

Applying Jaques-Dalcroze's method to teaching musical instruments and its effect on the learning process.

By Lorraine Hétu Manifold



*To know something is not merely to be told it or to see it,
but to act upon it. – Jean Piaget*

1. Introduction

The use of the body in the learning process is an important tool that Western Civilization has tended to either forget or to minimise its importance. Yet the “masterful use of the body” was a natural goal for the Greeks, who “by means of their artistic and athletic activities, sought to develop a body that was perfectly proportioned and graceful in movement, balance, and tone. More generally, they sought harmony between mind and body, with the mind trained to use the body properly, and the body trained to respond to the expressive powers of the mind” (Gardner, 1983, p. 207). This link to the past is useful to remind us how our current notions are not universal, either geographically or in time. As we know, physical training was an imperative for the Greeks, not only to produce strong and beautiful bodies, but also as a means to improve the mind. Thus in his *Republic* Plato placed “music and gymnastics in the Greek sense of the word as the basis of an ideal education” (Naumberg, 1914). Meanwhile,

our so-called classical education has wandered far afield from the original Greek conception of education, as the synthetic training of mind and body, and has completely intellectualized it. Mental training has become the bulwark of our education, physical and artistic training are regarded as incidentals. Artistic feeling and physical poise, instead of being regarded as the essentials of right education, are slipped in as extras if there is time (Naumberg, 1914).

A Professor of Cognition and Education and Neurology, Howard Gardner (1983), while acknowledging that in the past, the use of one’s body “has been important in the history of the species for thousands, if not millions, of years”, yet in most recent times, he agrees that there “has been a radical disjunction between the activities of reasoning, on the one hand, and the activities of the manifestly physical part of our nature, as epitomized by our bodies, on the other. This divorce between the 'mental', and the 'physical' [Gardner continues] has not infrequently been coupled with a notion that what we do with our bodies is somehow less privileged, less special, than those

problem-solving routines carried out chiefly through the use of language, logic, or some other relatively abstract symbolic system” (p. 207). Thus, we see how the Cartesian rational thought has permeated our Western culture system and relegated the body to a lesser part in comparison with the rational brain, itself on a pedestal.

We often imagine our beliefs to be universal truths. Therefore, studying other cultures and other epochs is crucial to gain perspective on what truth really is. In his research, Gardner (1983) has found that not all cultures have made this great divide between intellectual or 'reflective' and motor or 'active' powers of human beings. Thus, he notes how Westerners would do well to 'pause' before concluding “that a particular legacy of Western Cartesian thought is a universal imperative” (p. 207). Recently, many scholars have begun to study the imbalance between mind and body and are promoting a more equal use of both together. Gardner (1983) notes that psychologists have also recently “discerned and stressed a close link between the use of the body and the deployment of other cognitive powers” (pp. 207-208). As stated by Edward T. Hall (1976), a noted anthropologist, in his book *Beyond Culture*, “Western man has created chaos by denying that part of his self that integrates while enshrining the parts that fragment experience.” Indeed, man’s mind and his intellectual powers and capacities have, in the last centuries, been put on a throne to detriment of all other intelligences. Therefore, it is important that, in order to return to an equilibrium that we “re-introduce ourselves to physical knowing” (Campbell, 2004, p. 73). Thus, the re-introduction of the body in our learning process is being advocated by many different fields of study, neurology, anthropology and psychology.

Certain musicians have also found the importance of using the body to understand music. Jaques-Dalcroze is one of them. He has produced a method to learn music by using the body as the primary source of learning. I will thus in this paper endeavour to show in which ways Eurhythmics training can be applied to learning how to sing. I will first provide an overview of

the Dalcroze method, covering the basic aspects of its tenants and discussing its effect on the learning process. I will then discuss more in depth how the Eurhythmics method can be applied to learning the basic techniques for singing. For this paper, I have selected four major areas of vocal pedagogy to include breathing, phrasing, articulation (dynamics), as well as general issues of technique and a brief description of Dalcroze solfège activities that are useful for singers.

2. Jacques-Dalcroze: A Method of Using the Body to Learn Music.

According to Dalcroze, Eurhythmics is the one of the major keys to learning music through movement, and expressing emotions through the body. The term *Eurhythmics* is derived from the Greek *eu* and *rythmos* meaning “good flow” or “good movement” (Mead, 1996, p. 38). Jacques-Dalcroze coined this term to mean “a way of experiencing and exploring musical sensation and musical knowledge together” (Schnebly-Black, 2004, p. 38). This experiencing and exploration of musical sensation is done primarily through the body. In fact, in Eurhythmics, the “human body is the first instrument that must be trained” (Jeong, 2005, p. 19). Linked to the notion of the human body are also human emotions. Emotions and the body are closely connected as the body expresses emotions in a very physical way. So important is the concept of the body that Jae-Eun Jeong, in her dissertation on the Dalcroze methodology states that:

The base of all musical art is human emotion. It is not enough to train just the mind or the ear or the voice; the entire human body must be trained since the body contains all the essentials for the development of sensibility, sensitivity and analysis of sound, music and feeling. Any musical idea can be performed by the body and any movement of the body can be transformed into its musical counterpart. There must be an immediate reaction between the mind that conceives and the body that acts (Jeong, 2005, p. 19).

While other forms of music education theories can produce very accomplished musicians, they often lack the sense of musical phrasing, of emotional expression and of profound understanding of the music they are playing or singing. Yet, as Jeong (2005) explains, because the “base of all musical art is human emotion [it] is not enough to train just the mind or the ear or the voice; the entire human body must be trained since the body contains all the essentials for the development of sensibility, sensitivity and analysis of sound, music and feeling. Any musical idea can be performed by the body and any movement of the body can be transformed into its musical counterpart. There must be an immediate reaction between the mind that conceives and the body that acts” (p. 19).

Eurhythmics is more than just about body movement. Movement – musical movement – in fact, is inextricably linked with expressiveness; they are as two sides of the same coin. Thus, using the body haphazardly is not an option in Eurhythmics. One can clap a rhythm without any feeling, without any direction, and without any phrasing. But in order to be musical, the body must be trained to use all the muscles in such a way that beauty of expression will emerge deliberately. In fact, the expressive aspect is so highly valued in Eurhythmics that Jacques-Dalcroze realised that “when the learner experiences aspects of music through body movement, the expressive responsiveness engendered in the child can lead to genuine musicianship. He also believed that without such preparation in early childhood the individual may tend to respond mechanically, and that expressive musicianship may later be deficient” (Jeong, 2005, p. 18). This in turn, produces musicians who focus on technique rather than on expression, which in turn leads to a less rich performance. Thus, in contrast to other musical education processes, some of which focus may focus exclusively on learning musical scores and technique, the focus of the Dalcroze method is “on the gradual development of the student’s *musicality* [italics added]” (Schnebly-Black, 2004, p. 38). Thus, with the heightened experience of full body involvement as well as

involved expression, the “Dalcroze approach has the potential to infuse new energy into music education” (Jeong, 2005, p. 13). And energy is required if musicians are to express emotion and musicality.

In this section, I will first discuss the background to kinesthetics in relationship to music in order to demonstrate the richness of this loco-motor learning process. Then I will discuss major components that need to be learned through the bodily learning process. These are the notions of 1) rhythm, 2) movement and 3) time-space-energy. I will provide a general overview of these concepts as they are crucial to the concept of Eurhythmics. In fact, they are like subdivisions to better understand the method itself.

a. Music and Kinesthetics

Let us first understand the notion of kinesthetics. The word itself is derived from kinesthesia originating from the Greek *kinema*, meaning ‘motion’ and *ethesia* ‘sensing’. William Conable, a cellist and Alexander Technique teacher, introduced “the kinesthetic sense” by asking someone to close his eyes and wiggle his right thumb. In this exercise, one uses neither of the five senses: one does not “taste, see, smell, hear, or touch” one’s thumb moving, yet, the person knows that his or her finger is moving and knows how to continue moving it. That, Conable explained, “is the essence of the kinesthetics sense” (Barrett, 2006, p. 34). Because it is a basic element of human sensation, this kinesthetic sense could probably, and should, be included with the other senses, thus totalling six senses.

Yet, as we saw in the introduction, using the body to learn is “frequently undervalued in school since other problem-solving approaches are held in higher esteem” (Campbell, 2004, p. 65). But in music especially, but in other academic subjects as well, the loco-motor element is crucial in the learning and training process and society would do well to re-incorporate it into the

educational system. Music students especially need to develop their kinesthetic sense because their body is deeply involved in producing and expressing music. Going even further, Campbell (2004) believes that this “bodily-kinesthetic intelligence is the foundation of human knowing since it is through our sensori-motor experiences that we experience life” (p. 65) One of the major principles upon which Eurhythmics is based is that “sound can be translated into motion and motion can be translated into sound” (Abramson, 1980, p. 62). Eurhythmics students will spend hours of training learning to translate in both directions. For example, when vocal students are not being as expressive as they could, asking them to use their muscles will not only engage the body but the vocal mechanism will follow as well. By repeating the same passage with the added physical motion, the voice will automatically express what the body is doing. Thus, the foundation of Eurhythmics is the transformation of ideas, emotions, intentions and music into movement.

If the process of learning to use the body to be more musical has a positive effect on applying technique, it is due to the relation between mind, body and emotion. In this regard, Abramson (1980) has stated that “the development of this kinesthesia ... allows one to orchestrate movements and to fine-tune body skills” and that “recent discoveries of special sensory cells in the motor homunculus of the brain suggest subtle connections between brain, body, and feeling potentials” (p. 62). Even further we can, according to Abramson (1980), “change movement ideas or intentions back to sound ideas and sound feelings. We can try to bring every detail and dimension of sound and movement together” (p. 62). This direct tie between music and gestural language is discussed by Professor Gardner (1983) who remarks how “young children certainly relate music and body movement naturally, finding it virtually impossible to sing without engaging in some accompanying physical activity” (p. 123). In fact, he states in his book *Frames of Mind* that “many of the most effective methods of teaching music attempt to integrate voice,

hand, and body”¹ (p. 123). Of course, good voice teachers already involve some parts of the body by teaching their voice students how to breathe correctly and to use 'breath support' in order to sustain long phrases. Vocal students will also learn how to position the mouth in order to produce a better sound. These aspects are technical. They cannot be included in the term Eurhythmics because they are not using loco-motor movement to express, but using physical features to sing. Yet, by involving all three components, voice – or technique – hand, and body, the hand and body motions will assist the singer to be more expressive in addition to applying good technique.

b. Rhythm

Rhythm in Eurhythmics is a natural expression of the human body. In many countries, such as those in the African and South American continents, rhythms are highly developed. According to Aniruddh Patel at the Neurosciences Institute, “in every culture there is some form of music with a regular beat, a periodic pulse that affords temporal coordination between performers, and elicits synchronized motor response from listeners” (Sacks, 2008, pp. 239-240). Thus not only is rhythm at the basis of music in all cultures, but it usually elicits a physical response. According to Sacks (2008), this “linking of auditory and motor systems seems universal in humans, and shows itself spontaneously, early in life” (p. 240). Dalcroze understood this instinct: his "approach to music teaching is based on the idea that the source of musical rhythm is in the natural locomotor rhythms of the human body” (Woods, 1987, p. 41). Yet, even natural expressions, such as stomping one's feet or clapping hands, can be developed and trained in such a way that their usage becomes even more meaningful to the musician. For example, running can be said to be a natural ability, yet professional runners still learn how to run so that every muscular movement is

¹ Regarding learning music without body movement, Gardner continues to say “it is probably only in recent times and in Western civilization, that the performance and appreciation of music, quite apart from movement of the body, has become just the pursuit of a tiny “vocal” minority” (1983, p. 123).

performed with maximum efficiency. Likewise, the body's natural movements can be maximised in music to help the musician be more expressive.

