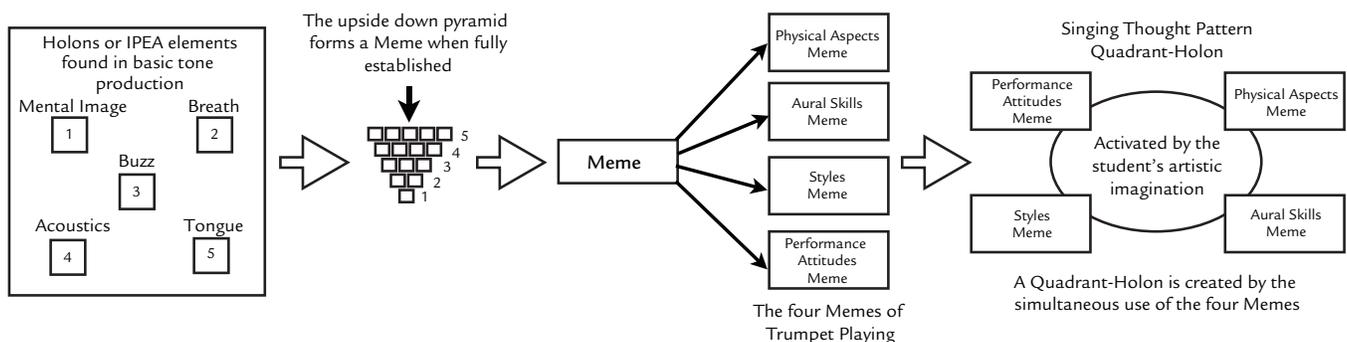


Figure 4. Creating a meme and a quadrant-holon out of the five IPEA elements.

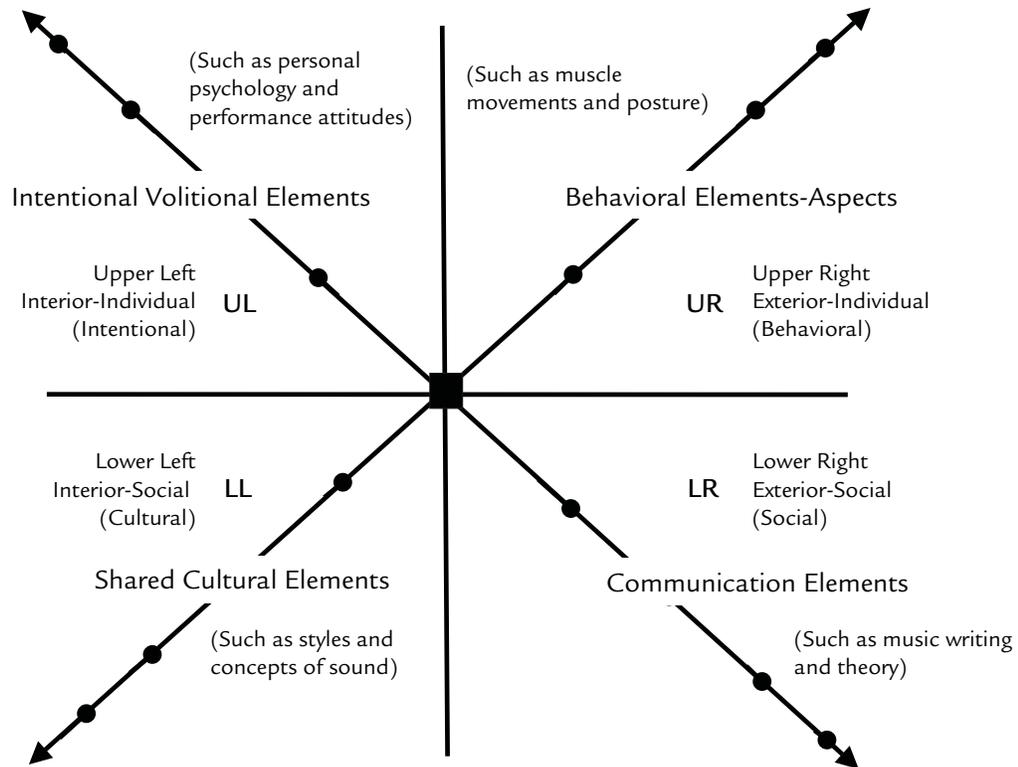


Figure 5. The four quadrants.

A *quadrant-holon* is a larger structure that represents a thought pattern that can be developed, corrected, and assessed through stages of development.³⁰ In trumpet playing, the quadrant-holon is a quintessential unit of thought called the “singing thought pattern”—one that depends on, and effortlessly mirrors, the integral student’s artistic-musical imagination.³¹ This quadrant-holon develops by becoming more detailed and effective through progressively complex stages triggered into development by the life conditions of the student’s chosen community of practice. This quadrant-holon also serves as an attractor to the four memes, binding them into a cohesive structure. In other words, the concept of the “singing thought pattern” used in trumpet playing is a quadrant-holon that is composed of four memes that, in turn, are composed of five IPEA elements that are developed through constant practice.

The four memes that compose the singing thought pattern quadrant-holon are the Physical Aspects Meme (measured empirically); 2) the Aural Skills Meme (measured empirically); 3) the Styles Meme (not measured empirically); and 4) the Performance Attitudes Meme (not measured empirically) (see Fig. 4). Together, they form a system of quadrants as described by Ken Wilber (1995). Wilber’s system of quadrants shows an integrated representation of four distinct quadrants that make up any given phenomenon (Fig. 5).

