A RECONCEPTION OF PERFORMANCE STUDY IN THE PHILOSOPHY OF MUSIC EDUCATION

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The actual place of performance in music education has been the subject of numerous debates over the years. Most debates have revolved within the paradigm of the performance ability of the teacher and consequently the performance ability of the students. Is the level to be attained that of a winning concert band/marching band/choir? Or, is the level to be attained the level at which the students and teacher feel the most comfortable and pleased? Most of this debate, along with the development of various assessments (including the Watkins-Farnum Test) and various rubrics to score music performance competitions, has emphasized characteristics of performance pertaining to accuracy of notes, precision of rhythm, and attendance to musicianship, style, and interpretation. On the other hand, the aesthetic value of performance has also been questioned in that the value of music in the schools should not be assessed solely by the importance placed on the attainment of performance skills by the students, suggesting that it is only through performance that one may know music. For example, in a recent article in the Music Educator's Journal, Bennett Reimer promotes the

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position that time spent in either performance studies and active performance in
music education (both at the K-12 and college teacher training levels) is not vital
to the reconception of the National Standards (USA) for music education and,
by extension, the field of music education itself. In the MEJ article, Reimer
wrote:

there is no reason to believe that highly developed performers make the best
general music teachers, just as there is no reason to believe the reverse. We
must get over the outdated and unrealistic assumption that performance is
the one, singular, royal road to being musical and being an effective music
educator. . . . [T]eachers cannot be expected to do what performance spe-
cialists do, and their teacher education curriculum must reflect that fact.1

This position has also been recently supported by sociological publications3 and
the following statement—echoed by several colleagues of mine—by a music
teacher-training specialist,

There is one big misconception among many music education students.
Many graduates view themselves as musicians who are going into teaching.
I attribute my own success to the realization that I am a teacher at heart. My
first responsibility is teaching children. The vehicle through which I con-
nect to them is music.4

It is likely within the previous paradigm in which these respected authors
positioned their arguments for the place of performance in the music curricu-
um and in that regard these assertions are unquestionably valid. What this
particular paradigm concerns is the quantity and quality of performance based
on purely musical attributes. The omission is that it does not include the quality
of performance in relationship to health-based music education, a growing area
of concern in the performing arts medicine field and, by extension, music edu-
cators who are concerned about this particular aspect of performance.5 The
reason for the concern and hence this paper calling to the philosophical com-
munity to re-think the place and quality of performance in music education is
that these viewpoints have had a great impact upon the validity of music educa-
tion, in that they ignore a growing body of research from the performance and
medical fields. While it must be made clear for the purposes of this paper that
the writers of the above quotes have framed their ideas gracefully within their
individual philosophical structures of music education, it must be pointed out
that current research and knowledge in performance arts, in its conception as a
physical human activity, needs to be incorporated into a revised philosophy of
music education and curriculum. Music performance in music education has
traditionally been viewed as a cognitive and emotional experience. However, it
is also a psychomotor experience, involving all sorts of soft body tissues, bones, and cartilages, which can enhance or detract from the total musical experience. Many music educators do not get enough instruction in college on how to teach voice or instruments healthfully and this is the reason for the concern among our performance and medical colleagues. Quite often, students who come from the public schools need some rehabilitation, not for reading notes and learning fingerings, but rather on just how to play the instruments correctly from a physical standpoint. Some students who have been mistaught (never intentionally, but often just through ignorance) and cannot be rehabilitated give up. While one less professional performing musician in the world may not seem important, we need to remember that these children will grow up and we hope they will be lovers of the arts and support or continue to participate in them. Being taught incorrectly or having negative experiences in music while young can sour a child on music for the rest of his or her life.