But how is rhythm related to Eurhythmics? Because “rhythm is central to musical experience and understanding” and because of the “enormous diversity of rhythm ... it is no surprise that there is a wide range of opinion about how to teach it” (Dalby, 2005, p. 54). For Dalcroze, “rhythm is the fundamental motivating force in all the arts, particularly music”. It is the underlying aspect of any piece of music. Because he understood the natural response to rhythm, all “aspects of music learning are introduced through rhythm in the Dalcroze method. Dynamics, tempi, tempo changes, pitch, texture, and harmonic development are all related to the primary element of rhythm” (Woods, 1987, p. 41). In fact, addressing different notions of rhythm through our motor systems, especially by relating them to music, can help us improve our bodily movements. Sacks (2008) tells us that “rhythm...., the integration of sound and movement, can play a great role in coordinating and invigorating basic locomotor movement” (p. 241). To do this, our awareness of our different muscles, small muscles and large muscles, needs to be increased. Eurhythmics addresses the learning of movement by increasing our kinesthetic senses, not in a dry, theoretical setting, but in using music to adding expressiveness to bodily movement.

c. Movement

Learning music through body movement is a powerful tool. In fact, body intelligence and body memory are so keen, that kinesthetics can also be used in the learning process with academic subjects. In this regards, Rudolf Laban and Henri Bergson, two movement theorists, “underscore the relationship between nonverbal movement experiences and abstract symbolic thought. Through movement [they say] we can both perceive and express the meaning in our experiences” (Campbell, 2004, p. 73). It is interesting to note that Laban and Bergson wrote their book *Beyond*

Words: Movement Observation and Analysis in 1988, while Dalcroze had the inspiration to learn music through movement in the first quarter of the 1900's. Indeed, almost a hundred years before, in 1898, he wrote the following thoughts about movement:

I am beginning to think of a musical education in which the body would play the role of the intermediary between sound and thought, so becoming an expressive instrument. Bodily movement is an experience felt by a sixth sense, the muscular sense. This consists of the relationship between the dynamics of movement and the position of the body in space, between the duration of movement and its extent, between the preparation of a movement and its performance. This muscular sense must be capable of being grasped by the intellect, and since it demands the collaboration of all the muscles, voluntary and involuntary, its rhythmic education needs movement of the whole body (Farber & Parker, 1987, p. 44).

Thus, Dalcroze was a true pioneer and only little by little are other studies proving the profundity of his understanding of human learning. Learning through movement is not only very effective, it is also very meaningful and fulfilling. Using one's body to learn theoretical aspects is a very creative process and therefore extremely satisfying.

By learning music through movement, we incorporate our knowledge at many levels. Thanks to his method, music students are able to *feel* musical concepts through body movement. In classes, they move to piano improvisations or learn by playing musical games “that challenge even advanced musicians to respond physically to musical works that may have been previously intellectualized” (Woods, 1987, p. 41). Yet, the students never learn particular steps, the process is not that of learning how to dance. Rather, the students must listen attentively and find ways to apply what is happening in the music by using body movement in the correct amount of time, by using the space around them and applying a corresponding amount of energy to their movement. In this way, students learn to “enact particular musical meanings in physical space. The point of

meeting that challenge (and the aim of the Eurhythmics class) is to deepen both his understanding of, and ability to produce, music (Farber & Parker, 1987, p. 45). In this way, students' intellectual understanding of the theoretical aspects of the music as well as their physical understanding of the musical meaning will then be applied to how they interpret the piece themselves. This learning at several levels simultaneously greatly enhances their musicianship.

How does the learning process work? The learning process of Eurhythmics has students try to “find the relationship between sound and movement. It’s not just movement and it’s not just sound, but you need to find what they have in common. That is very specific” (Thomsen, 2007, p. 14). When moving to a piece of music, Eurhythmics students will move their limbs in such a way as to express what is happening in the music. In order to do so, they must listen intently, and repeatedly to the passage over and over. For every musical passage, especially in orchestral music, or even chamber music, will be expressing a variety of expressions at many differently levels. Students can make long arm movements to the long cello sounds, or step and skip at the underlying ostinato. If set in pairs, one student can express the cello and the other the ostinato. This intensive listening, which in turn is translated into creative body movement, is helpful to any musician in feeling the music in his own individuality. In addition to hearing an ostinato of repeating eighth notes, Eurhythmics students hear the movement and the phrasing of those eight notes. And when in turn, they will learn to play the ostinato, they will not only play the eighth notes, but they will feel where the phrase begins and where it ends. Thus, the learning process is listening to sound, applying it to movement and then expressing it in sound.

d. Time-Space-Energy

The concept of time linked to space linked to energy is a very interesting one. A good example can be found in the exercise of putting one’s hand at one level, point A, and moving it to

another level, point B. To do this, the hand will require time to travel from point A to point B, will traverse space between the two points, and the energy involved will be dependent on which emotion is being expressed. In other words, the energy can be angry, thus creating a brusque motion, or sad, creating a limp motion, etc. All three aspects will always be involved in any given movement. Thus, we can easily agree with Marie-Laure Bachmann when she states that any “given movement, whether long or short, firm or feeble, fast or slow, human or mechanical, depends upon some minimum of space and time for its very existence” (1991, p. 27). Being aware of this aspect also increases a singer's musicianship, as it is no longer a question of singing the notes on a page, but applying the concept of time-space-energy within the musical piece because music is not static either. Feeling its movement and its energy is crucial in knowing how to be musically expressive.

Rhythm is at the basis of this concept of time-space-energy. Dalcroze (1921) provides a very useful sequence of thought to explain how the “perfecting of movement in time and space can only be accomplished by exercises in rhythmic movement”:

1. Rhythm is movement
2. Rhythm is essentially physical
3. Every movement involves time and space
4. Musical consciousness is the result of physical experience
5. The perfecting of physical resources results in clarity of perception
6. The perfecting of movement in time assures consciousness of musical rhythm (p. 39).

An exercise to learn and feel physically how the aspects of time-space-energy are linked is one offered by Timothy Caldwell (1995): “hold your hands in front of you about two feet apart, palms facing each other. Clap them together at different speeds, being sure to return to the original starting points” (p. 22). We notice in doing this how different levels of energy are required when we modify the speed. In fact, Dalcroze tells us that “every line traversed by a limb in a given

space and time becomes shorter and longer according to the degree of muscular energy that activates the movement” (Bachmann, 1991, p. 161). Thus, if we increase the speed, we need to shorten the space between our two hands, and the amount of energy will also be modified. If we clap at a slower rhythm, the amount of space between our hands will increase. By modifying the amount of space and changing time and the energy levels, we acquire a clear understanding of how the three concepts are inextricably linked and how they are based on the variety of rhythms.

Energy is therefore an important factor in how we use movement and energy is directly related to emotion. This will be crucial when voice students use movement in expressive singing. How boring would it be to watch a recital in which a singer had limp hands and limp movements in a happy song. How inexpressive that recital would be considering what is occurring in the music. Yet, students who are new to body movement find it difficult to use energy in their movements. Dalcroze tells us that even the *preparation* for the movement will require energy. It is not enough to take a deep last-minute breath and to begin singing a long sad phrase if the body hasn't been feeling that emotion beforehand. Were we to speak a sentence filled with sadness, we would not begin the sad feelings only when the words begin. The feeling precedes the expression. In the same way, when we are performing, the feeling needs to prepare the body for how the phrase will be sung. In addition, if the phrase is long or short, the quality of the preparation will be different. Dalcroze knew this when he stated in 1931 that “every movement enacted in a given time requires a completely different preparation from one enacted in a longer or shorter time” (Bachmann, 1991, p. 161). This is why it is so important in Eurhythmics to be aware of how energy and time are linked.

The quality of the movement through space is determined by the type and amount of energy put into the movement. In other words, if we notice the quality of movement first, it is because we experience how the movement relates to space – a property that has to do with its energy, with its

very plasticity. We may say, “What a fine movement that is! How disorganized it is! Such stiffness! Whether seen through the eyes or experienced through the body, movement is automatically analyzed by reference to its actual displacements (changes of position, use of space, orientation) and to the manner in which [it is] executed (lightly or weightily, supple or stiffly, slowly or briskly)” (Bachmann, 1991, p. 32). Because movement is so noticeable, it is important that we learn to use movement in relation to time, space and energy, if we want to learn how to express musicality.

After this quick overview of the fundamentals of rhythm, movement and time-space-energy, we will review how these principles can be applied to the learning process and enhance the musical understanding of Eurhythmics students.

3. Effects of the Method on the Learning Process

Body movement helps students learn as it captivates their interest more than listening passively to a teacher speak and simultaneously develops social skills. Indeed, in other education methods, music is often “taught by drilling facts and theory into children rather than by arousing their interest so that they want to learn most about music” (Willour, 1969, p. 75).

According to Dalcroze, the most efficient way to teach music depends on four basic tenets:

1. The skills of perceiving and responding to music must be developed. With the young, it may merely mean playing a musical game and responding to the beat. At a more advanced stage, it could mean hearing a phrase and then, stepping and conducting it twice as fast.
2. Students must develop an inner sensing of music; the inner aural sense and the inner muscular sense. Students will internalize the time, space, and energy relationships in movement that correspond to those in music.....

3. Sharper communication between the ear, body, and mind must be developed. Because of the movement aspect of the Dalcroze techniques, students are actively involved and mentally attentive in their listening and responding.....
4. Students must develop a storehouse of aural and kinesthetic images that can be translated into symbols and, upon recall, be performed at will. This is the key to music reading. This source of musical ideas becomes a repertoire for expressive performance and a means toward a more sensitive perception (Mead, 1996, p. 40).

These four components will be taught mainly through group movement exercises and games, with the teacher among the students, leading them or at the piano guiding them from afar. The active participatory method of Eurhythmics is not only conducive to enjoyment in learning but also develops relationships with others and how to interact with each other in a learning atmosphere.

The earlier music is incorporated into children's learning, the better. In fact, because of the active participation in the Dalcroze method, it is not only feasible, but also a great advantage to introduce Eurhythmics in Day Care Centres for pre-school children. This would, according to Willour (1969), allow children to be "much better prepared to enter their general academic studies as well as more advanced music studies" (p. 74). Not only is this learning efficient for their general knowledge of music, but also to increase children's body motor abilities because psychologists and educators know that "children with poor muscular coordination are slow learners" (Willour, 1969, p. 74). Thus, Dalcroze Eurhythmics is an all-encompassing education method because it:

demands and develops coordination and encourages mastery of large muscle movements. It stresses smooth body movement, a foundation for success in other physical activities. It develops eye-hand-body coordination necessary in other academic subjects, such as reading. Good listening habits, powers of concentration, and the experience of being in an organized class situation would help all students follow teachers' directions and learn the role of a pupil. Through Eurhythmics, children learn to associate sounds and symbols and to train their eyes to follow from

left to right. The understanding of patterns (meter) that is developed in Dalcroze Eurhythmics can be of value in later studies of math. The ability to analyze is stressed in Eurhythmics (Willour, 1969, p. 74).

Because of the important skills which can be developed through Dalcroze Eurhythmics, such as concentration and ability to listen, it is obvious that the earlier a child is exposed to this method, the earlier he or she will develop skills that can be used in other fields throughout his or her whole life.