It is important to understand that each quadrant will represent a different side of each of the IPEA elements (Fig. 6). For example, in the Upper-Right quadrant (UR) (the behavioral quadrant), the first element, the mental image of sound, will include the behavioral (or physical) aspects involved in the acquisition, development, and use of the mental image of sound (e.g., neurological changes in brain development and function as related to music cognition). The Lower-Right quadrant (LR) will represent the aural skills (or communica-

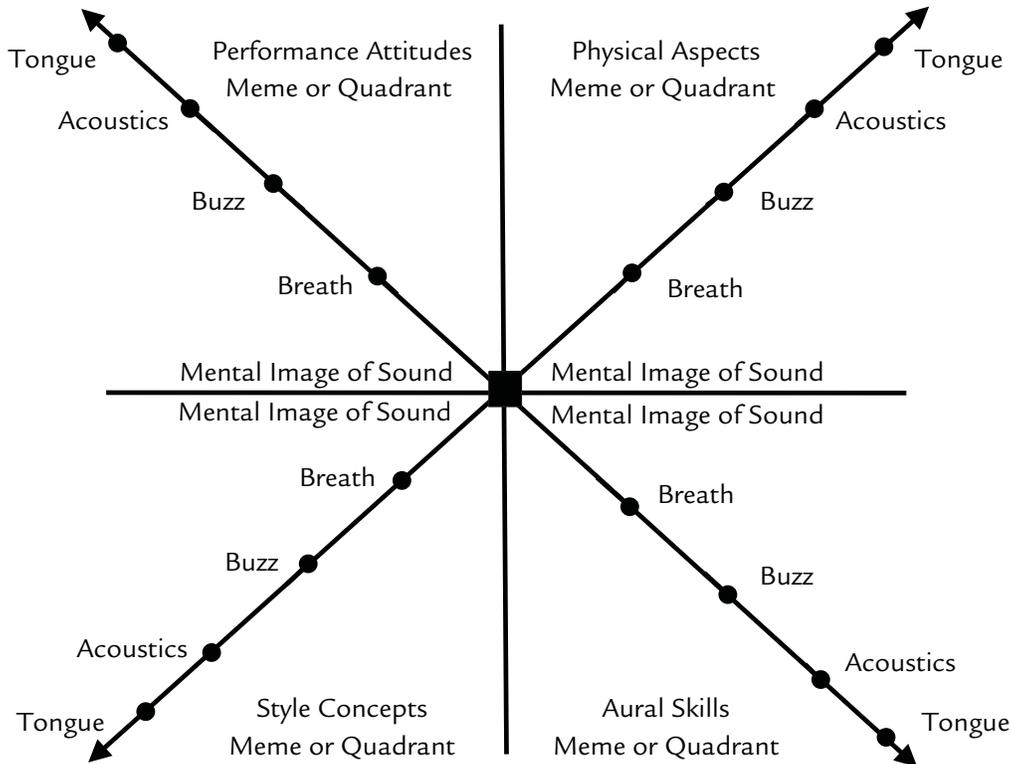


Figure 6. The IPEA version of Wilber's system of quadrants as applied to trumpet technique.

tion elements) found in the acquisition, development, and use of the mental image of sound. The Lower-Left quadrant (LL) (shared cultural aspects) has all of the stylistic aspects involved in the acquisition, development, and use of the mental image of sound. Finally, the Upper-Left quadrant (UL) (the intentional volitional) includes the performance attitude aspects involved in the acquisition, development, and usage of the mental image of sound. Another example of this all-quadrant element representation happens when students improve their intensity of breath (Fig. 7). Notice that working from the UR Quadrant (free breath) onwards follows a course of upward causation (i.e., working one element at a time to improve the end result). On the other hand, working with the UL quadrant (intensity of breath) onwards follows a course of downward causation (i.e., working with the end result to affect all elements). By working in this fashion, exercising the free breath and practicing the intensity of breath, a performer will benefit by mastering the technical and expressive sides of his or her breathing skills.

By examining the four sides of each element, performers will gain a comprehensive (or integral) look at that element. The benefits of this approach include but are not limited to: 1) the diagnosis of problems for that particular element will have a better chance of being corrected; 2) positive, lasting change will be possible in a player's performance since the health and longevity of the IPEA elements depend on the health of each one of their four quadrants; 3) the player will be able to find correlations (or connections) among the IPEA elements to be able to find more efficient ways of developing them; and 4) the assessment of a player's integrated technical and expressive skills will be possible.

Students develop their quadrant-holon in relation to the level of complexity and the life conditions of their current community of practice. For example, in trumpet playing, the style meme (one of the quadrant-holon’s memes) is composed of all the sensory musical experiences students have had while listening to high-level performances of full members of their community of practice and while performing in an ensemble with peers of equal or greater skill. Those experiences are turned, by conscious and subconscious processes, into the style meme.³² This meme is usually influenced by a primary community of practice and its sub-groups, but it is possible for a player to be influenced by various primary communities of practice simultaneously (e.g., classical, rock, and jazz).³³ The other memes—Physical Aspects, Aural Skills, and Performance Attitudes—will follow suit in adapting to new communities of practice. Although there are developmental conflicts in the physical aspects of a meme—such as muscular strength to sustain loud high tones versus muscular endurance to play lighter music for extended periods of time—integral students adapt to those conflicts by allowing ample acclimation time between performance dates. In a post-secondary music program, integral teachers can help their students with the necessary acclimation process.³⁴