The purpose of this paper is to revisit this somewhat negative view of performance study in music education and, by extension, musician educator-performers and replace it with an argument that is placed in a contemporary paradigm as positive, practical, ethical, and hopefully transforming. This argument will be supported by visiting and briefly exploring the physicality of music, historical and philosophical precedents, a comparison of what performance specialists and music educators do, and finally the ethical import to music education. Conclusions and suggestions follow as to how performance studies and music educator-performers may be envisioned within a reconstruction of music education philosophy. However, before proceeding, one caveat must be offered: the goal of this paper is not to dissect nor demean the major tenets of any music education philosophy, but to merely provide more information that is intended to provide another variable that needs to be considered in our belief about the value and import of performance study and reintroduce it in contemporary context.

THE PHYSICALITY OF MUSIC

With the exceptions of David Elliot's work Music Matters and Vernon Howard's Learning by All Means, very few music education philosophers have considered and addressed the fact that music is a physical manifestation as well as a cognitive and affective one. In Reimer's reconstruction of the National Standards in school music programs, he does not delineate the roles of singing, playing, and by extension, improvisation, from the composing and arranging roles, as psychomotor functions. Whereas in arranging and composing the musician only need to imagine in the mind, hear in the head, and write down on paper what is desired, the performer has to go further and engage the body in a
number of extremely precise small musculo-skeletal gymnastics to simply produce a sound. While at this point it may be argued that I am probably referring to the “sound” created by a professional musician, I am not. The creation of a sound vocally or through an instrument requires a number of physiological adjustments, whether the individual is an infant or a senior citizen. To support this statement, current knowledge in performing arts medicine needs to be briefly addressed and placed in context with this argument.

In music education, a belief that has been widely promoted is that singing and playing an instrument are natural and desirable human activities. However, medical research and performing artists thoroughly disagree with this belief, as there is ample scientific evidence that indicates otherwise. Simply put, students in the public schools can end up physically damaged if they are taught improperly how to play or to sing, especially while they are very young. This occurs because muscles are most malleable and pliant when young and they gain their recognizable and functional shapes by use. If they are made to contort in a manner that misshapes them, trying to change their shape later in life is painful and sometimes impossible. For example, a young child who is in the general music class of a teacher who has little or no knowledge of the young voice is in peril of developing poor vocal habits that can lead to permanent vocal damage and eventually to a non-singing adult. This is because some strategies that are advanced as child vocal pedagogy in most general music education methods classes are vocally physically impossible. A more compelling concern is that these minimally trained teachers also do not know how to tell the difference between damaging vocal behaviors and those that are not. For example, students often referred to as the “crows,” “blackbirds,” or “speech-range singers” are usually engaging in pressed phonation or other behaviors that if caught early enough can be remedied. Otherwise, the muscles are reinforced to maintain an undesirable shape and the eventual adult who tries to sing finds it very difficult, painful, uncomfortable, and sometimes impossible.

Minimally trained teachers of young instrumentalists in the schools are not off the hook, either. They need to be able to model all the instruments correctly and not allow poor posture, misshapen embouchures, jaw tension, incorrect hand positions, and closed throats, for example, to develop in the students in their charge. The impact is just as strong as it is for the voice. When discussing musical achievement in the schools, a branch of research that music education researchers and philosophers likely refer to is that concerned with the assessment of music achievement and ability. Most of these quantitative studies have investigated achievement in sight-reading melodies and rhythms, preparing pieces for auditions and competitions. These studies are flawed in that they do not realize and address the fact that these skills can be displayed despite bad embouchures,
terrible postures, poor breathing, playing all over the body with muscular tension, and especially for vocalists, raised larynxes, retrenched tongues, pressed phonation, and even vocal nodules. Even though we do produce students in the public schools who do not go on to become professional musicians, that is no excuse to turn them out in the world too physically damaged to continue to be musically active for the rest of their lives.