Dalcroze believed that “musical behaviours” are what children need to learn to become good musicians “in addition to technical skills” (Caldwell, 1995, p. 63). He also knew that the “beginning music student has to be taught not only the necessary musical skills, but also how to learn them”. In this he was, along with his contemporaries Jean Piaget, John Dewey, Granville Stanley Hall, Maria Montessori, Dalcroze realised that students, in addition to learning musical knowledge through their kinesthetic senses, must also be taught five distinct skills: 1) to pay attention (listen), 2) to concentrate, 3) to remember, 4) to reproduce (model) and 5) to be expressive. I will therefore provide a quick summary of these learning processes before discussing the application of the Dalcroze method to learning how to sing.

a. Paying Attention/Listening

Students who can pay attention for a long period of time will be more prone to learning more effectively. Yet, paying attention is a large concept. There are so many things one can pay attention to, even during one music lesson which can include: listening to the music; feeling what is going on inside our bodies; noticing the movements we are making in response to the teacher’s request; making sure we are singing on pitch if singing is included in the exercise. Any one learning activity can include quite a wide range of aspects that all need attention from the student.

While in traditional schooling of academic subjects, the students are merely sitting and listening to the teacher's discourse, in Eurhythmics, the principle, according to Caldwell (1993), is that "the teacher who uses the least amount of talking and the greatest amount of physical movement and music making (by both the teacher and the students) greatly increases the student's level of attention" (p. 27). This is because, if a teacher talks a lot, students can easily let their minds wander. But if they know that they have to listen in order to find out what to do, then it is much more likely that their attention span will last longer. This learning through physical movement also seems to attract the most attention from the students. Meanwhile, students need to learn how to pay attention to an increasing number of aspects simultaneously. It is similar to learning how to drive a manual car. At first, it is very difficult to pay attention to all aspects at once, the clutch, the gears, breaking, the traffic around, etc. But as each one aspect is mastered, then little by little, each one becomes automatic and driving a car becomes a very easy process. Eurhythmics develops this capacity to pay more close attention to what is happening in the class room.

In Eurhythmics, there are many games and exercises which teach students to pay attention and to captivate their interest. One of these is teaching them to listen to the music and to respond. thereby associating sound and movement:

One simple exercise used with beginning Dalcroze students is having the children tiptoe lightly when they hear the music and freeze in their places when they hear silence. When I first observed a class of four year-old children doing this exercise, I thought it was a bit too elementary. However, when I experimented with this musical game myself in an inner-city first-grade class and found that many of the children were unable to differentiate between sound and silence because of lack of exposure to this type of activity and poor listening habits, I began to use this exercise constantly (Willour, 1969, p. 73).

The main principle in this exercise is to use improvised music in order to avoid students learning by rote. “With improvised music, there is always change; repetition occurs only when the improviser desires it. Because the music is always changing and cannot, therefore, be learned by rote, the children are forced to listen constantly. Thus, listening is of primary importance from the very first lesson” (Willour, 1969, p. 73). And students will quickly learn to enjoy this active participatory method. In these exercises, growth occurs, because the “child is forced to listen in order to integrate his movement with what is happening at the piano” (Willour, 1969, p. 73). When children are active and creatively participating in the learning process, their interest is captivated, which in turn helps them to pay more close attention.

As in all Eurhythmics games, a variety of levels of complexity can be added to this exercise. For example, the students can be asked to mimic the dynamics of the music that is being played as well. Little by little, the aim of these games are to ensure that the “association between movement and sound ... be firmly established from the very beginning and the aural and physical response so wedded that the terms become synonymous. According to Findlay (1971), this outcome flows naturally from the two major activities which dominate the rhythm class – the creation of movements which accurately reflect sound patterns and the translation of movement patterns into sound patterns” (p. 59). Another level of complexity can be the variation of speed, which is a very effective way stimulating “lagging attention” (p. 59). Increasing levels of difficulty not only helps keep students' attention, "it also keeps them challenged and responsive. If certain aspects become too easy, they know they are no longer learning as their movements become automatic” (Schnebly-Black, 2004, p. 40). Increasing difficulty levels also helps the students gain in self-confidence and a feeling of self-fulfilment.

Dalcroze teachers are encouraged to use as few words as possible; this method can help “express clearly what is the most important. Each exercise proceeds to more and more difficult

variations, so that the student is not allowed to laps into automatic movement” (Schnebly-Black, 2004, p. 40). Willour (1969) expresses the delight in seeing the results of the listening exercises:

Gradually, the children learn (without being told directly) to keep in step with the music, to make their steps larger and heavier if the music becomes louder, to make smaller movements when the music is soft, to slow down or speed up if the tempo changes, and to have smooth motions when the music is legato and quick, light movements when it is staccato. The children become less and less dependent on copying the other children as they learn to listen more carefully. The freedom and beauty of movement and the creative way may approach their motions is delightful to see (p. 73).

What is happening on the profound level when a student learns to pay attention to the music, is that his listening abilities are increased as he or she learns to identify “what he *hears* with what he *does*” (Findlay, 1971, p. 2). This provides children with a great sense of creativity and accomplishment, especially when they were able to understand without having been told by the teacher what to do.

b. Concentrating

Concentration on what is happening in the present is not an easy task. Even as adults, we tend to let our minds wander during lectures or perhaps even while we are giving our own music lessons. In the learning process, concentration can seem difficult because there are so many new aspects one can concentrate on. Which aspect should the student choose?

Caldwell (1995) tell us, from his own experiences in teaching, that:

If a student can pay attention, then concentration is easier. However, the student often needs help to decide what piece of the incoming mass of information to highlight. My students sometimes say that they “just need to concentrate” when they are feeling scattered. When I ask them what they are concentrating on right now, they usually reply that they are “concentrating on concentrating!” Sometimes the student replies,

“I’m concentrating on the music.” When I ask what part of the music, for example, melody, words, rhythm, or harmony, the student says “All of it. Everything!” Many students have not learned to extract one part of the musical problem and bring it into their fields of awareness (p. 64).

Luckily, the Dalcroze method provides many exercises and games to help music students increase their capacity to concentrate. One of those exercises is the *Follow* game during which “the teacher plays 'follow the leader', by demonstrating a movement, or performing a pattern, or changing dynamics, while singing a tune; the student-follower must imitate the teacher’s activity, paying close attention to every change. The leader challenges the follower by varying patterns, movements, tempo and so on, at unexpected moments. Throughout these exercises, the elements of 'change' becomes the key to challenging the student’s attention and concentration” (Schnebly-Black, 2004, p. 39). In these games, participants are quickly lost if they don’t pay attention to what is happening in the present.

As we noted earlier, increasing levels of difficulty can be added one at a time to all Dalcroze games or exercises. Three games follow, a quick reaction, an interrupted canon and a (true) canon, each of which adds an increasing level of difficulty to the former:

A quick reaction exercise is the most fun, and may be at times frustrating or exciting... and often challenging. Students are asked to change their response at a given musical signal or verbal command. Sometimes two and three different signals or commands are established, and it isn’t surprising that confused students may burst into laughter.

An interrupted canon is an imitative response, like an echo.

In a [true] canon, the student responds to the teacher’s improvisation through imitation one measure later. This demanding task requires intense concentration, memory and alert faculties. One must perform one idea while hearing and trying to remember another. There is no limit to designing variations and extensions of these exercises for different ages levels and student abilities and needs (Mead, 1996, p. 40).

While the true canon may sound difficult, it is crucial for musicians to be able to be present at all levels, the past, present and future. While singing a melody, one must know where it came from, where we are at the present and what comes next in order to prepare for it. Thus, the true canon develops skills of concentration that are concrete and practical. Increasing its level of difficulty can be done by increasing the number of measures a student has to remember before performing them. The teacher can perform two, three, or even four measures that students have to repeat while the teacher performs yet a different set. Another very useful exercise is a game called interference. This exercise helps students increase their concentration ability to allow their internal ear to take precedence over any exterior interference. This game can be used to develop either pitch or rhythm, and is conducted as follows:

The exercise begins by having students execute a simple, steady pitch, pulse or rhythm. After a short period of time, the teacher begins to interfere by either singing or articulating a different and contrasting pitch, harmony, or rhythm. The challenge for students is to maintain the original pitch, rhythm, or pulse without being distracted by the interference. Such an exercise awakens the mind to the body, demanding focus on mental attention and physical execution by shutting out exterior sensory information (the interference). Thus, students learn to stay focused amongst distractions. Eventually students develop the ability to focus on their part while also listening to the interference. This skill is known as cooperative independence (Walker, 2007, p. 64).

An unforeseen result of high concentration ability is that levels of anxiety, often experienced in live performances, are greatly decreased. This is because anxiety is “reduced (1) when we know what we are doing and are able to concentrate on it, and (2) when we concentrate on what we are doing rather than how we are doing” (Caldwell, 1995, p., 64). Therefore, the importance of

teaching students to concentrate allows for not only a well-rounded musician but a well-grounded student in general.

c. Remembering

It is a well-known fact that students of any age have a difficulty in remembering. Teachers know that repetition is one of the major components of their lessons. Not only must students remember a particular aspect for a particular outcome, but “whatever is taught must be met and explored over and over again in new contexts and new musical examples” (Mead, 1996, p. 41). Caldwell (1995) has learned in his vocal and choral classes that when students are aware of what they are doing, then they can also remember what they did:

Many teachers have told me of experiences when a student has struggled with a passage and, finally, sings it well. The teacher, overcome with joy, exclaims, “There! Do that again!” And the student replies, “What?” The student was not paying attention to what she was doing. Remembering what was just done is the first step toward remembering what was done several minutes ago, which, in turn, leads to remembering what was done in last week’s lesson, and so on (p. 65).

In other words, if the student has managed to understand and act on a new concept, then you will know only for sure if the student has conquered the new technique only if he can remember how he did it before. Caldwell (1995) insists that if “you, the teacher, have “fixed” something and the student cannot duplicate the performance, with or without the corrections, you will almost certainly have to fix the problem at the next lesson” (p. 65). Thus, repetition becomes crucial in order to stabilise and internalise what has been learned. Eurhythmics games are full of repetition in order to make sure students have grasped the details of the assignment, especially in preparation

for the increasing levels of difficulty that will be added little by little throughout the course of the lesson. Repetition from class to class will also be incorporated so that the students remember and build on what they learned during the previous class.

Not only is movement a crucial component in Dalcroze Eurhythmics that helps the learning process, but it also helps with the memory process. The power of the body memory is far-reaching. This is why professional singers work on technique and expression during their practice time and then walk on stage trusting that everything has been memorised in their bodies. In addition, learning through physical movement “allows the body’s memory to help the brain learn and remember” (DeAmicis, 1999, p. 75) since the body’s memory is very powerful. Thus, physical activities have a two-fold purpose: they “focus student attention in the classroom” as well as “aid memory by encoding learning throughout the body’s neuromusculature” (Campbell, 2004, p. 65). In fact, the power of the memory is so strong, that when “a stimulus small enough to fit into short-term memory is observed, with attention, approximately seven times, it will enter long-term memory. If this process is repeated over a period of time (say, the stimulus is observed seven times a day for a period of five days) the long-term memory gradually becomes stronger and stronger—a 'permanent' memory” (Hugh, 1998). This provides another reason for students to incorporate what they learn during a lesson. In order to do so, they must notice what they have learned, and repeat it. These components exist in Eurhythmics games and exercises, which allow not only for a fast development but also for a long-term retention.