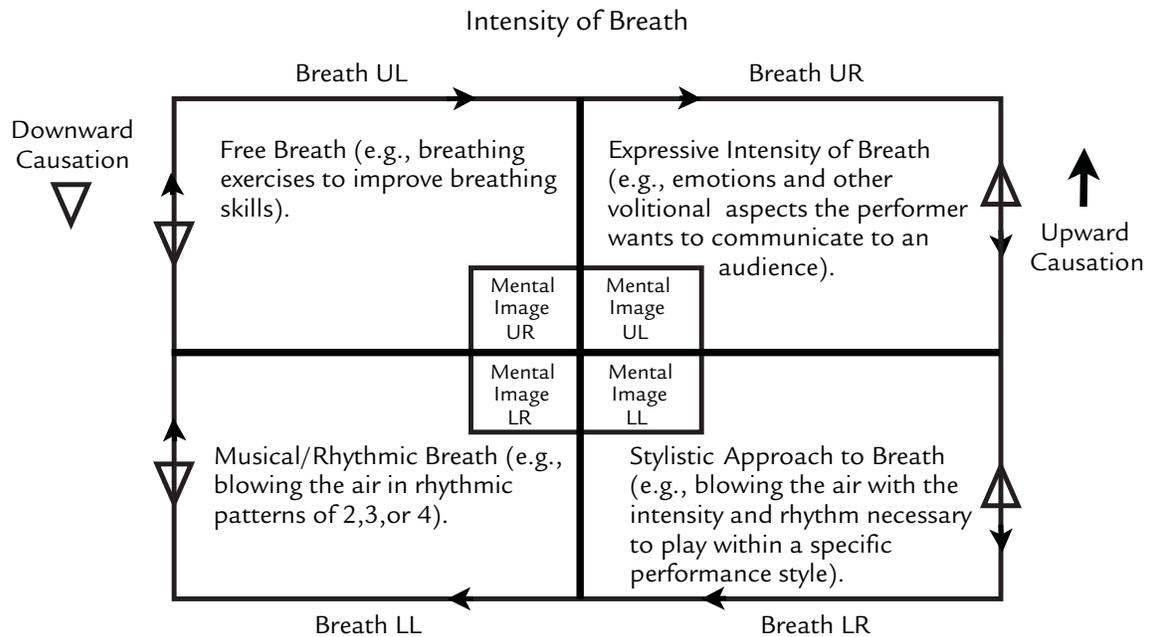


Figure 7. Intensity of breath.

Developing Through Stages

As the four memes develop in their movement towards full participation, they will advance to a new stage of development, bringing more complex expressive and technical skills as well as a fuller rendition of the singing thought pattern quadrant-holon. It is important to understand that the efforts of integral students in practice will be futile if they focus on one or two memes of playing (technical or expressive), knowing that there are deficiencies in the other two or three memes. This oversight might lead to a temporary developmental “plateau.”³⁵ The four memes can also be viewed in a psychograph used to trace the development or regression of individual memes in relation to six distinct stages as found in the quadrant-holon developmental spiral.³⁶ Once fully equalized (stage six), the singing thought pattern quadrant-holon allows for full participation and high-level performances in the chosen community of practice (Fig. 8).

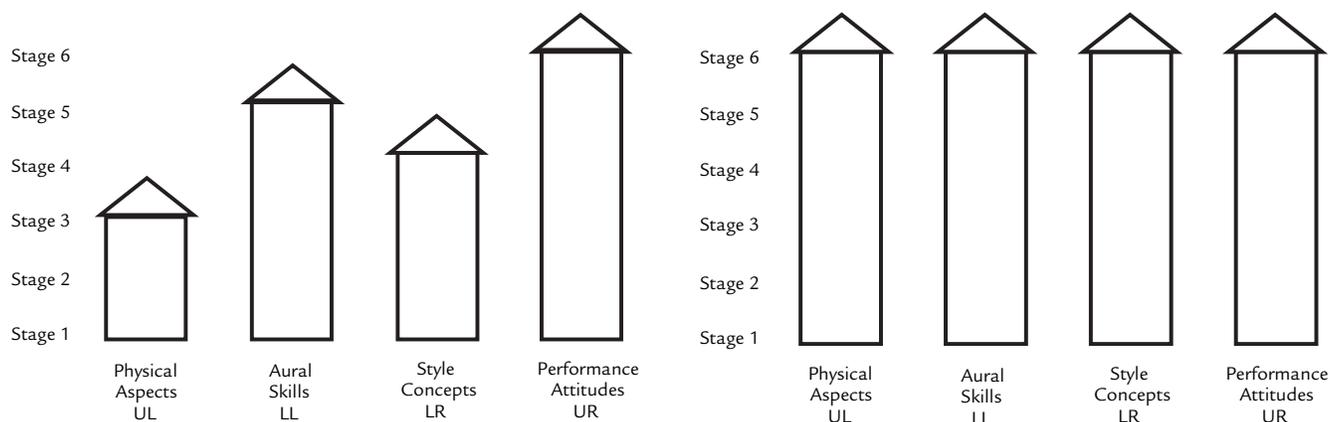


Figure 8. Assessment using the stages of development as found in the first tier. *Left*, Columns of development and the four basic memes not equalized (full participation/high-level performance not achieved). *Right*, Columns of development and the four basic memes equalized (full participation/high-level performance achieved).

It is through the constant integration of the student’s participation and reification of their experiences—from one community of practice to another and from one stage of development to another—that the student’s quadrant-holon will develop. Figure 9 shows how the four memes integrate to form the singing thought pattern quadrant-holon, once the player participates (performs) and reifies that participation.

Therefore, the student’s singing thought pattern quadrant-holon develops over time through private technical practice and through the artistic experiences gained by playing with groups of equal or greater skills than those of the student. According to the quadrant-holon graph, there are six distinct stages in the “first tier” of that development process.³⁷ Stage one represents the unequalized quadrant-holon of a student with skills at a beginning level while stage six represents the same quadrant-holon once it has developed and has been fully equalized at the sixth stage of development (pre-professional level).

At each increasing stage of development, integral students will perform using their singing thought pattern quadrant-holon with a correlated degree of musical expression and technical fluidity in accordance with an increasingly complex set of life conditions imposed onto them by their current community of practice. In other words, in response to the challenges presented by the life conditions—found as their quadrant-holon moves up the spiral—their quadrant-holon will evolve by demonstrating a higher level of growth and complexity. Therefore, at each new level of development, the student will be more physically fit (Physical Aspects Meme), play more in tune and in tempo (Aural Skills Meme), be able to play in a more fitting style (Style Meme), and with more expression of emotions (Performance Attitudes Meme).