Philosophically, Howard states quite correctly that, “Not even the philosophers of education have pursued the nature of learning and skilled performance with the same zeal with which they have pursued the kindred topics of teaching, curriculum, the conditions and forms of knowledge, the aims and concepts of education.” We have little philosophical inquiry into the actual development of performance skills and their place in music education. Like a number of music educators who have expressed concern about performance in the curriculum, Reimer seems to be addressing the quantity of time spent in performance study, for example, by spending too much time preparing for competitions. The point to be promoted in this paper is that the quality of performance study and the development of the musician-teacher are of the greater importance, far beyond the learning of fingerings, rhythms, and phrasings that will allow ensembles to bring home a trophy. Teachers who are going out into the schools need to have a strong proprioceptive, metacognitive, and practical knowledge of how it should physically feel to play and sing what they are teaching so they can better diagnose problem performance behavior in their students before they become entrenched as habits. This knowledge cannot be obtained by reading books and articles and participating in instrument survey or introduction to playing courses; it can best and most effectively be learned by engaging in concentrated performance study to learn the fundamentals of playing an instrument or singing. A future teacher needs to have these musician skills first before attempting to teach them to unsuspecting children. The “teacher at heart” may be doing more damage than good to his/her students by enthusiastically misteaching them. We need to acknowledge that performing is different from the roles Reimer suggests in that it is physically manifest, cognitive, and affective, and thus the most encompassing musical experience we can offer to our students. Even if it were to be offered at a limited level, it still needs to be appropriate and for that to happen, the teachers need to have quality performance training.

HISTORICAL AND PHILOSOPHICAL PRECEDENTS

Historically and phenomenologically, it is through early observations and critiques of child singing, primarily that of boys in the Middle Ages, that provide us with information about the care taken in teaching the boys how to sing. Nicholas Mesarites (circa 1190) observed boys and young men “singing a well-shaped
song with well-sounding harmony with their *throat, mouth, tongue, with their lips and teeth*” (italics added).9 We can also get some insight into reports of repulsive singing behavior, one of them by Erasmus: “Money is raised to buy organs and train boys to squeal and to learn no other thing that is good for them.”10 Although Bernarr Rainbow has interpreted this as an attempt to keep music out of the curriculum of St. Paul’s,11 it may also be stating an opinion echoed by notable music and theatrical impresarios from Schickenader to Ustinov to today’s Simon Cowell: merely an embellished verbal reaction to having heard too much bad—and perhaps unhealthy—singing.

Anatomical considerations in singing and playing are not new. Philosophically and historically, writers and musicians have often commented or simply mused upon the relationship between the body and music making, mostly singing, generally sharing observations and commenting on their importance. Philosophical writings embraced by music education philosophers have not been devoid of this commentary, either. One of the first speculations about the body in relationship to singing was written by Martin Luther in the preface to Georg Rhaü’s *Enchiridion Symphoniae IV* in 1538: “Sudarunt Philosphi, ut intelligenter hoc mirabile artificium vocis humane, quo modo ram leui motu linguae, leuiori ad buc moto futurus, pulsus aer, funderet illam infiniám varietarem & articulationem vocis & verborum.” Leupold translated this to mean, “Philosophers have labored to explain the marvelous instrument of the human voice; how can the air projected by a light movement of the tongue and an even lighter movement of the throat produce such an infinite variety and articulation of the voice and of words.”12 Luther’s expression of wonderment at the simplicity of the voice gives a clue to the underlying philosophy, the *cantare come si parla*, (to sing like one speaks) approach, that has formed the foundation for vocal education in the public schools for a number of years. Science disproves this idea, however, and this philosophy has long given way to more health-based approaches in professional singing, such as the *appoggio* approach promoted by Richard Miller13 and embraced by most voice teachers, but has not changed in public school singing.

In Europe, Luther’s speculation was followed later by Herbert Spencer’s observation of the duality of the human voice in speech and singing and their interrelationship in his essay, “Literary Style and Music,” first published in 1861:

May we not say, for instance, that the Italians, among whom modern music was earliest cultivated, and who have more especially excelled in melody—may we not say that these Italians speak in more varied and expressive inflections and cadences than any other people? On the other hand, may we not say that, confined almost exclusively as they have hitherto been to their national airs, and therefore accustomed to but a limited range of musical
expression, the Scotch are unusually monotonous in the intervals and modulations of their speech.\textsuperscript{14}