Many studies have been carried out regarding the memory during action to elucidate what happens in the brain while, for example, a musician is practising. Studies “of violin players by Thomas Elbert have shown that the region of the brain responsible for moving the left hand – the hand that requires the most precision in violin playing – increases in size as a result of practice” (Levitin, 2006, p. 195). In another study entitled *Cerveau et la musique* (1998) (brain and music),

researchers placed probes on a young violinist's head and studied the reactions of the brain while he was playing. They noticed that new conducts were being created while the musician was playing. If he made a mistake, a new conduct had been made 'engraving' that mistake in his memory. Thus, if he repeated that passage, he would repeat it with the mistake. This is why it is so important to 'erase' all mistakes immediately. In addition, a new correct conduct needs to be created to replace the old incorrect one. In order to do so, one must play or sing the passage correctly many times (3 times according to *Cerveau et la musique* and 7 according to Hugh, 1998).

d. Reproducing (or Modeling)

Dalcroze was very emphatic about the necessity for students to learn how to reproduce – or model – rhythms and sounds. This component completes the students' ear-training program as, in addition to being able to recognise what they hear, they learn how to reproduce it back to the teacher. Dalcroze (1930) linked this reproduction ability to both muscular and nervous systems and said they "should be so formed and developed that the body may be capable of reproducing any rhythmical movement whatsoever" (p. 361). On the other hand, Caldwell (1995), who has years of experience in teaching voice and choir by using Dalcroze Eurhythmics remarks how difficult it can be for beginning students to reproduce a passage only a few measures long. It demands that students be aware as well as remember not only what was performed (notes, melody, rhythm, dynamics) but also how it was performed (using which techniques for example). "A student's first attempts to imitate the teacher's performance" he says "are usually crude and self-conscious. You, the teacher, must also be able to exactly replicate your performance several times in order for the student to be able to comprehend what you are doing (yes, the *teacher* has to remember as well as the student)" (p. 65). An exercise which helps students pay attention,

remember and reproduce as well is the canon and the interrupted canon, which we introduced above.

e. Expressing

Expression is the ultimate goal of musical knowledge. It is the result of students' education and encompasses everything they have learned, incorporated and integrated. Expression is what will emerge in a recital, concert or performance. Again, one must not forget that the body lies at the source of this musical expression as it is the “means” itself by which one expresses music as well as being the “source” wherein lie all human emotions, which are then “translated into musical motion” (Jeong, 2005, p. 19). Thus, after developing one’s attentive ear, one’s kinesthetic senses, the student is then ready for expression as the ensuing result. Indeed, for Dalcroze, in addition to “the development of the inner ear, [and] an inner muscular sense, creative expression [is also at] the core of basic musicianship” (Mead, 1996, p. 39). In many educational systems, learning how to be an expressive musician does not even take place in the classroom or lesson. Many vocal teachers focus exclusively on teaching technique. Yet, apart from those students who possess a certain talent towards expressiveness, this method often produces singers who, at their recital, stand straight and stiff and sing without any emotional expression, either in their eyes, or in their limbs. We all know how uninteresting such a performance can be for the audience. Musical knowledge, technique and therefore bare without musicality and emotional expression.

In Dalcroze Eurhythmics, expression is an integral part of the learning process, not just something to add on once technique has been mastered. When students learn to express sounds they *hear* with their bodies, it will be very natural for them to express sounds they *produce* with their bodies fully engaged. Indeed, in her experience, Mead (1996) found that the “Dalcroze’s ear-training ‘games’ sharpened the students’ perception and resulted in a more sensitive response

to the musical elements of performance: timing, articulation, tone quality, phrase feeling” (p. 38). Because being expressive does not come naturally to all, it is important to begin training students to learn this aspect of musicality as soon as possible. In fact, all humans express their feelings naturally with “postures, gestures, and movement of various kinds” while they are speaking. On the other hand, during a vocal performance, some of these gestures “are automatic, some are spontaneous, and others are the result of thought and will” (Jeong, 2005, p. 19). Still other gestures and bodily movements will be the result of training and self-confidence. This self-confidence will then allow for a greater “freedom of expression, which is a cardinal principle in Eurhythmics” as it “stimulates the creative impulse in every department of musical learning” (Findlay, 1971, p 2). Because personal expression is an integral part of Eurhythmics, students develop the self-confidence to be expressive and they will develop a deep understanding of why it is necessary to be expressive. In fact, if they are taught well, they will not be able to perform *without* being expressive.

According to Anne Farber and Lisa Parker (1987), two long-time Dalcroze teachers at the Longy School of Music in Boston, the Dalcroze method employs a practical physical method to learn musical expression because, in its exercises:

the body is trained to be the instrument, not of the performance of Eurhythmics, but of the perception of music. The body is understood as the original musical instrument, the one through which everyone first realizes music in both its senses: apprehending and creating, and the primary, personal, trainable utensil for musical understanding and production. The movements a student makes in a Eurhythmics class do not have the essential purpose of training a body to convey a choreographic picture to an audience. Rather, their essential purpose is to convey information back to the mover himself. The movements should set up a circuit of information and response moving continuously between brain and body, which, with training and experience, rise to even higher levels of precision, coordination, and expressive power (p. 45).

When the body is considered as the main instrument and that movement to music increases students' understanding of what the music is expressing, it is an empowering experience which, when applied to learning every piece of music, increases our decisions about how to convey the emotions in performance. Thus, we discover that movement is not only a learning technique but also the “basis for the development of musical literacy, for creative expression, and for experiencing the totality of the musical arts” (Woods, 1985, p. 35). Regarding the greatest performers, Caldwell, remarks that it is their “ability to move sounds through space” which is at the root of their “expressive techniques” (1995, p. 5). In this regard, a student who won a scholarship to attend a Dalcroze training remarked that the “workshop was stimulating and creative in every aspect. This eye-opening experience helped me to understand how music could be experienced, understood, and expressed through all possible body sense, and it quickly made my own musical performance more expressive” (Lin, 2007, p. 16). Thus, bodily movement is again the source of profound learning.

Having concluded the fundamentals of the Jaques-Dalcroze method with the overview of its basic principles, we will now turn towards its practical application. Thus we move from the internalising process into its externalising, from how to express with our bodies the music we hear, to how to use our bodies to express what we perform.

4. Dalcroze Solfège and Improvisation

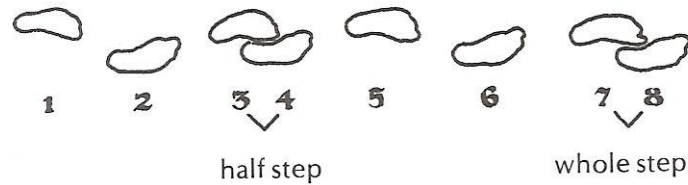
Dalcroze's education method includes, in addition to Eurhythmics, solfège and improvisation. These three components of his method produce musicians who know music from a kinesthetic point of view, who can sight-sing and gain a deep knowledge of harmony, and who also have the ability to improvise at their instrument. These two additions to Eurhythmics allow for a true musician, one who knows and can apply the knowledge in practice. Otherwise, in other

systems, how many piano students can end up studying music theory without ever applying it to their instrument. In fact, if Dalcroze developed his system, it is partially because he realised his students could not even hear the harmonies they were writing down in assignments. All three components can be intertwined.

While the topic of improvisation is an important aspect of the Dalcroze method, it is out of the scope of this paper. Nevertheless, it is useful to briefly talk about solfège because solfège is so close to the singer's tools. Thus, for example, solfège can be combined with kinesthetics when students are taught scales and asked to move their hands in a specific way or even to step a scale in order to “physically represent the motion of a scale” (Walker, 2007, p. 71). Christina Walker (2007) explains that, because each scale has its “unique sound due to the organization of whole and half steps in comparison to the surrounding whole steps” this helps create “specific melodic tensions and resolutions”. “One of the first concepts learned in a Eurhythmics solfège class [she continues]:

is the difference between half and whole steps. Students often choose hand motions that differentiate these two intervals – the motion of a whole step being larger than that of a half step (p.71)

The kinesthetic approach helps teach intervals and scales as students use movement while singing the notes. This usage of movement to learn about scales helps students to incorporate “the visual, aural, and kinesthetic aspects of music by means of a concrete, physical motion” (Walker, 2007, p. 71). After using their hands and arms, students learn how to build the scale with the movement of their feet which will help them to incorporate the knowledge in their body more fully. The following diagram illustrates this process (please note the error: between 7 and 8 which is also a half step):



Findlay (1971) tells us that “as soon as the children have mastered the progression, they should be asked to *sing* (emphasis added) the scale as they move, so that the association of sound and movement takes place as rapidly as possible... Eventually students can distinguish and physically represent the unique qualities of melody based on their understanding of how scales are organized and move”(p. 71). In this particular exercise, “children can later be asked to create simple stepwise melodies, such as 1234321 or 4567878. So real does this make the abstract concept that in no time at all the children are able to sing and hear these steps quite accurately” (p. 50).

This activity can then be transposed to learning melodies. Just as in stepping the scale, children “enjoy stepping a melody, walking backward or forward as the melodic direction changes” (Findlay, 1971, p. 49). It helps to have children hold hands while they form a straight line as they often have difficulty in the beginning not only to distinguish which notes go up and which go down, but also to adjust their body movement to the melody. Nevertheless, after training and practice, they are soon able to even “anticipate the moment when the melodic direction is about to change” (Findlay, 1971, p. 49). Another added difficulty to this exercise would then be for the teacher to improvise a melody while all are stepping it. In order to go to the next step, the teacher can then ask each student in turn to improvise a melody that all can step. This is one method voice students can use when learning a new piece, so that they can feel the direction of the piece they will perform.

5. Application of the Method to Musical Instruments

The Dalcroze method, with its major kinesthetic approach, can be applied to the learning of any musical instrument. In fact, because our bodies *are* the instrument, Dalcroze students have trained their kinesthetic senses to express music in any form and with any instrument. In this way, it becomes much easier for them to apply their knowledge and skills to an exterior instrument than with other methods where students begin directly at their instrument without any previous musical training. Learning away from the instrument is what Dalcroze had in mind when he “encouraged his students to discover the music within themselves” as a means to build enthusiasm and motivation for music as a whole. Once the student approaches their instrument, Dalcroze sees the necessity for students to learn to improvise very fast. In this regard, he encourages students to “express themselves musically through ... improvisation as they might express an idea through speech, an emotion through gesture, or a picture through painting” (Mead, 1996, p. 38). This concept – of using the instrument to express themselves – enriches students’ perceptions and “can be the real awakening of musical understanding and interest in students” (Mead, 1996, p. 38). For vocal students, the Dalcroze method is highly effective, because the body is everyone's instrument to begin with. While all Dalcroze students learn to express music through their body, singers have an advantage of having already developed their inner instrument.

In addition to motivation and enthusiasm, what exactly are the Eurhythmics aspects which are transferred to the instrument? Once students approach their instrument, it is similar to transferring “from the global – the whole body – to just part of the body” (Thomsen, 2007, p. 15). Thomsen continues to explain that the learning process can be likened to gaining “a repertoire of sensations” which students can then apply, when sitting at a piano, for example, as they “bring the sensation that was with the whole body just to the finger” (p. 15). Galvao (1999) explains that “playing a musical instrument involves the accurate execution of fine motor movements” which are “highly dependent upon kinesthetic information reaching the central nervous system. There is

both clinical and experimental evidence to suggest that control and perception of movements are very weak when the kinesthetic channel is not working adequately” (p. 136). Many body movements are used to learn musical concepts, or rather to *feel* the musical concepts, which are then transferred to the instrument. Julia Schnebly-Black (2004), a leading Dalcroze teacher and author, remarks that the “central idea is that the music itself is the goal; the instrument is the means of getting there.” Too often, she continues, we “lose the music in being concerned with the instrument. Time spent in movement activities, away from the instrument, should be seen as an efficient learning mode, getting straight to the heart of musical expression and yielding great dividends in musical performance and appreciation” (p. 37). For example, I have witnessed with my young piano students that if we first sing a song, walk it and clap it, then by the time students sit it at the piano to play it, they already know the rhythm of the song and don’t need to stumble over quarter notes or half notes, they automatically play them without having to think about the value of each note. Thus, a deeper understanding of the piece itself can be learned away from the instrument before trying to play it at the piano, for example.