Notice that column A (Fig. 10) shows that at the early stages of development, the integral teacher will need to “translate” and help negotiate for the integral student the various expressive and technical requirements of the chosen community of practice. As the student develops to higher stages, the help of the teacher diminishes and the student’s ability to “pick up” the appropriate technical and expressive cues for further development increases (Fig. 10, column B).³⁸

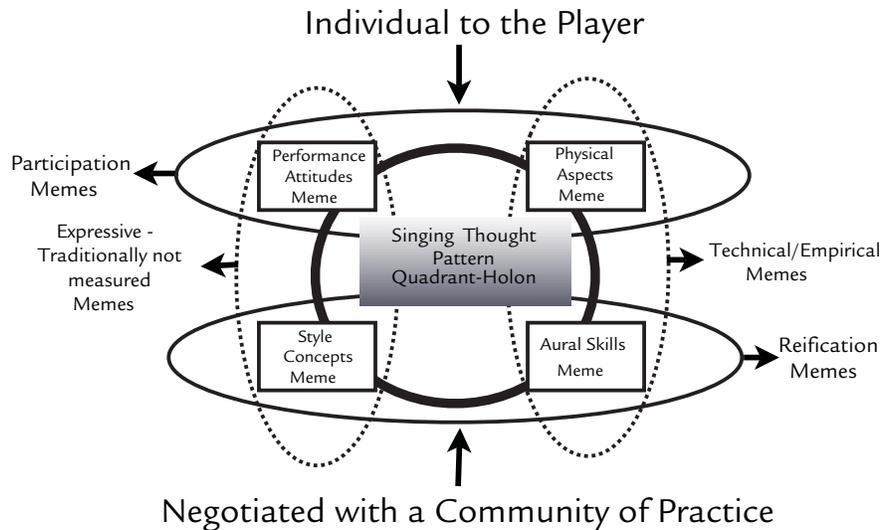


Figure 9. The four memes forming a singing thought pattern quadrant-holon. Meaning results from the players' negotiation of their participation and reification of their experience.

In the second tier of the developmental process, stage seven and eight (not shown in Fig. 10), full participation is achieved and integral players develop further by playing within a community of practice among peers of equal or greater expressive and technical skills.³⁹ Stage seven (professional player), which starts the second developmental tier, represents an integral professional player who plays correctly at a first-class level with other professional players in relation to their chosen community of practice. Stage eight represents “universal players.” These integral players enjoy the membership, in accordance with their particular complexity and distinction, of various high-level communities of practice from around the world. They also reify their experience to create a deeper meaning and a stronger performance of their artistic concepts—usually expressed through their expressive performances. An example of a universal player is Yo-Yo Ma, international solo-cellist.⁴⁰ Although research on second-tier integral musicians is underway, this article focuses on the first developmental tier of students during their undergraduate and graduate work.

Now that we understand how the five IPEA elements of brass playing compose a meme and how four distinct memes create the singing thought pattern quadrant-holon, it is time to look at ways in which a quadrant-holon developmental spiral can be used in performance training, education, and assessment processes.

Using the IPEA Model for Academic and Assessment Purposes

One of the practical uses of “unpacking” music performance by using holons, memes, and quadrant-holons is to target any problem (or deficient holon) in either the technical or expressive sides, which affects an integral student’s development at any stage. This is similar to having a comprehensive pedagogical and developmental map to see where deficiencies are in relation to the other IPEA elements. Used this way, the IPEA model takes the “guess work” out of music performance and pedagogy while accelerating the teaching and learning process, saving students and teachers from unnecessary frustration. However, if the IPEA model is to be used as a pedagogical approach in post-secondary music programs, an assessment instrument will be required in recitals, auditions, or in final examinations (known as juries).⁴¹ To fulfill this requirement, a multidimensional