Spencer, being interested in science and its importance, echoes an idea about vocal flexibility—needed for singing—that was previously expressed by Lowell Mason in his Manual of the Boston Academy of Music for Instruction in the Elements of Vocal Music on the System of Pestalozzi (1834):

If we had not learned to talk in early life, our organs would have become so rigid and unmanageable, as to rend it impossible ever to learn to speak correctly, and perhaps not at all. It is a known fact, that adults seldom acquire any sounds in the foreign language, which are not in their own, but put a child into a foreign family, and he will soon get all their peculiar tones. He can learn by imitation, while his organs are flexible and pliant.\textsuperscript{15}

Mason’s observation has indeed been born out through scientific and anatomical research, with one of the first books on child singing in the public schools drawing heavily upon the known science of vocal anatomy in instruction.\textsuperscript{16} Mason’s writing also foreshadowed the great leaps made in the birth of and continual development in the field of vocal pedagogy. First, with the invention of the laryngoscope and subsequent voice treatise (\textit{Traité Complet de l’Art du Chant}) by one of the most eminent early voice teachers (not concerned with the instruction of the castrati voice), Manuel García II, in 1841\textsuperscript{17} was followed by Mathilde Marchesi,\textsuperscript{18} the Lampertis,\textsuperscript{19} Berton Coffin,\textsuperscript{20} William Vernard,\textsuperscript{21} and D. Ralph Appleman.\textsuperscript{22} A great amount of more recent work, due to advanced scientific technology, has taken place especially within the last thirty years, providing stronger insights into how a voice develops through life and how hard it works during singing.

It is unclear how and why anatomical, developmental, and other scientific information about the voice was eventually discarded (or perhaps inadvertently ignored) in the development of music materials for use in the schools. While an investigation into singing acquisition research in music education indeed reveals a bumper crop of studies, very few of the studies provide evidence that the primary researchers had a thorough understanding of the voice, which in turn has lead to the mass promotion and teaching of not only unhealthy but physically impossible strategies\textsuperscript{23} that knowledgeable vocal musicians would never even consider and in fact have fought against for years.\textsuperscript{24}

Concerning instrumental music, there is very little direct historical evidence that supports the notion that health was considered. However, artifact evidence is obvious when one surveys the engineering development of musical instruments, starting with the work of Michael Praetorius\textsuperscript{25} through the current engineering of musical instruments with only a few exceptions which generally
have changed little. Teachers of instrumental music through the ages have displayed an awareness of the body in relationship to performance. For example, Bach was reported to be one of the first proponents of teaching the curved hand position on keyboards as he knew that trying to play future works that were more difficult would not happen if the hand were not positioned in such a way. The reasons for the changes have not only been to produce better sounds and intonation, but also to create methods that would allow humans to interact with instruments much more comfortably and effectively.

Another historical proponent, but perhaps in a backhanded way, was John Dewey, who was strongly influenced by F. M. Alexander, the developer of the Alexander Technique that is widely used today. Of special importance is Dewey’s take on the importance of physical training and the possible catastrophe that could emerge if the physical manifestations of the body were ignored: “Intentions and effort bring forth the opposite of what was intended and striven for, and the result is confusion and catastrophe. Thus we are brought to a consideration of the psycho-physical mechanism and functioning of the individual centers of action.” As if to qualify Dewey’s statement and Alexander’s concerns, the field of Performing Arts Medicine, about twenty years young, has investigated and presented research concerned with physiological performance problems of musicians, with the most startling findings supporting the hypothesis that musculo-skeletal problems that show up in adult professional and amateur musicians often may have their inception in the early years of training. Until recently, this research has largely been ignored by the field of music education although it has been embraced by studio and applied music teachers.

The presentation of these historical, philosophical, phenomenological, and scientific facts has yet to be included in contemporary philosophical conceptions and proposed reconceptions of music education. While the argument can stand that performance is not “the one, singular, royal road to being musical and being an effective music educator,” the evidence presented heretofore in this paper suggests that it is indeed an important component that needs to be reconceptualized with serious consideration given to the current undeniable scientific facts in mind. Ignoring these facts may well promote the training of music educators who present a danger to our students and ultimately the validity of music education as a discipline.