In fact, rhythm and movement exercises away from the instrument are very useful for all levels of students. Eurhythmics allows students to learn bodily coordination and to master various muscles at increasing levels of complexity which helps musicians who require “instrumental skills where coordinations are difficult and specialized” (Findlay, 1971, p. 2). This is because “physical coordinations developed in the well-directed rhythm class give the individual power to control his movements in related activities” (Findlay, 1971, p. 2). More and more schools are recognizing the power of kinesthetics on the learning process and its application to musical instruments. For example, music teachers “who follow the principles of the Alexander Technique pay special attention to kinesthetic sense” as well. A wonderful example in case is that of the deaf percussionist Evelyn Glennie who was able to become a high-level musician because he or she

had previously developed his “kinesthetic awareness” (Galvao, 1999, p. 135). Thus, the hearing sense is not, contrary to general belief, the only sense that can help make a good musician. If we can learn music through our kinesthetic sense and do rhythm and movement exercises away from our instrument, even a deaf person can apply it to an instrument.

6. Application of the Dalcroze Method to the Voice²

With other instruments, the Eurhythmics learning process begins away from the instrument. This is not the case with singing as we can sing along while learning scales and doing other Eurhythmics activities, where expression will be combined with singing. This is different from “much of today’s vocal training [which] is similar to horse-drawn wagons in that we teachers and performers have the cart before the horse: the cart is the vocal mechanism, diction and so on; the horse represents the sensibilities and emotional expressiveness of the composer and performer that inform and lead the technique. We need both the cart and the horse to get anywhere, but having the card *behind* the horse makes for an easier journey” (Caldwell, 1995, p. 5). As we saw above, musical ability is not the same as technique. In this regard, Dalcroze “became convinced that successful teaching inculcates musical behaviors in addition to technical skills and literature” (Caldwell, 1995, p. 63). While there are many technical aspects to singing, we will limit ourselves here to four specific aspects, those of breath, phrasing, articulation (dynamics). We will then address issues of vocal technique in the following chapter.

a. Breathing

² So far, Timothy Caldwell seems to be the specialist in regards to Dalcroze Eurhythmics and the voice. I have therefore leaned heavily on his research and findings to cover the technical aspects of Dalcroze Eurhythmics to the singing voice.

To breathe is to be alive. A Dalcroze student Jae-Eun Jeong (2005) remarks how breathing not only is “an indispensable but unconscious exercise for the human” but that we can also find “the qualities of rhythm through the breathing process” (p. 21). “Breath is life” says Dalcroze (1921) and breath is also rhythm (p. 186). Related to the concept of breath is that one of breath’s “essential qualities – if not the essential quality of rhythm – is its power of conveying the presence of life” (p. 186). In addition to breath being life and rhythm, breath is perhaps our strongest kinesthetic sense. We know this by the importance yoga schools place on breathing. Self-awareness of breathing, especially for singing, is paramount. Heather Buchanan (2005) describes how to go about learning self-awareness in regards to our breathing. She provides us with ways of being internally aware. When we breath, she says, we can try to “describe the process” (p. 99), in other words, endeavour to feel how our body functions while we inhale and then exhale. As any form of musician, be it singer or pianist or violinist, breathing is an integrative part of music. Indeed, it is “as necessary to the understanding of musical phrasing as to its execution, especially, for instance in the case of sung music or the connective relationships between prosody and melody” (Bachmann, 1991, p. 154). Once we are aware of how we breathe, we need to make sure that this is in fact the correct way of breathing because we might have some habits we consider natural but which we have distorted over time. Thus, breathing should be like a “wave-like motion from top to bottom on inhalation and exhalation” (Buchanan, 2005, p. 99). Breathing, in the Dalcroze sense, helps us increase our musicality by learning how to breath before singing a phrase. After all, as Marie-Laure Bachmann states (1991), respiration is in itself the “very essence of musical production (as in singing and the playing of wind instruments)” therefore “its mastery necessarily underlies all instrumental performance” (p. 154). Therefore, breathing is not only a technique for singers, but a part of every musician's performance.

Singers especially, need to strongly develop their understanding of breathing linked with rhythm. Robert Abramson (1980), in his book *Rhythm games for perception & cognition*, provides very good exercises to help students learn how to breathe rhythmically:

- (1) First, sit upright in a state of relaxation, eyes closed. Inhale for seven moderate tempo counts, pause for one count, exhale for seven counts, then pause for one count. Repeat the whole exercise until the rhythm becomes easy: 7-1, 7-1, 7-1. Focus on the rhythm of the breathing, the holding, the exhaling, the waiting. This rhythm flows and pulses through all music phrases and sentences. Try this process with a new phrasing (3-1, 3-1, 3-1) to feel phrases of different lengths
- (2) Inhibit your breathing to get an inner feeling of duration. Exhale all your air. Inhale for eight slow counts. Now hold your breath for eight counts. Can you feel the eight-count rhythm even when you are holding your breath?
- (3) Try a faster tempo with short breaths, then a slower tempo with longer breaths. Investigate the qualities of loud and soft breathing (p. 63).

Another aspect which is important in the notion of breathing is the concept of time-space-energy. For example, when Eurhythmics students first learn about intervals, they learn that it is the *distance* from one note to another. Walker (2007) explains that “space is suggested” in using the concept of *distance*. While “music notation does have a spatial element, this ‘space’ is an abstraction of the two pitches of an interval” (p. 70-71). Singers must realise there is space between two notes or else they can sing two separate pitches, with nothing in between, no life, no breath. Instead, singers need to feel that the two notes are connected and that the distance between them needs to be filled with breath and energy. Thus,

in a Eurhythmics class, students move a hand through the air from one point to the next as an embodied representation of the movement from one pitch in an interval to the next pitch. When students are first learning about intervals, scales, and melody, movement of the hand allows them to *feel* the difference in size *between* one interval and another. This physical motion incorporates all the concrete aspects of an interval:

the beginning and ending notes, the distance between them, and the character of the motion (pp. 70-71).

Singing is in fact, according to my voice teacher, Kathleen Van de Graaff, “riding the air” from one note to the next. Thus, there is the movement of the breath, and there is energy which flows without interruption. By using the hand to show that movement from one note to the next, be it pianissimo, forte, be it a sad or happy passage, using the hand to express those dynamics and emotions help singers to feel the intervals, to fill them with energy and expression.

While trying to breathe through and beyond the notes, here is an interesting singing exercise that Caldwell (1993) offers, and which helps us increase our musicality in singing (pp. 101-102):



This exercise is out of the ordinary because it makes the singer breathe at an unusual moment.

Thus, attention must be kept during the exercise and students have to ensure they will have enough breath to last until the end of the phrase. In addition, singers need to learn that the high notes are not in fact 'high', that they are low in the body, at the very source of the breath.

Therefore, to reach high notes, especially when singing an upward interval, it is easier to bend the knees quickly in order to feel the weight of the breath. This in turn helps the breath to fly upward without any tension and is a perfect example of how kinesthetic awareness can affect sound and even more important, the quality of the sound. Beginner voice students, if they do not bend their knees, will tend to push on the breath at their throat – which then produces a tense and pushed sound – because they think the high notes are placed high within the body. By learning that singing is about low breathing and that all notes originate from deep down in the body.

Another kinesthetic exercise which helps produce a better sound is to relax the body completely by bending over while singing. In this position, the student cannot think that the notes are high because his body is bent over. In this position, singers can but release muscles which could otherwise be tense. In learning to sing with relaxed musculature, when the student slowly rises again, the body will incorporate what it has just learned and the student can continue singing on a breath that is free from interference (Stuber, 2005)³. Dalcroze sums up this notion of singing on the breath when he notes that the “technique of respiration does not consist merely in overcoming breathlessness... It assures the preparation, cessation, and continuation of gestures, the shading of sensations, sentiments, and heartfelt emotions, the phrasing and scansion⁴ of successive actions” (Bachman, 1991, p. 154). While learning about breathing is important for all musicians, its highest application is found within the singer.

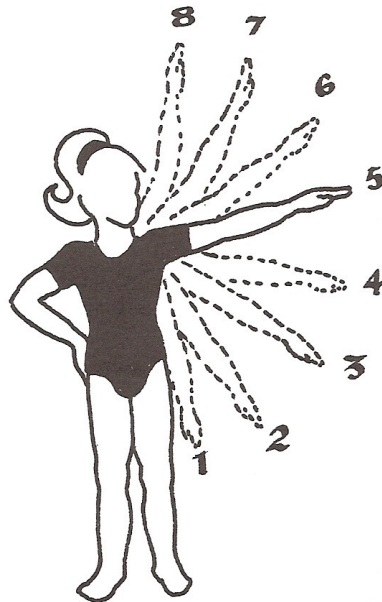
When a singer concentrates on the expression of his muscles – arm gestures, bodily movement – in order to express the music, he or she will also gain in quality of sound. Voice teachers often tell their students to focus on expressing the emotions in the text, to think of an imagery that will express a certain emotion because the “vocal apparatus is surrounded by nerves which spontaneously reflect your most intimate thoughts” (Burgin, 1973, p. 24). Because Dalcroze students have learned to be expressive away from their instrument, it is easier to incorporate their knowledge with their instrument. Thus, singers who have gained in expression in their Eurhythmics classes will find it easier to be expressive when singing as well.

b. Phrasing

³ This exercise was shown at a Eutonia workshop at the University of Ottawa, conducted by Ursula Stuber, from 4 to 6 November, 2005.

⁴ Definition: the analysis of verse to show its meter. Webster’s II New Riverside University Dictionary.

Learning phrasing with the body can be quite fun for students. There are endless games and exercises to help them learn to listen more attentively to the phrasing of the music as well as feeling the phrasing in their bodies and muscles. In regard to singing, students can “outline a melody contour with their hands, bodies, or on the blackboard. They become sensitive to phrases in many ways, such as learning to change the directions of their motions at the end of a phrase (Willour, 1969, p. 74). As noted earlier, students can incorporate the phrasing from the first to the last note of a melody by raising the arm from one note to the next. They can also vary the levels of energy to that same movement. Here is an example of an exercise which students can do to increase their awareness of various dynamics that can be expressed from one note to the next. The initial exercise consists of singing the scale and placing one's arm at a determined place for each note on the scale. Once this is mastered, the teacher can ask them to add phrasing to a specific melody which they need to depict in this manner (taken from Findlay, 1974, p. 52)



We can see from the photo that the position 5 will be a strong one (though it could perhaps be more horizontal as position 5 in a scale is very solid. This could be accomplished by decreasing

the spaces between 3 and 4 and between 7 and 8, which would also depict the semi-tones more closely). Once phrasing exercises are mastered, one can add a level of complexity and have the students combine breathing and phrasing. For example, the teacher can ask the students to breath “in time to the phrase rhythms while the teacher recites some lines from a poem [or a song]. Then, adding another level of complexity, the students can do the same thing but this time by hearing the words [or song] in one’s head while measuring their breathing” (Abramson, 1980, p. 63). These exercises, Abramson (1980) notes, “should give a feeling and memory guide for keeping track of phrasing and climax that are imperative to a clear improvised performance. They produce a sense of balance and clarity of expressions” (p. 63).