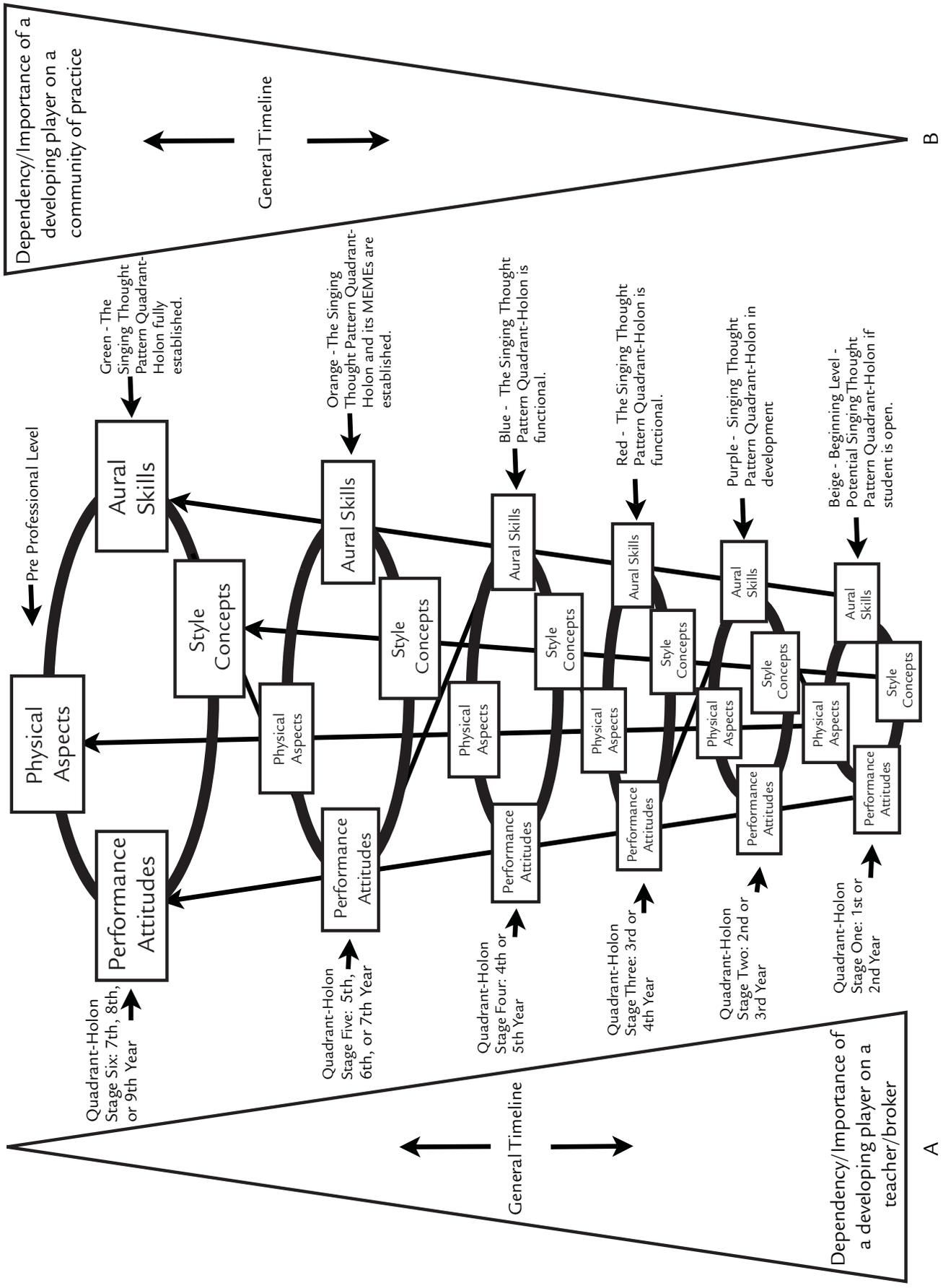
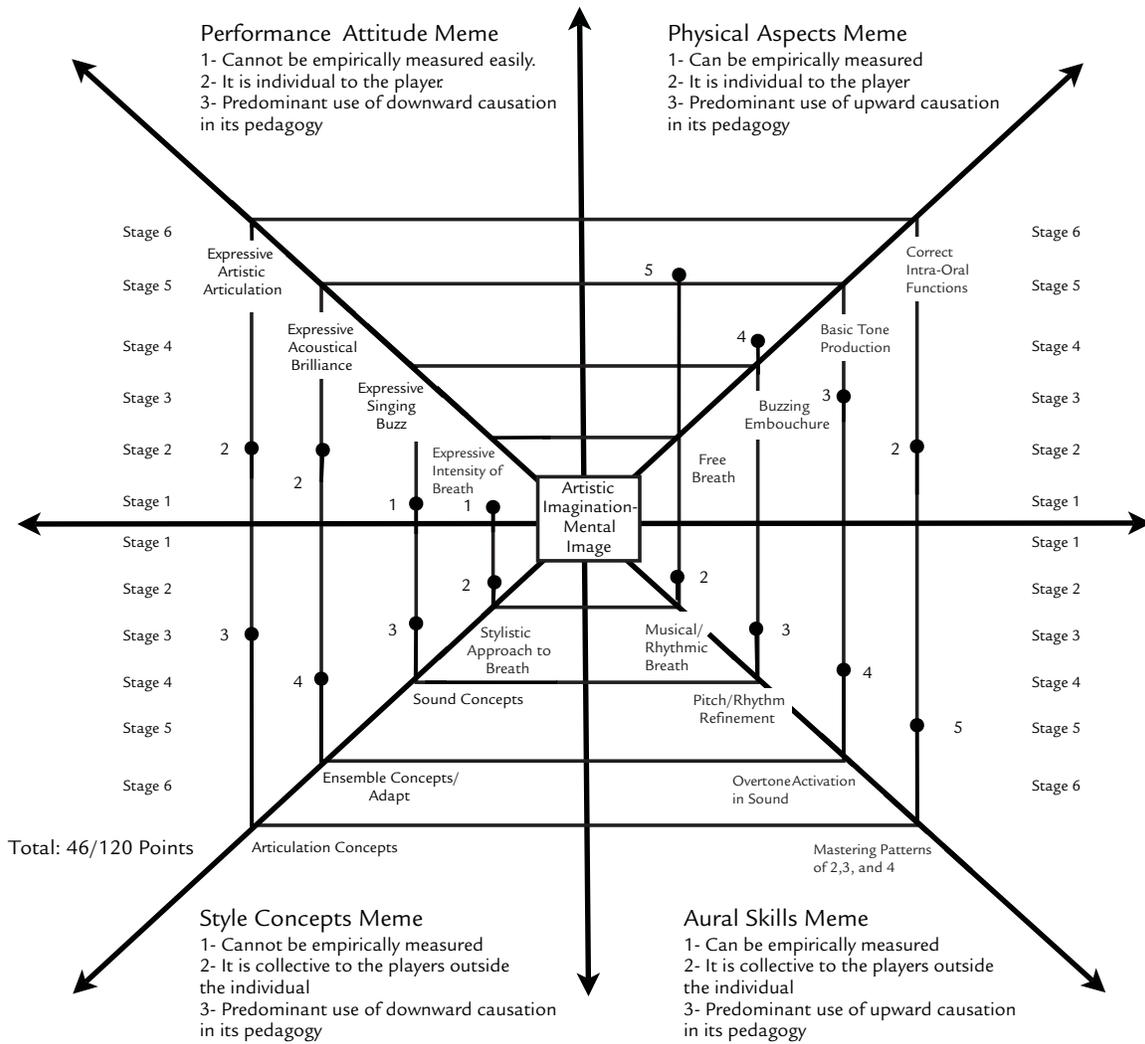


Figure 10. Spiral Dynamics graph of the quadrant-holon developmental spiral.