THE PERFORMANCE SPECIALIST AND THE NON-PERFORMANCE MUSIC EDUCATOR

One of the most noble, yet with the potential of being the most harmful, music education practices is instilling in college freshmen music education majors a self-concept of themselves as “teachers” and not “performers.” While it
is agreed that this self-conception is important to some degree, this current trend of trying to set the cart before the horse is rife with problems. Teachers cannot teach effectively unless they have an established and firm understanding of precisely what content they are teaching. Historically in music, at least up to the middle of the Twentieth Century, those who were actually engaged in music by composing, performing, and conducting, for example, were also the teachers of music. The artificial divide between those who were musicians and those who taught music did not exist. Unlike subjects like Mathematics and Social Studies and much more like Physical Education, music educators need to have not only cognitive knowledge but also applicable, experiential, psychomotor knowledge. We would not want our children to have physical education teachers who were not versed in the anatomy of the body in relationship to sports and health. A physical education teacher who has understanding of muscular and motor development in young children would not put kindergarteners on a balance beam and expect them to do a back flip in a week. However, in general music education we often metaphorically put our students into this kind of situation, as since they can speak, we automatically expect them to be able to sing. To place this same situation within a music education context, Reimer makes the statement that we should not expect music educators to be able to do what performers do and in building curriculum we should keep this in mind. It is prudent at this point to explore what it is the performance specialists actually do in relationship to what non-performance music education specialists do.

Performance specialists (and some of them are music educator-performers and general music teachers) are engaged in the following behaviors when they are working with students: (1) they watch the students rather than the music; (2) they diagnose, model, and correct vocal phonation problems (when teaching voice) or physical instrumental problems (such as embouchures, posture, and hand and arm positions when teaching instruments); (3) they are aware of the relationship between the physicality of performance and the sounds that are produced and address that relationship within the context of performance (for example, using the Alexander technique); and (4) they view and subsequently teach that performance is a holistic phenomena that occurs via a highly coordinated relationship between and interaction of the musculo-skeletal system and the brain. This approach is applied to beginning as well as advanced students and even for professional musicians who participate in coaching sessions at conferences and master classes. In contrast, non-performance specialists, who may be but are not always music educators, may generally be engaged in the following behaviors when they are working with students: (1) they usually watch the music on the stand, not the students; (2) they often do not correct fundamental vocal or instrumental faults, unless the child is performing on the teacher's
major instrument; (3) they generally do not address the relationship between the physicality of performance and the sounds that are produced or address that relationship within the context of performance; and (4) they generally teach performance as a cognitive skill with social, musical, and entertainment values with little emphasis or understanding of the psychomotor and physical aspects of the performance.\textsuperscript{33} For example, it is not uncommon to observe music teachers in rehearsals with their heads buried in the music but not carefully watching the students and the same often happens in small group lessons. Notes and rhythms are what get more attention. When the teacher requests a particular musical expression such as a crescendo, he or she may not realize that the students may be providing this by engaging in a physically stressful manner rather than with both a controlled airflow and psychomotor response.