Another very good exercise to learn phrasing is to distribute scarves to the students, which they will wave back and forth to feel legato lines. The teacher can ask the students to wave either with force or very softly to feel a forte or pianissimo legato line. Julia Schnebly-Black (2004) also likes the scarves as she finds they are an “excellent medium for feeling a rubato passage. Consider the *delicatissimo* passages in the Chopin Nocturne in A-flat, Op. 32, No. 2. Tossing the scarf up in the air and sensing the *rallentando* of the descent can help a student accomplish a more sensitive performance of rhythmic nuance” (pp. 33-34). If the teacher doesn’t have any scarves, telling the students to use their arms can produce similar results, though perhaps without as much visual effect. In fact, swinging the arm up and away from one's shoulders helps the voice follow the legato expression used in the arm. Likewise, by adding energy to that arm movement, the voice will automatically follow and add more tone. The power of the body in increasing one’s musicality is forever startling. The more we learn with Dalcroze Eurhythmics, the more we notice how important it is to increase self-awareness of our body and our muscles. Dalcroze (1924) himself tells us that to “be master of one’s body, in all its relations with the intellect and with the senses, is to break down the oppositions which paralyse the free development of one’s powers of

imagination and creation” (p. 30). As creativity is an integral part of musicality, becoming the master of one's body seems all the more important.

c. Articulation/Dynamics

In everyday language, we understand articulation as diction. But for Dalcrozians, Caldwell (1995) defines articulation as being the “sense of movement between the pitches and what happens as the pitch is attacked, how it is sustained, and finally how it is release as the voice moves to another pitch. Articulation is closely related to plasticity” (p. 104). Musical terms that denote articulation, Caldwell (1995) notes, include, “legato, sostenuto, staccato, marcato” while the level of energy required are “tranquillo, forte, piano, leggiero, pesante” and so forth. In brief, articulation “refers to the way a note is attacked, the quality of the duration, and its eventual release” (p. 129). As to dynamics, which is similar to articulation, Elsa Findlay (1971) defines them by using terms related to muscle energy, and is therefore fitting to quote it in full:

“Dynamics ... refers to the varying degrees of muscular energy in the body. In life, these degrees of energy reflect different expressions and moods. In anger, for instance, the muscles contract vigorously; in sadness, they relax. This bodily manifestation of a mood is reflected in music. It follows logically, then, that a thorough study of dynamics in movement is a sound and natural approach to its counterpart in music. The recreation of a mood will be intensified by the prior experience of a clear and articulate physical response (p. 9).

In other words, it seems that dynamics are the energy levels, the emotions within, that help us produce a variety of articulations. The link between articulations and dynamics must therefore be learned so that we can feel the correct level energy required to sing, for example, a legato and pesante melody. Thus, Findlay’s description expresses the general Dalcrozian approach because it demonstrates how the body comes first, how we must find musicality in the body before we can

“use our instrument/voice” to express that emotion with increased awareness and superior, finely tuned ability. In singing per se, the muscles of the arm, for example, are of crucial importance in addition to self-awareness about the energetic details of all arm movements, especially in regards to the dynamics required in the piece. Bachmann (1991) states how the “effect of dynamics in music is to vary shades of strength and gentleness, the heaviness or lightness of sounds, whether effected without transition, i.e., by sudden opposition, or progressively, i.e. by crescendo and decrescendo” (p. 148). Different shades of dynamics will be felt differently in the body.

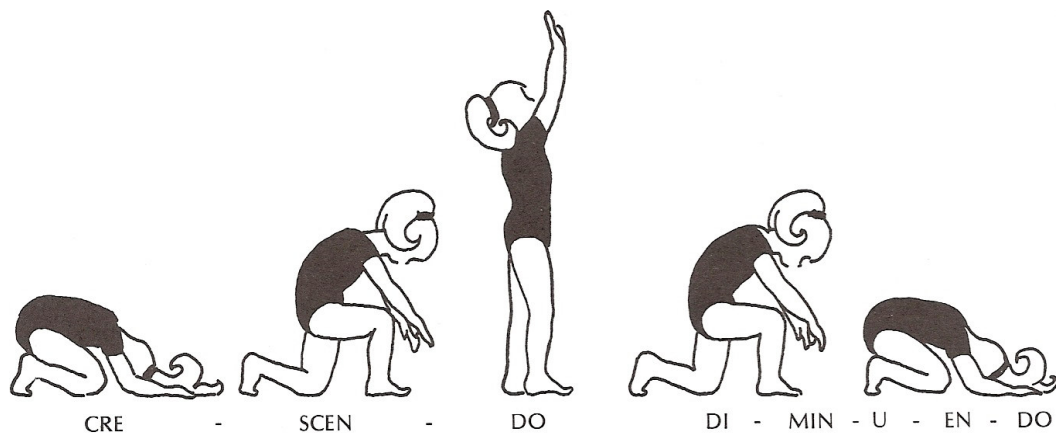
The relationship between body musculature and dynamics in order to express articulation in a piece of music, is defined by Dalcroze (1930). Referring to opera classes, he mentions the importance of thoroughly studying “the relations between songs and words, between musical feeling and sound expression, between the sense of sounds and dynamics and the muscular sense which gives sensibility and vibration to the entire organism” (p. 146). This is why singers (or any other musician) should not wait until the performance to begin expressing themselves with arms, hands and body movements. Singers need to regularly practice as if they were performing; they need to sing with expression, and with muscular dynamics. The muscles required for a performance need to be engaged during all the practising hours so that we train our bodies and voice with the proper amount of expression.

As to developing the art of dynamics and articulation using the Dalcroze method, here are a few examples of useful exercises:

Teaching children the difference between staccato and legato is quite easy. One can play on the piano or on a recorder some staccato notes and ask them to hop around as if the floor was very very hot. Then when one switches to legato, they must drag their feet as if the floor was very muddy or if they were dragging their feet in the sand. They usually catch on to this exercise very quickly. Meanwhile, it is also beneficial to ask them to feel the dynamics in their arms as well, in

such a way that it is not only their legs that are expressing the staccato or legato, but their whole body.

Another efficient exercise is having students use their body to learn a gradual crescendo and decrescendo (it is otherwise so easy for students (including adults), to go from triple piano to piano then suddenly augment to a mezzo forte). By doing the following exercise with the body, students learn that, when a gradual crescendo is written, then it must necessarily be expressed in a *gradual* process (drawing taken from Findlay, 1971, p. 11).



1

Findlay (1971) uses this exercise about dynamics by telling the students to express a thunderstorm, from its beginning to when it subsides. The thunderstorm could also arrive quickly or subside more quickly than it arrived. All variations are possible. Then, after the students practice this variety of motions by following improvised music at the piano, I would suggest they sing along so that their voices can follow what their bodies are doing. As a further exercise, they can also be asked to improvise their own melody while adding variety to the dynamics (from forte to piano or forte to mezzo forte back to forte down to piano up to forte, etc.) (p. 11).

Another form of articulation is the legato/staccato/tenuto ‘family’. Caldwell (1995) provides some exercises which combine increasing breath capacity with practising articulation (pp. 101-102). I would suggest that students be asked to mime these exercises before singing them so that

their body learns the articulations before applying it to their instrument. This can be done first with only arm movements, then by using the entire body.

Changing articulations within one breath is instructive as well. Be sure to vary the tempo with each repetition.

Three musical staves in 4/4 time, each with five 'fa' syllables above the notes. Staff 1: 'fa fa fa fa fa' with a slur under the first two notes and accents on the last three. Staff 2: 'fa fa fa fa fa' with a slur under the first two notes and accents on the last three. Staff 3: 'fa fa fa fa fa' with a slur under the first two notes and accents on the last three.

A level of difficulty can be added by combining two families of dynamics as shown in the following example, by adding crescendos or decrescendos to the above exercise (Caldwell, 1995, p. 102):

Two musical staves in 4/4 time. The top staff has five 'fa' syllables above the notes with a decrescendo hairpin above it. The bottom staff has five 'fa' syllables above the notes with a crescendo hairpin below it.

Expressing various moods with all parts of the body, paying special attention to the inner kinesthetic feeling of how the muscles are employed, is a thorough way of learning dynamics.

Caldwell (1995) provides a list of different moods which he then asks his students to practice adapting their piece of music to the different moods, irrespective of the original mood of their piece (p. 168):

arrogant	proud	cowardly
brave	excited	dejected
bubbly	sensual	bold
eager	longing	relieved
ecstatic	haughty	humble
giddy	angry	happy
melancholy	confused	sadly
passionate	penitent	avaricious
pious	fervent	remorseful
sexy	lustful	suspicious
vengeful	cynical	sarcastic
vindictive	hopeful	ardent

With these few examples, we can see the effect of the Dalcroze method will have on students learning to be expressive with their bodies. By learning to embody (literally) all types of dynamics, singers will be better equipped to apply their kinesthetic knowledge to their signing. Dalcroze himself wrote that when “the instrument selected for musical interpretation [is] the human body in its entirety, it follows that this body must have developed a perfect understanding of all its muscular possibilities, and be capable of deliberately bringing them into effect” (Bachmann, 1991, p. 148). Therefore, the entire body must be trained. Music students must learn to enhance their kinesthetic sense in order to be able to use their body while singing. When this is acquired, learning vocal technique will be much easier and will come more naturally. It is important to note that this approach is radically different from other music education approaches where vocal technique is taught almost to the exclusion of all other musical aspects.

7. Issues of Technique

Teaching voice students with the Dalcroze Eurhythmics method will ensure that they will learn to master their bodies as well as their expressive abilities before even approaching vocal technique. As demonstrated by a comment made by one of Caldwell's students: "Technique ... served to *illuminate* [italics added] the expressive elements of the music instead of calling attention to itself" (Caldwell, 1995, p. 7). In fact, by learning to be expressive first, especially when the children are young with less inhibitions, by the time they begin vocal technique per se, they will intrinsically know why expression is so important. It is much easier for a Dalcroze student to be expressive in a concert or recital – a welcomed difference in comparison to students who think of technique first and end up singing with a stiff body, which, in turn, in fact, will hinder their technique. In his teaching experience, Caldwell (1995) has witnessed how teaching students to express the song can in fact address issues of technique and improve them. He encourages teachers to "introduce affect as early as possible in the learning process". He poses an interesting question: "does physical gesture cause or motivate affect, or does affect inform the physical gesture (in this case the term includes the response of the vocal mechanism)" (pp 108-109)? Perhaps it is a mixture of both, both gesture and affect need to be present in order for the emotion to be fully present.

Students will find that, when asked to sing with the focus on expressing the music, not only do gestures seem to emerge naturally, but the body seems to respond as well, both on the level of emotional expression as well as with better technique. Is it, as Caldwell asks, because the vocal mechanism follows bodily gestures? Or is it because, as we focus on being expressive, our mind is freed from the worries of performing with perfect technique, thereby allowing technique to emerge of its own? If technique does emerge of its own, it would be thanks to the body's

memory and intelligence – thereby allowing the voice follow its directives. It can often be more productive to use our kinesthetic intelligence than to have our minds attempt, for example, to eliminate the fear of singing a long and sustained high A. Similarly, Caldwell (1995) believes that when we think of what we are expressing, instead of thinking “Oh, no, here comes the high note”, even though we know the high note is approaching, our body will instead prepare itself for the affect (p. 109). So vital is the need to focus on mental and kinesthetic expressiveness in order to resolve issues of technique, that the type of expression aimed for needs to be the ‘correct’ one. Caldwell (1995) gives us the example of a student who could not sing through a difficult passage, even though he was trying to sing it as a “happy” passage. Both teacher and student had almost given up when the pianist suggested the voice student try the same passage with the thought of “jolly” instead. Instantly, the difficult passage was conquered and the technique problem disappeared (p. 109).

Another effective kinesthetic exercise is to wave the hand above the head from left to right, in order to produce a nice phrasing. During this exercise, it is not enough to loosely wave the hand; rather one must wave the hand with energy, as if one were an actor on stage and using the body to express the emotion. Waving the hand thus will also engage the upper body and help produce a better tone quality and expressive sound. In general, Dalcroze (1924) tells us that we should “disdain no method of enriching this body’s technical means of expression” and that it is effective to use “body in motion as a direct interpreter of human emotions” (p. 27). Thus, because we involve the body, the brain and its fears are less able to take control of the final product. Indeed, many of the testimonials speak of how Eurhythmics eliminated the nervous energy and allowed smoothness of movement and clarity of thought: “the thinking brain was no longer leading; the mind and body were moving as one” (Walker, 2007, p. 86). In fact, we need to rely

more heavily on the body's intelligence, because our brain can interfere with thoughts that can instead hinder our musical production, such as fears or nervousness.