MUSIC PERFORMANCE AND PEDAGOGY



General Timeline		Audible Differences	
7th, 8th, or 9th Year	Stage 6 (Green)		1- The singing thought pattern quadrant-holon is fully established. 2- Player needs to further develop in a musical culture performing with other musicians. 3- Possible unstable periods.
5th, 6th, or 7th Year	Stage 5 (Orange)		1- The singing thought pattern quadrant-holon and its Memes are established. 2- Aural skills fine tuned using a tuner. 3- Playing problems rectified/study of extremes begins/consistent tone production is consistent. 4- Develops strong playing styles. Ensemble playing is excellent.
4th or 5th Year	Stage 4 (Blue)		1- The singing thought pattern quadrant-holon is functional. 2- Aural Skills Meme is established. Plays in tune. 3- Practices specific techniques to improve playing. 4- Good ensemble skills.
3rd or 4th Year	Stage 3 (Red)		1- The singing thought pattern quadrant-holon is functional. 2- Can hear pitch and sings it back/mostly in tune/misses less notes. 3- Aware of mental and physical problems. 4- Can imitate others/plays with some style/ensemble playing is good.
2nd or 3rd Year	Stage 2 (Purple)		1- Singing thought pattern quadrant-holon in development. 2- Aural Skills Meme is improving. 3- Mind/body connection still has obvious deficiencies. 4- Starts to visualize mental images of sound when asked.
1st or 2nd Year	Stage 1 (Beige)		1- Potential of singing thought pattern quadrant-holon if student is open. 2- Aural Skills Meme is deficient/student plays out of tune. 3- Mind/body connection is weak/plays by kinetic feel/misses often. 4- Sound production is crude.

Figure 11. IPEA assessment graph (Top) and the characteristics and obstacles for each stage (Bottom).

IPEA assessment instrument, created by combining the system of quadrants and the psychograph, can be used. The IPEA assessment instrument is a model that can be reconfigured to fit the specific needs of any post-secondary institution when evaluating the deficiencies (obstacles) of a primary community of practice.⁴² This assessment instrument is also designed with the purpose of assessing a single performance as if it were a “snapshot” of the student’s playing.⁴³

The IPEA assessment instrument is particularly useful in assessing the IPEA elements that need development while identifying their symbiotic relationships among the four memes.⁴⁴ Figure 11 shows a generic case study of a music performance student with several deficient elements. Numbers one through six are used to represent the stages of development in accordance with the expressive and technical skills of a student. In contrast, see Figure 12 for a typical mono-dimensional assessment chart, in current use in post-secondary academic institutions (1 = poor and 5 = excellent).

The IPEA instrument will also be useful for performing musicians outside post-secondary music programs, as a quadrant-holon is an ever-changing and evolving structure of thought that needs to be improved throughout a player’s performing life. Therefore, each integral professional player, student, or teacher will have to continually balance their technical and expressive memes to maintain their “performance health” throughout daily changes such as sickness and injury, changing pre-determined life conditions in music performance, and the aging process.

Conclusion

By using the singing thought pattern quadrant-holon, integral professional players, students, and teachers will perform and teach with expressive and technical fluency while maintaining a consistent developmental track in relation to their chosen community of practice. Integral professional players and students using the IPEA approach will train using upward causation, assisted by empirical instruments such as a metronome and tuner, to perfect their technical skills while rehearsing and performing using downward causation—uniting the expressive and technical skills without compromising either.

	1	2	3	4	5
Technique			X		
Tone			X		
Musicality		X			
Rhythm				X	
Stage Presence		X			
Total Points	14				

Figure 12. A typical mono-dimensional assessment chart.

Integral teachers using the IPEA approach will teach addressing the improvement of each IPEA element while encouraging their students to employ upward or downward causation to overcome deficiencies on their way towards full participation. The exclusive use of upward causation is not recommended, since it tends to yield uninspired performances. Performances can be assessed with the IPEA assessment instrument, giving both the integral teacher and student a clearer view of deficiencies (or strengths) that need improvement before full participation in a community of practice can be achieved. The challenge of using the IPEA approach lies in the lack of knowledge and understanding of integral principles by the general post-secondary teaching population. Most post-secondary applied music teachers are performers by training who do not need the intricate knowledge of the IPEA model or the IPEA approach to perform or to teach advanced students with no major technical problems. Addressing the developmental needs of students with technical problems while maintaining their expressive skills, however, requires knowledge of the IPEA model and the use of the IPEA approach. It is my hope that the information discussed in this article will help musicians perform and teach expressively, and thus achieve their goal of communicating the emotions and beauty inherent in music.

NOTES

¹ Expressive live performances can be compared to expressive storytelling, where dramatic nuances, necessary for telling a story in an entertaining manner, often override perfect pronunciation (or, in the case of music, rhythm, perfect intonation, and phrasing).

² I based my integral approach on a 15-year study I conducted on the teachings of the late Arnold Jacobs—former professor of music performance at Northwestern University in Evanston, IL—who was a pioneer of integrating his knowledge of principles of psychology, physiology, and music into a highly successful pedagogical approach. I have synthesized and documented his approach into an integral performance, pedagogical, and assessment model. The research study of Jacobs teaching included the transcription of 392 hours of his lectures and private applied lessons, interviews with 25 of his former students, and a thorough literature review concerning his studies in music performance and pedagogy, psychology, and medicine. The results of the study were reviewed by 15 prominent performers and teachers and published as a doctoral dissertation titled, *The Pedagogical Approach of Arnold Jacobs as Applied to Trumpet Performance and Pedagogy* (2005), a book titled *Lasting Change for Trumpeters* (2006), and a peer-reviewed article in the *Forum on Public Policy Journal* (2008).