This analogy of the two emphasizes a glaring problem in that a number of the roles of a performance specialist should be in the domain of the music educator, in that the music educator is the one that starts the child in the performance medium and is responsible to make sure basic skills such as embouchure, posture, and hand and arm positions and for singing, correct and healthy phonation are correctly taught, modeled by the teacher and learned by the student. The reality is that these skills are often ignored by under-trained music educators, which often leads to the development of unhealthy and potentially physically damaging behaviors that could seriously affect the child’s ability to live a musical life when he or she is an adult.\textsuperscript{34} Music educators can best gain these skills by developing them through performance study on a variety of instruments and also in voice lessons. In order to teach these skills, music teachers must develop them to the degree that they are able to watch the students, diagnose, model, and subsequently correct any physical behaviors that could impede further improvement and enjoyment of playing or singing. For example, music educators who teach woodwind instruments should no longer only tell students to simply go and get a new reed out of the box when the old one cracks; the teacher should also make sure that the reed is adjusted specifically for that student. If the reed is too hard, the child will bite and develop a great amount of jaw tension that is mirrored in the throat, arms, hands, and the rest of the body as the child physically over-compensates for the hardness of the reed. In singing, the teacher needs to watch the students, not the music or the keys on the piano if accompanying, to make sure that there are no retrenched tongues, pressed phonation, posture problems, or other physical indicators that the singing that is happening is unhealthy. A music teacher who spends the entire time playing the piano for lessons, classes, or chorus rehearsals cannot do this. Contrary to Reimer’s statement, there are a number of skills and kinds of knowledge that music educators need to have that are also shared with the performance special-
ists. Perhaps this leads one to suggest that music educators should be musician educators who specialize in the fundamentals of performance.

ETHICAL CONSIDERATIONS

In music education, we have frequently been placed in situations where we need to defend music on the basis of moral and ethical concerns. However, these circumstances have generally arisen in relationship but are not limited to the selection of music for performance, the use of popular music in classrooms, the education of girls, and any music perceived of being of a religious nature. However, ethical and moral considerations have never been addressed in relationship to teaching known healthy performance behaviors as opposed to teaching unhealthy performance behaviors.

As a discipline, we cannot continue to promote lessening the quality and importance of performance instruction when the scientific evidence clearly shows that by doing so we are putting our children in danger of developing habits that may impede their success as amateur or professional musicians. They will not be able to sing in choirs, play in community bands, or even audition to be music education majors. We can no longer look at singing and playing instruments as natural behaviors, as they clearly are not. For amateurs and professionals, infant through geriatric, research shows that these behaviors are highly coordinated musculo-skeletal activities, even at their simplest level. To choose to ignore this body of research and knowledge in our teaching of music performance skills is ethically wrong. Although, as stated earlier, performance is not the only road to being musical, it is still a significant component and impeding this development at the beginning may eventually adversely affect the development of other desired behaviors that may also be considered musical.

Ethically, it also puts us in a situation where eventually we as a profession will be held accountable for knowingly promoting and allowing our teachers to enter the field of music education woefully under-trained. This future is not that far off; as this paper was being written, preparations were being made for the first Health Promotion in Schools of Music Conference that was held in Fort Worth, Texas, in October, 2004. One of the major goals of this conference was to develop guidelines for the field of music education in teaching and promoting health-based performance teaching and training. Some of those recommendations have since been included and cited in this paper. Clearly, these considerations also need to be explored in relationship to formulating a clearer philosophical understanding of where performance fits in to music education.
CONCLUSION

In this paper, I have made the argument that the place of performance studies in music education needs to be re-evaluated philosophically within a re-cast paradigm. The continued misconception of performance and the resulting creation of teachers who do not know their art and craft well enough to teach it correctly needs to be revisited. With this in mind, several statements to aid this reconception will be made, which need to be further investigated philosophically by the field.

First, we need to revisit the most prevalent philosophical views of music education and question how they view music performance education. The notions of music being a primarily aesthetic, emotional, and cognitive way of knowing and understanding needs to be incorporated with a philosophy of the physicality of musical performance and its manner of being taught. Second, we need to revisit the philosophy of music teacher education in that we can no longer marginalize performance education to the extent that students receive little or no professional instruction on learning and teaching instruments or no vocal instruction if they are licensed to teach K-12 general, choral and instrumental music. Third, we need to reconceptualize what a music educator is. While the educator quoted at the beginning of this paper describes herself as a teacher who uses music as her vehicle, this gives the impression that the field she is in is called “education about music.” The field is called “music education,” implying that all the components that comprise music (not just performance) are first and foremost the fundamental core of the field. Music, as a human activity, would exist and flourish without the field of music education to support it, while on the other hand, music education would not be able to exist if there were no music.