While kinesthetics has a positive effect on the mind, it can even help the mind understand certain academic concepts. Thus, Marta Sanchez, founder of the Carnegie Mellon Dalcroze Training Center, was quoted as saying that through Eurhythmics she gained an understanding of music that music theory classes had not given her. Her understanding was “on a more intuitive and feeling level combined with the intellectual” (Walker, 2007, pp. 86-87). Other comments mention increased concentration, improved listening skills, greater musical sensitivity, more confidence, and happiness (Walker, 2007, pp. 86-87). In brief, because kinesthetics enriches the musician’s understanding and performances in general, whether at the instrument or with one’s voice, experience has shown that it is best to incorporate Eurhythmics training in every musical student’s curriculum in order to help them become a well-rounded musician.

8. Conclusion

In this paper I endeavoured to show how the Dalcroze music education method can be applied to the study of voice. I offered a brief summary of the Dalcroze method and discussed found major aspects of the Dalcroze method: kinesthetics, rhythm, movement, and the concept of time-space-energy. I then analysed the effect of Eurhythmics on the learning process by focussing on issues such as paying attention, concentration, memory, reproduction and expression. After examining how the method can be applied to music instruments in general, I then delved into more detail regarding the use of Eurhythmics while studying voice. I focussed on three major components of singing such as breathing, phrasing, as well as articulation/dynamics.

Because of the nature of Eurhythmics, the development of body muscles for the expression of music, I found that the method applies itself very well to learning how to sing, especially since

the body is the musician's first instrument and is the singer's main instrument as well. That both coincide, in contrast to a pianist playing an external instrument, is highly beneficial. Many exercises destined for all musicians can be directly applicable to the singers' understanding of their instrument, the voice. Furthermore, because the body is also the singer's instrument, many Eurhythmics exercises can be applied to improving voice technique. The link between Eurhythmics and learning to sing is thus more direct. Pianists who learn about breathing before a phrase through Eurhythmics games will need to apply it in a different way once they sit at the piano. But singers will be able to apply it directly to their instrument without having to modify their learning in any way. Thus, Dalcroze Eurhythmics is a highly effective method to teach music to voice students, providing them with a well-rounded education: Eurhythmics, solfège, and issues relating to the learning of voice.

I also gave examples showing the effect of kinesthetic activities on the learning process, especially in comparison to other non-movement methods where learning unfortunately often becomes increasingly intellectualised as students move into higher grades. I believe that when physical as well as artistic training are combined, then the student's musicality is enhanced, for one cannot sing with one's mental capacities alone. In order to improve their musicality, singers must have knowledge about their inner muscles, use their kinesthetic sense and deploy the necessary muscles to contribute to musical expression (Naumberg, 1914). As I have endeavoured to prove in my present research, when all these aspects are combined, when singers learn to develop and perfect all these aspects, when they go through the physical training (as an athlete would), any singer's expressiveness will increase in quality as well as their understanding of the music itself. In other words, we must ensure that music students have the opportunity to learn about music through many different channels. Campbell (2004) believes that "with fewer opportunities for active, participatory learning, many [students] become apathetic due to passive and abstract

instruction” (p. 65). In order to avoid such pitfalls, it is important to remember that, in addition to the benefits of kinesthetic learning, other advantages are also derived from Eurhythmics classes:

The experience of participating in this type of class situation helps the child adjust to other social and group situations. A great deal of aggression and destructive emotion can be safely expressed in socially acceptable patterns. The activities that develop from Eurhythmics helps to relieve tensions and pressures that occur throughout a school day. Relaxation, which is very necessary to gain the attention and interest of children, makes it possible to develop other areas of learning (Willour, 1969, p. 74).

Thus, the benefits of Dalcroze Eurhythmics are not confined to the musical education. Judith Willour (1969) mentions other benefits of Eurhythmics that reach beyond the world of music alone:

The activities can contribute to a child’s total personality by encouraging imagination and creative response. Eurhythmics offers a variety of ways for a child to express himself freely and, therefore, can influence his temperament and his psychological development. By strengthening his powers of concentration and his listening ability, as well as his ability to make musical analysis, Dalcroze develops a child’s intelligence. Listening skills, which demand concentration, play a paramount role in the growth of the child, since he must be able to listen and hear discriminately before he can act positively (refer to earlier quote about some children who couldn’t listen) (p. 74).

To conclude, I can only agree with Plato, who pointed out that “music taken passively may undermine the fibre of a man, while music used actively for self-expression strengthens a man spiritually” (Naumberg, 1914). Let us therefore retrain our bodies, train ourselves musically, learn about our bodies, how to feel the music in our innermost being and how to use our body in the expression of one of the highest forms of art: the human voice.

9. Bibliography

- Abdel-Latif, M. H. (1988). *Rhythmic space and rhythmic movement: The Adolphe Appia/Jaques-Dalcroze collaboration*. Ph.D. dissertation, Ohio State University, Ohio. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Abramson, R. M. (1980). Improvisation for K-8 Students: Dalcroze-Based Improvisation. *Music Educators Journal* 66(5), 62.
- Abramson, R. M. (1977). *Rhythm games for perception & cognition*. United States: Volkwein/Columbia Pictures Publications.
- Allen, L. L. (1983). *An adaptation of Dalcroze eurhythmic activities for the primary music program*. Master's thesis, Southern Illinois University at Edwardsville, Illinois.
- Alpers, R. (1995). *A qualitative study of Dalcroze Eurhythmics classes for adults*. Ph.D. dissertation, New York University. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Anderson, W. M. (1983). East meets West with Dalcroze techniques. *Music Educators Journal* 70(4), 52
- Ardrey, C. M. (1999). *Middle school general music: Kodály, Dalcroze, Orff and the developmental needs of adolescents*. D.M.A. dissertation, Temple University, Pennsylvania. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Bachmann, M-L. (1991). *Dalcroze today: an education through and into music*. (D. Parlett trans.). New York: Oxford University Press.
- Becknell, A. (1970). *A history of the development of Dalcroze Eurhythmics in the United States and its influence on the public school music program*. Dissertation, Department of Education, University of Michigan, Michigan. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Barrett, C. (2006). [What Every Musician Needs to Know About the Body: Plan for Incorporating Body Mapping in Music Instruction](#). *American String Teacher* 56(4), 34-37.
- Brophy, T. S. (2002). Teacher reflections on undergraduate music education. *Journal of Music Teacher Education* 12(1), 10-16.
- Brunet-Lecomte, H. E. (1950). *Jaques-Dalcroze; sa vie, son œuvre*. Geneva: Jeheber.
- Burton, B. (2003). Multicultural resources: Resources for African and Latin American musics. *General Music Today* (Online) 16(2), 27-32.
- Buchanan, H. (2005). [On the Voice: An Introduction to Body Mapping: Enhancing Musical Performance Through Somatic Pedagogy](#). *Choral Journal* 45(7), 95-101.

- Caldwell, T. (1993). A Dalcroze perspective on skills for learning. *Educators Journal* 79(7), 27-28.
- Caldwell, T. (1992). *Dalcroze Eurhythmics* [videorecording]. Chicago: GIA Publications.
- Caldwell, T. (1995). *Expressive Singing. Dalcroze Eurhythmics for Voice*. New Jersey: Prentice Hall.
- Campbell, L., Campbell, B. & Dickinson, D. (2004). *Teaching and Learning Through Multiple Intelligences*. New York: Pearson.
- Cerveau et la musique*. (1993). [videorecording] Scientific Programme *Découverte*, produced by Radio Canada 28 February 1993.
- Chagnon, R. D. (2001). *A comparison of five choral directors' use of movement to facilitate learning in rehearsals*. D.M.A. dissertation, Arizona State University, Arizona. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Crumpler, S. E. (1982). *The effect of Dalcroze Eurhythmics on the melodic musical growth of first grade students*. Ph.D. dissertation, Louisiana State University and Agricultural & Mechanical College, Louisiana. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Cutnell, J. E. (1984). *Teaching techniques of Dalcroze, Kodály, and Orff and their application to the Suzuki piano program*. Master's thesis, Southern Illinois University at Carbondale, Illinois.
- Day, A. (2007). Reflections of a New Urban Music Teacher: Using Dalcroze Eurhythmics to Achieve. *American Dalcroze Journal* 34(1), 6-11.
- Dalby, B. (2005). Toward an effective pedagogy for teaching rhythm: Gordon and beyond. *Music Educators Journal* 92(1), 54-60.
- Dale, M. (2003). *Songs without yawns: music for teaching children through Dalcroze eurhythmics (or any method!)*. Ellicott City, MD.: MusiKinesis.
- Dale, M. (2007). Getting perspective: What would Jaques-Dalcroze do? Retrieved February 11, 2008 from the MusiKinesis web site: <http://www.musikinesis.com/September%20Article.htm>.
- DeAmicis, B. (1999). *Multiple Intelligences Made Easy*. Tucson, AR: Zephyr Press.
- Dick, R. J. (1996). *An investigation of the educational influences on the Kodály approach to music education*. Master's dissertation, Department of Education, The University of Manitoba, Canada. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.

- Dogantan, M. (1997). *Mathis Lussy's theory of rhythm as a basis for a theory of expressive performance*. Ph.D. dissertation, Columbia University, New York. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Driver, E. (1951). *A pathway to Dalcroze Eurhythmics*. London, New York: T. Nelson.
- Dutoit, C-L. (1965). *Music movement therapy*. Surrey, England: The Dalcroze Society.
- Elster, A. (2002). Developing a personal philosophy. *Canadian Music Educator* 43(4), 36.
- Engelhard, D. L. (1980). *Song and dance as an approach to teacher preparation in music for primary classroom teachers*. Dissertation, Department of Music, The University of Arizona, Arizona. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Farber, A. & Parker, L.(1987). Focus: Music and movement: Discovering music through Dalcroze Eurhythmics. *Music Educators Journal* 74(3), 43.
- Findlay, E. (1971). *Rhythm and movement; Applications of Dalcroze Eurhythmics*. Princeton, N.J.: Summy-Birchard Co.
- Fung, C. V., & Gromko, J. E. (2001). Effects of active versus passive listening on the quality of children's invented notations and preferences for two pieces from an unfamiliar culture. *Psychology of Music* 29(2), 128-138.
- Ferguson, L. (2005). The role of movement in elementary music education: A literature review. *Applications of Research in Music Education* 23(2), 23-34.
- Fried, E. (2001). Using body language to express the music in conducting. *American String Teacher* 51(3), 68-70, 72-73.
- Galvao, A & Kemp, A. (1999). Kinesthesia and instrumental music instruction: Some implications. *Psychology of Music* 27(2), 129-137.
- Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.
- Gault, B. (2005). Music learning through all the channels: combining aural, visual, and kinesthetic strategies to develop musical understanding. *General Music Today (Online)* 19(1), 7-9.
- Goodkin, D. (2001). Orff-Schulwerk in the New Millennium. *Music Educators Journal* 88(3), 17-23.
- Hallam, S. (1997). Approaches to Instrumental Music Practice of Experts and Novices: Implications for Education. In H. Jorgensen, & A. Lehman (Eds.) *Does practice make perfect? Current theory and research on instrumental music practice* (pp. 89-108). Oslo, Norway: Norges musikkhøgskole.