³ The phrase “community of practice” is found in Etienne Wenger’s *Communities of Practice: Learning, Meaning, and Identity* (1998). It is described as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger et al., 2002, p. 4). Examples in music include symphony orchestras and music departments at the post-secondary level.

⁴ The IPEA model was first presented by me at the Oxford Round Table Conference in Oxford, England. An article titled *The Marriage of Two Cultures* (loosely based on C. P. Snow’s book, *The Two Cultures* [1959]) was subsequently published by the *Forum on Public Policy Journal* in its Summer 2008 issue.

⁵ Although there might be many communities of practice in music at various levels of complexity requiring their own performing standards to achieve full participation, individuals studying in a post-secondary music program in America will strive to achieve full participation by overcoming the pre-determined standards of a primary community of practice that requires performances of the highest level. This primary community of practice might also have sub-groups that will require the same pre-determined standards.

⁶ The skills that are encouraged and developed by musicians are a function of a society’s values and requirements of the music profession. These skills are embedded in specific cultural contexts. However, skills that are valued and useful in a particular (cultural) context might be totally useless in another (Lehmann et al., 2007).

⁷ The life conditions in the communities of practice described in this article relate to the musical elements of tempo, intonation, and dynamics. These elements impose immediate challenges to performing musicians and usually become more detailed (exact, accurate) as musicians play in more advanced communities of practice. In this article, it is also understood that other life conditions, such as tiredness, hunger, and other forms of stress, will not be considered as musicians are asked at the moment of performance to put such life conditions aside and instead concentrate on the performance at hand.

⁸ Whereas Etienne Wenger does not correlate the term *community of practice* to a musical culture, in this article those terms associate when the performance practices of a specific musical culture represent a reified concept used by the community of practice in which a music performer develops. The IPEA approach will be used most by integral teachers to teach and by performers to perform, while the IPEA model will be used as a “map” to trace the evolution of integral students. Finally, the IPEA instrument will be used in academic or performance institutions as an assessment tool.

⁹ In this article, music performance is considered a multiple intelligence, as proposed by Howard Gardner.

¹⁰ The trumpet is used in military music, symphony orchestras, jazz, rock, Motown, and folk music, among many other genres. It is also the closest instrument, in terms of sound production, register, and physical functions to the human voice (Loubriel, 2006, p. 26).

¹¹ The term *holon* was coined by Arthur Koestler, author of *Ghost in the Machine* (1976).

¹² See Wilber, *Sex, Ecology, Spirituality* (1995, p. 18).

¹³ Communities of practice that influence trumpeters’ expressive and technical IPEA elements span from the orchestral-symphonic, to the American big band, British Brass bands, or the Salsa Caribbean Orchestras. Each community of practice requires different qualities in their IPEA elements. For example, the intensity of breath, in the IPEA holon three (see Fig. 1), will require more intensity in the Salsa community of practice than in the British Brass Band community of practice.

¹⁴ Those pre-determined requirements include rhythmic, intonation, and phrasing preferences particular to that community of practice and are usually regarded as obstacles and boundaries of entry and full participation.

¹⁵ Participation is an active process, performed by members of a social community, which involves all kinds of relations, conflicting as well as harmonious, competitive as well as cooperative. Participation also shapes our experience as well as shaping the community—the transformative potential goes both ways—as well as being something participants cannot turn on and off as they engage in other communities of practice (Wenger, 1998, p. 57). The term *negotiation* is intended “to convey the flavor of continuous interaction, of gradual achievement, and of give-and-take” (Wenger, 1998, p. 53). Integral teachers are able to make connections across communities, enable coordination, and if they are good teachers, open new possibilities for meaning. They are required to have enough legitimacy to influence the development of a practice, mobilize attention, and address conflicting interests (Wenger, 1998, p. 109). In academic institutions, those integral teachers will be accredited professors who at some point in their careers have achieved full participation in their community of practice.

¹⁶ In instrumental applied music, these obstacles include the idiosyncratic performance of rhythmic or intonation elements, from the part of the integral student, which are usually perceived as technical or expressive deficiencies. These rhythmic or intonation elements form the basis of musical styles (phrasing and nationalistic interpretations) and they develop in six distinct stages (see Fig. 10).

¹⁷ Primarily done by practicing empirically measured exercises.

¹⁸ The SRR sequence used in this article is based on principles of psychophysiology, but was researched and codified through personal research.

¹⁹ Changes in a performance environment include variations of acoustics (as when playing to soft or too loud in a resonant or dead-sounding concert hall) or changes in tempo and intonation (as when playing in ensemble).

²⁰ A spirometer is an apparatus for measuring the volume of air inhaled and exhaled by the lungs.

²¹ Mental imaging in music is called “mental representation” in Andreas Lehmann and colleagues’ research (2007) and as “audiation” by Edwin Gordon (1987). It is important to emphasize mental representations because they underline

the whole range of musical skills, starting with remembering music, to reproducing it, to creating it (Lehmann et al., 2007).

²² An example of developmental needs organized by levels happens when music students experience the learning music process through a hierarchy (Reid, 2001). Level one, *the instrument stage*, is devoted to the physical and technical skills. Level two, the *elements stage*, focuses on musical elements such as dynamics. Level three, *the musical meaning stage*, introduces considerations of meaning found within the music. At level four, *the communication stage*, the student is encouraged to convey the implicit meaning of the work. And finally, at level five, *the expressive stage*, the student is encouraged to add self-expression to his or her performance. Therefore, upward and downward causation can be used according to the needs of each learning level.