The direct implication is that teachers of music need to have not only a love for music but also the skills and knowledge to teach it effectively. This leads me to the fourth and final statement. We need to encourage and allow our music educators, both public school and university educators, to be musicians and live musical lives, to be creators of music in addition to being observers, consumers, and promoters of music consumption. A continued promotion of the insufficiency of performance ability and skills in music education needs to cease.

Musically gifted musicians, some of whom are successful music educators and professional performers, who love music so much that they choose to go into music education, often find themselves marginalized and even punished for obtaining and even maintaining a high level of performance ability and achievement. Unfortunately, this directly affects their ability to provide unique and enriching contributions to the field of music education, robbing us all of some deeply profound and provocative viewpoints. The value and future contributions of these musician and performance educators needs to be recognized and con-
ceptualized within a broader and more holistic philosophy of music education and subsequently for any reconceptualization of the National Standards in the USA and for music education overall and internationally, in the Twenty-first Century.

NOTES


2 Ibid.


4A number of articles are available from the Performing Arts Medicine Association and also at their website http://www.artsmed.org/. There are also numerous books available: The Athletic Musician by Barbara Paull and Christine Harrison (Lanham, Md.: Scarecrow Press, 1997), Playing (Less) Hurt by Janet Horvath (Minneapolis: self-published, 2002), and The Musician’s Survival Manual: A Guide to Preventing and Treating Injuries in Instrumentalists by Richard N. Norris ([S.I.]: International Conference of Symphony and Opera Musicians, c1993).

6Teaching young children to use head (light adjustment) and chest (heavy adjustment) voices is impossible because the ligament structure required for those adjustments is not grown in enough to function as an adult until around the age of ten years, but likely not earlier than eight years. This research was published as the first of a number of studies by K. Ishii, K. Yamashita, M. Akita, and H. Hirose, “Age Related Development of the Arrangement of Connective Tissue Fibers in the Lamina Propria of the Human Vocal Fold,” Annals of Otology, Rhinology and Laryngology 109, no. 11 (2000):1055–1064. Young children create high and lows in their voice primarily by moving the larynx up and down, not unlike a slide whistle.

7 For an example of an excellent source of studies, see David Boyle’s chapter “Evaluation of Music Ability” in Richard Colwell, ed., The Handbook of Research in Music Teaching and Learning (New York; Schirmer, 1992).


11 Rainbow, Music in Educational Thought and Practice, 49.

12 George Rhau, Enchiridion Symphoniae IV (Viteberge, Germany: George Rhau, 1538), Microfilm 1076, Van Pelt Library, University of Pennsylvania, Philadelphia. Also

13 R. Miller, *The Structure of Singing* (New York: Schirmer, 1996). A discussion of the appoggio approach is on pages 23–24 and simply put, refers to the supported and balanced use of all the systems (breath, posture, mouth, pharynx, larynx, resonators, and articulators) required for singing.


17 Manuel García II (1805–1906) was well known for being the inventor of the laryngoscope and author/pedagogue on singing. His work cleared the way for a combined scientific and aesthetic approach to singing to develop. His most famous book, *Traité Complet de l'Art du Chant*, was written in 1841. The English translation for Parts 1 and 2 was done by Donald Paschke in 1984 and published by Da Capo Press in New York City.

18 Mathilde Marchesi (1821–1913) was a German mezzo-soprano who also was a pupil of Manuel García. Marchesi taught at the conservatories of Cologne and Vienna and in Paris. She wrote *Bel Canto: Theoretical and Practical Vocal Method* (Mineola, NY: Dover Publications, 1970).

19 Francesco Lamperti (1813–1892) and his son Giovanni Battista Lamperti (1839–1910) were both renowned voice teachers and publishers of voice books. Francesco wrote *A Treatise on the Art of Singing*, published in 1877 and his son wrote *The Technics of Bel Canto*, published in 1905.

20 Berton Coffin (1910–1987) is well known for his book, *Overtones of Bel Canto*, which includes a color-coded vowel chart that can be overlaid on the piano.