- Hecht, P. A. C. (1971). *Kinetic techniques for the actor: an analysis and comparison of the movement training systems of Francois Delsarte, Emile Jaques-Dalcroze, and Rudolf Laban*. Ph.D. dissertation, Wayne State University, Michigan. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Henke, H. H. (1993). Rehearsing with Dalcroze techniques. *The Instrumentalist* 47(10), 46-53.
- Horel, K. L. (2005). *Dalcroze Eurhythmics and its application to the choral rehearsal: teaching Telemann's Laudate Jehovam and Mangwani m'pulele to the Knox College Choir*. B.A. Thesis, Department of Music, Knox College, Galesburg, IL.
- Hugh, B. (1998). *Piano Practicing Principles and Methods*. Retrieved April 15, 2008, from <http://brenthugh.com/piano/piano-practice.html>.
- Jang, N. S-W. (2002). *A personal collection of piano repertoire and pedagogy, based on and adapted from the work of Emile Jaques-Dalcroze*. D.M.A. dissertation, University of Washington. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Jaccard, J. L. (1995). *A conceptual model for literature-based musical education*. Ph.D. dissertation, Department of Education, University of Massachusetts Amherst, Massachusetts. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Jaques-Dalcroze, E. (1917/18). Appendix: The influence of Eurhythmics upon the development of movement in music. *Musical Association, Proceedings* 44, 193.
- Jaques-Dalcroze, E. (1919). *Le rythme, la musique et l'éducation*. Paris: Fischbacher.
- Jaques-Dalcroze, E. (1920). *The Jaques-Dalcroze method of Eurhythmics. Rhythmic movement*. New York: The H.W. Gray Co.
- Jaques-Dalcroze, E. (1921). *Rhythm, music and education*. Salem, N.H: Ayer Company Publishers, 1988.
- Jaques-Dalcroze, E. (1924). The technique of moving plastic. *The Musical Quarterly* 10, 21-38.
- Jaques-Dalcroze, E. (1930). Eurhythmics and its implications. *The Musical Quarterly* 16, 358.
- Jaques-Dalcroze, E. (1930b). Remarks on arrhythmia. *Music and Letters* 14(2), 138.
- Jaques-Dalcroze, E. (1942). *Souvenirs, notes et critiques*. Neuchâtel, Paris: V. Attinger.
- Jaques-Dalcroze, E. (1976). *Eurhythmics art and education* (F. Rothwell, trans.) New York: Arno Press.

- Jeong, J-E. (2005). *Adaptation of Dalcroze methodology to the teaching of music to kindergarten students in Korea*. D.M.A. dissertation, Boston University, Massachusetts. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Johnson, M. D. (1993). Dalcroze skills for all teachers. *Music Educators Journal* 79(8), 42-45.
- Joseph, A. S. (1982). *A Dalcroze Eurhythmics approach to music learning in Kindergarten through rhythmic movement, ear-training and improvisation*. D.A. dissertation, Carnegie Mellon University, Pennsylvania. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Jorgensen, E. R. (2006). Reflections on futures for music education philosophy. *Philosophy of Music Education Review* 14(1), 15-22.
- Juntunen, M-L., & Hyvönen, L. (2004). Embodiment in musical knowing: How body movement facilitates learning within Dalcroze Eurhythmics. *British Journal of Music Education* 21(2), 199-214.
- Kay, A. (2000). What is effective music education? *Teaching Music* 8(1),50-53.
- Lee, J. W. (2003). *Dalcroze by any other name: Eurhythmics in early modern theatre and dance*. Ph.D. dissertation, Texas Tech University. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Levitin, D. J. (2006). *This is your Brain on Music. The Science of a Human Obsession*. New York: Penguin Books.
- Lewis, B. (1998). Movement and music education: An historian's perspective. *Philosophy of Music Education Review* 6(2), 113-123.
- Lin, M. Y. (2007). The Value of Eurhythmics: Summer at Julliard. *American Dalcroze Journal* 34(1), 16.
- Mathey-Engelbrect, M. V. (1990). *Comprehensive musicianship: An American approach to schoolmusic*. Master's dissertation, Department of Music, University of the Witwatersrand, Johannesburg, South Africa. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Mathieu, L. (1994). *La rythmique Jaques-Dalcroze : son créateur, ses buts, ses fondements*. Université Laval.
- Mead, V. H. (1994). *Dalcroze Eurhythmics in today's music classroom*. New York: Schott.
- Mead, V. H. (1996). More than mere movement: Dalcroze Eurythmics. *Music Educators Journal* 82(4), 38-41.

- Metz, E. R. (1986). *Movement as a musical response among preschool children (Dalcroze, Eurhythmics)*. Ph.D. dissertation, Department of Education, Arizona State University, Arizona. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Miller, J. K. (1991). Dalcroze, Montessori and preschool music teaching. *American Music Teacher* 40(6), 24-27.
- Moore, S. F. (1992). *The writings of Emile Jaques-Dalcroze: Toward a theory for the performance of musical rhythm*. Ph.D. dissertation, Indiana University, Indiana. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Nalbandian, M. R. (1994). *Application of the Dalcroze philosophy of music education to the music major piano class*. D.M.A. dissertation, University of Washington. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Naumberg, M. (1914). *The Dalcroze idea. What eurhythmic is and what it means*. Retrieved February 11, 2008 from the MusiKinesis web site: <http://www.musikinesis.com/1914%20Article.htm>.
- Neel, M. (2007). A vital force in education: How teachers can develop professionally. *Teaching Music* 15(2), 44-53.
- Orzolek, D. (2004). Absolute musicianship for performers: A model of general music study for high school performing groups. *General Music Today (Online)* 17(3), 21-27.
- Palmquist, J. E. (1998). Dalcroze instruction: it's not just for general music teachers. *American String Teacher* 48(1), 59-61, 64.
- Pape, A. (1993). *A survey for intercultural encounters in music education*. Master's dissertation, Department of Music, University of Pretoria, South Africa. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Parente, T. J. (1999). Whole-body ear-training. *Piano & Keyboard* 196, 18-23.
- Payne, D., & Pieffer, P. (2005). Essential skills for promoting a lifelong love of music and music making. *American Music Teacher* 54(4), 26-31.
- Peddell, K. A. (2005). *Activities in elementary general music classrooms: Current practices in Pennsylvania*. Ph.D. dissertation, University of Minnesota. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Pennington, J. (1925). *The importance of being rhythmic; a study of the principles of Dalcroze Eurhythmics applied to general education and to the arts of music, dancing and acting*. New York: G. P. Putnam's sons.
- Phuthego, M. (2005). Teaching and learning African music and Jaques-Dalcroze's Eurhythmics. *International Journal of Music Education* 23(3), 239-248.

- Ponick, F S. (1999). What's happening in early childhood music education? *Teaching Music* 7(2), 30-37.
- Pym, R. (2003). *The voice as gesture in Meredith Monk's "ATLAS"*. Master's dissertation, McGill University, Canada. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Revkin, L. K. (1984). *An historical and philosophical inquiry into the development of Dalcroze Eurhythmics and its influence on music education in the French cantons of Switzerland*. Ph.D. dissertation, Northwestern University, Illinois. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Riveire, J. (2006). Using improvisation as a teaching strategy. *Music Educators Journal* 92(3), 40-45.
- Rogers, C. M. (1966). *The influence of Dalcroze Eurhythmics in the contemporary theatre*. Ph.D. dissertation, Louisiana State University and Agricultural & Mechanical College, Louisiana. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Rose, S. E. (1995). *The effects of Dalcroze Eurhythmics on beat competency performance skills of kindergarten, first-, and second-grade children*. Ph.D. dissertation, The University of North Carolina at Greensboro, North Carolina. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Rosenstrauch, H. (1970). *Percussion, rhythm, music, movement*. Pittsburgh: Volkwein Bros.
- Sacks, O. (2008). *Musicophilia. Tales of Music and the Brain*. New York: Alfred A. Knopf.
- Schnebly-Black, J., & Lewis, G. (2005). Pedagogy Saturday IX: Body movement for musicians. *American Music Teacher* 55(2), 32-33.
- Schnebly-Black, J., & Moore, S. (2004). *Rhythm: One on One. Dalcroze Activities in the Private Music Lesson*. USA: Alfred Publishing Co.
- Schreiber, L. C. (1980). *Movement training for the actor: laying the foundation in movement principles*. Ph.D. dissertation, University of Minnesota. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Scott, L. K. (2004.) Early childhood brain development and elementary music curricula: Are they in tune? *General Music Today (Online)* 18(1), 20-27.
- Seitz, Jay A. (2005). Dalcroze, the body, movement and musicality. *Psychology of Music* 33(4), 419-435.
- Shiraishi, F. (1999). Calvin Brainerd Cady: Thought and feeling in the study of music. *Journal of Research in Music Education* 47(2), 150-162.

- Shockley, R. (2005). Pedagogy Saturday IX - The whole musician: Making music last a lifetime. *American Music Teacher* 55(2), 25.
- Smith, G. (1915). The Eurhythmics of Jaques-Dalcroze. *School Music* 16(77), 9.
- Spurgeon, A. (2004). Proposed changes for the undergraduate elementary music education curriculum. *General Music Today (Online)* 17(3), 28-32.
- Stone, S. G. (1985). *An analysis of instructional procedures in a college level Dalcroze Eurhythmics class*. Ph.D. dissertation, University of Pittsburgh, Pennsylvania. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Steinitz, T. (1988). *Teaching music in rhythmic lessons: theory and practice of the Dalcroze method*. Tel-Aviv: Or-Tav Music Publications.
- Stuber, U. (2005). Eutonia workshop at the University of Ottawa from 4 to 6 November.
- Thomas, N. (1995). *Dalcroze Eurhythmics and rhythm training for actors in American universities*. Ph.D. dissertation, Michigan State University, Michigan. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Thomsen, K. (2007). "Interview with Silvia Del Bianco". *American Dalcroze Journal* 34(1), 12-15.
- Turpin, D. (1986). Kodály, Orff, Dalcroze, Suzuki: Application in the secondary schools. *Music Educators Journal* 72(6), 56.
- Urista, D. J. (2001). *Embodying music theory: Image schemas as sources for musical concepts and analysis, and as tools for expressive performance*. Ph.D. dissertation, Columbia University, New York. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Walker, C. M. (2007). *Mind/body dualism and music theory pedagogy: Applications of Dalcroze Eurhythmics*. Master's dissertation, Department of Music, University of Missouri, Kansas City, Missouri. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Wax, E. (1979). *Mostly movement: Stories and activities for musical growth*. New York: Mostly Movement.
- Westervelt, T. G. (2002). Beginning continuous fluid motion in the music classroom. *General Music Today* 15(3), 13-19.
- Westney, W. (2005). Essential skills for promoting a lifelong love of music and music making: Risks and rewards. *American Music Teacher* 54(6), 23-27.
- Westney, W. (2005). Pedagogy proceedings: A must read. *American Music Teacher* 55(2), 2.

- Williams, J. F. (1995). *A philosophical inquiry into the education theories of Jaques-Dalcroze and Kodály*. Ph.D. dissertation, Department of Education, Oklahoma State University, Oklahoma. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Willour, J. (1969). Beginning with delight, leading to wisdom: Dalcroze. *Music Educators Journal* 56(1), 72.
- Wis, R. M. (1999). Physical metaphor in the choral rehearsal: A gesture-based approach to developing vocal skill and musical understanding. *Choral Journal* 40(3), 25.
- Wium, H. (1992). *Emile Jaques-Dalcroze's approach to music education*. Master's dissertation, Department of Music, University of Pretoria, South Africa. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.
- Woskowiak, L. F. (1973). *Programmed music reading games for first-grade utilizing certain principles of Dalcroze, Kodály, and Orff*. D.ED. dissertation, The Pennsylvania State University, Pennsylvania. Retrieved February 11, 2008, from ProQuest Digital Dissertations database.