²³ Wenger uses reification to describe someone's engagement with the world as productive of meaning (e.g., the concept of a beautiful tone is reified from the experience of listening and playing with a beautiful tone) (1998, p. 58). A comparator is built by the player's apperceived cluster of mental images of sound acquired throughout years of listening and playing (Cacioppo et al., 2000).

²⁴ Wenger uses the term *imagination* to refer to a process of expanding ourselves by transcending our time and space and creating new images of the world and ourselves. In this sense, imagination is seeing an apple seed and seeing a tree (1998, p. 176).

²⁵ These actions require the immediate disposition of the five IPEA elements by summoning conditioned reflexes developed by the student through extended practice periods.

²⁶ These communities of practice are more complex because they entail a more exact rendition of the pre-determined expressive and technical requirements. Cues include rhythmic, pitch, and phrasing details that set apart a lesser, or unpolished performance, from an expressive and technically polished performance.

²⁷ More detailed in terms of shades of tone colors and phrasing.

²⁸ The colors of the spiral are roughly based on the work of American psychologist Clare Graves (2005).

²⁹ The term "meme" was first used by Richard Dawkins in his book, *The Selfish Gene* (1976).

³⁰ This is a thought pattern that activates (or summons) a cluster of all of the expressive and technical experiences a player has had in his or her lifetime. The singing thought pattern quadrant-holon is used by integral students to visualize the music as they perform.

³¹ The singing thought pattern quadrant-holon was first proposed by me, in *Lasting Change for Trumpeters* (2006), to describe the preferred thought pattern Arnold Jacobs taught his students. According to Jacobs, this "thought pattern" is similar to that used by singers before they sing a note.

³² Some of the subconscious and conscious processes include the creation of conditioned reflexes and vicarious learning.

³³ For example, trumpeter Wynton Marsalis was influenced by the jazz and the classical communities of practice during the early 1980s, winning two Grammys in 1983 (one for his jazz album, *Think of One*, and another for his classical album, *Trumpet Concertos*).

³⁴ This acclimation process might include physical and conceptual training, such as the use of exercise drills or listening assignments.

³⁵ This plateau often results in the misleading, distorted, or immature reification of their participation in their community of practice.

³⁶ A psychograph is a graphic representation of the personality traits of an individual or group.

³⁷ The stages are roughly based on Clare Graves' (2005) work.

³⁸ This is due to the student's increase of aural skills abilities.

³⁹ The lifelong development of the expressive and technical skills is necessary for integral players to stay active in full participation within their community of practice.

⁴⁰ Yo-Yo Ma has performed traditional classical music with major symphony orchestras as well as performed and recorded with traditional Chinese ensembles in the *Silk Road Project*, Argentinean tango in *Soul of the Tango*, and Brazilian music in the *Obriago Brazil* albums (all recordings were released by the Sony/BMG record label).

⁴¹ Performance assessments instruments or charts are required to successfully complete the accreditation process of post-secondary schools of music or music departments in accordance to NASM (National Association of Schools of Music) guidelines in the United States of America.

⁴² In most undergraduate music programs in America, however, the IPEA assessment instrument will measure the various deficiencies (obstacles) of a primary community of practice in the classical or jazz genres.

⁴³ Juries in post-secondary institutions are regarded as final exams and are a one-time performance (in other words, there are no re-takes). This is similar to the performances of full members of many communities of practice in that every performance is a “snapshot” of that performer’s playing and are used to judge that performer’s artistic and technical abilities.

⁴⁴ An example of this symbiotic relationship can be seen in the assessment of the free breath in the UR quadrant/meme. Although the breath is technically correct, its aural skills application is incorrect, creating deficiencies in the stylistic quadrant and the performance attitudes memes/quadrants.

REFERENCES

- Cacioppo, J., Tassinary, L., & Berntson, G. (2000). *Handbook of psychophysiology*. New York, NY: Cambridge University Press.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper and Row.
- Gordon, E. (1987). *The nature, description, measurement and evaluation of music aptitudes*. Chicago, IL: GIA.
- Graves, C. (2005). *The never ending quest: Dr. Clare W. Graves explores human nature*. C. Cowan and N. Todorovic (Eds.). Santa Barbara, CA: ECLET Publishing.
- Gregory, R. (1987). *The Oxford companion to the mind*. New York, London: Oxford University Press.
- Lea, M. (2005). *Beyond communities of practice: “Communities of practice” in higher education*. New York: Cambridge University Press.
- Lehmann, A., Sloboda, J., & Woody, R. (2007). *Psychology for musicians: Understanding and acquiring skills*. Oxford: Oxford University Press.
- Loubriel, L. (2006). *Lasting change for trumpeters*. Minneapolis, MN, & Chicago, IL: Scholar Publications.
- Reid, A. (2001). Variation in the ways that instrumental and vocal student experience music learning. *Music Education Research*, 3, 25-40.
- Rich, C., & Yagmour, E. (2005). *Spotlight on research: Helping musicians overcome performance anxiety*. *The Mason Gazette* (pp. A4-5). Washington, DC: George Mason University.
- Rothstein, E. (2001). Orchestras still preserve the myth, but who cares now? *New York Times*, Arts Section, Midwest edition, p. A14.
- Schmidt, R. (1991). *Motor learning and performance: From principles to practice*. Chicago, IL: Human Kinetics.
- Sloboda, J. A. (1994). What makes a musician? *EGTA Guitar Journal*, 5, 18-22.
- Sloboda, J. A. (1999). Music: Where cognition and emotion meet. *The Psychologist*, 12(4), 450-455.
- Wenger, E. (1998). *Communities of practice*. Cambridge, NY: Cambridge University Press.
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating Communities of Practice*. Boston, MA: Harvard Business School Press.
- Wilber, K. (1995). *Sex, ecology, spirituality*. Boston, MA: Shambhala Publications.

MUSIC PERFORMANCE AND PEDAGOGY

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