23 In addition to teaching head and chest voice to students who do not have them yet, another damaging behavior is telling general music teachers to sing with a straight tone, which is one of the most damaging behaviors for an adult voice.

24 These conflicts, although not documented but anecdotally evidenced, have been reported by voice teachers in Pennsylvania and California since the 1970's. The voice teachers attempted numerous times, usually during professional music education conferences, to let the general music professors know that they were teaching and promoting physically impossible and/or damaging behaviors, but they were largely ignored. E.g., private conversations with L. M. Trollinger since the 1980s.
Michael Praetorius’ *Syntagma Musicum*, published in 1618, is one of his most quoted works concerning instruments of the renaissance. His later book, *Theatrum Instrumentorum*, published in 1620, introduced the first pictures of African instruments in a European publication.

For example, the bassoon has often been referred to as one of the least developed instruments in comparison to the other woodwinds.


Over the past twenty-five years, a great deal of attention has been paid to the relationship between the body and the mind in music performance and that the teacher needs to visually observe the student while s/he is learning to sing and/or play an instrument. The existence of Performing Arts Medicine Association (PAMA) attests to this fact. Private instrumental teachers, who also tend to perform professionally in orchestras or other ensembles, are well aware of the physical problems that can result from playing an instrument and also know that teaching prevention strategies to young students and watching them carefully is the key to avoiding, as best as possible, any future injuries, whether the child decides to play professionally or for fun. A number of professional journals geared toward instrumentalists provides performance health information (e.g., *The Double Reed and The International Musician*) and most instructional books concerned with instrument playing address it; for example, Randy Gardner, *Mastering the Horn’s Low Register*, (Richmond, VA: International Opus, 2002) and Jane Horvath, *Playing (Less) Hurt*. In voice, the information is available via a plethora of pedagogy books, some of which are by William Vennard, D. Ralph Appelman, Richard Miller, Oren Brown, Brenda Smith and Robert Sataloff, and Barbara Doscher. Singing while standing in front of a mirror is a known behavior that is required when learning how to sing: watching is just as important as listening. This is done at all levels of instruction, from amateur to professional.

Reimer, “Reconceiving the Standards and the School Music Program.”

A problem identified by the Music Education Panel of the Health Promotion in the Schools of Music Conference is that “Music teachers and their students are susceptible to potential injuries about which they know very little and are therefore being ignored” in *Music Education Liaison Report to NASM* (Reston VA: 2004), 1. A recommendation made by the panel was “Teacher training curricula in universities and colleges need to include information about health risks, prevention, and remedies,” ibid, 2. Both the music education neuro-musculo-skeletal health and the music education vocal health groups were in agreement in that most of this information is not taught via music educa-
tion methods classes or texts and expressed concern that in some cases students were shuffled through instrumental courses too fast (for example, trying to learn all the woodwind instruments in one semester class, which is particularly problematic if the teacher is a graduate student who may have played one of the instruments, but barely touched the others) or that teachers who were to work in elementary school music programs had no vocal instruction. Based on medical research presented by physicians at the conference, the music education neuro-musculo-skeletal group reported that in the student population (including grades K-12) 35–65% of students engaged in music study already have reported neuro-musculo-skeletal injuries at any given time. In addition, many high school bands, choirs, and orchestras participate in competitions, which requires that the students learn their music (melodic and rhythmic aspects) quickly and this is generally emphasized from the beginning of lessons in the public school. However, correct notes and accurate rhythms can result, despite behaviors that suggest vocal or neuro-musculo-skeletal problems of which the music educator is not aware, since s/he is more focused on the music rather than the physical relationship between the instrument and the child. For more information, see: D. Hodges, D. Circle, C. Lawrence, and C. Madsen, Music Education Liaison Report to NASM.

33For an excellent synthesis of research findings concerned with teacher effectiveness and quality, see Jennifer King Rice, Teacher Quality: Understanding the Effects of Teacher Attributes (Maryland: University of Maryland, Economic Policy Institute, 2003).
