ORFF SCHULWERK AND LEARNING

Speech prepared by Robyn Staveley for the closing ceremony of the, "Creating New Blends" conference in Adelaide, 3 – 8 January2010, the 16th Biennial Conference of the Australian National Conference of Orff Schulwerk.
Original speech accompanied by powerpoint and music by Carl Orff, Gunild Keetman and Miriam Harwood.



Many of you may have had the same revelation that I did when I first began moving when learning about music. It was on my first night in a graduate program at university and during and after the class, I felt positive, enlivened, happy and energised. My brain was as engaged as my body was. I wanted to do more because my brain and body were so ready to learn. I went home and told everyone all about what had happened that first night and to this day, I can still remember the song I learnt in that first integrated music and movement experience.

Blending music and movement is a very strong way of developing a musical brain. But in fact, our bodies are wired to move to learn. I collect stories about moving to learn, and this is a very strong one which was related to me recently.

One of our very revered Orff founders in Australia, Diana Humphries, is the principal of a school for severely disabled children. Diana has dedicated much of her life and her career to the lives of these children, their families and the future of education for the disabled, as well as the care for their families. It is to everyone's eternal benefit that she is still so active, always looking for new knowledge and ways of making the most of every student's life. I asked Diana about moving to learn.

A four-year-old boy started at the school last year. Due to maternal illness during pregnancy, he was left with a number of disabilities. As well as global delay, he was deaf, did not speak, had limited movement and was almost blind. In assessing him, a number of professionals observed how he interacted with the world. Their initial observations inferred a degree of autism, with behaviours such as repetitive movements in front of his face being a characteristic.

Diana continued to observe the child, as she questioned what sensory stimulation he had had to develop any skills. "If sensory input is limited, they are deprived of the ability to learn" (Humphries, 2010). Without any stimulation, it was difficult to assess what this child could do. However, she noticed that he shuffled his body to where the light was in his face and then moved his hands in front of his face repeatedly. Moving to the light was deliberate, as was moving his hands. He was moving his hands in front of his face so that there was a differentiation between

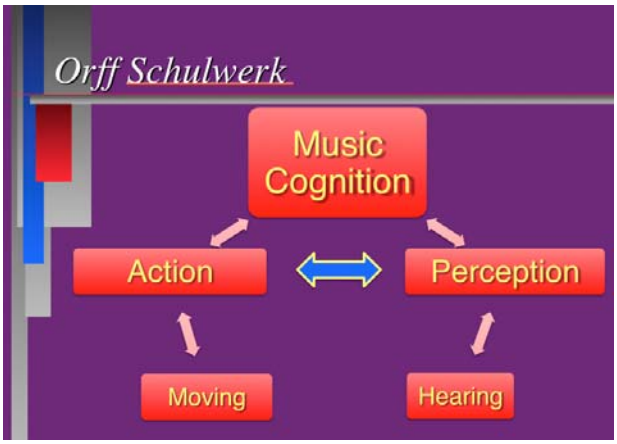
light and dark. He was making it happen. He was learning about light and dark, or learning about the little vision that he had. He moved himself to learn. It was an instinctive urge in him to learn.

An addendum to this story is the exciting news that this little boy has come back to school this year with mobility. He can walk, which means his ability to learn will be greatly enhanced. Not only will he have more control over where he takes his body to learn, but also more sensory experiences will be available to him. For example, he will develop what little sight he has to enable him to move around safely.

In Orff Schulwerk, we move to learn, to make learning strong, but moving is not just through learning movement skills and dance. It is in the hand signs to develop a kinaesthetic feeling for movement of pitch strength of a specific tone and measurement of a relative distance between tones. It is in the movements we use to play an instrument. It is subtle in the way our body moves to produce vocal sounds and it is in the way we take our bodies to where we need to be to learn. Movement is therefore a part of the initial sensory stimulation or input, in a kinaesthetic sense, which engenders learning, and then produces action. Between the sensory input and the movement action, is thought, cognition, which Rodolfo Llinás describes, "That which we call thinking is the evolutionary internalization of movement." (Hayes, 2001, p370). Further, this produces a learning loop whereby the sensory informs the thinking, informs the action, informs the thinking etc. "Movers may be thinking-in-action" (Elliot, 2005, p135).

Hearing music makes us move (Phillips_Silver & Trainor, 2007, p534). One only has to observe a baby's natural inclination to bob or bounce in response to music, the engaged "light in the eye" as an action song is played and the miraculous coordination of not only clapping hands in "Heads, Shoulders, Knees and Toes" in the correct place, but for the hands to actually meet is an amazing feat of coordinated movement, spatial awareness, music cognition, temporal awareness, language representation, symbolism, auditory sequencing, auditory discrimination and so on. The child is personally engaged with the music, the movement, the people involved, the ideas, the anticipation and reasoning, the logic and imagining, the satisfaction and joy which is engendered through learning and growing in understanding.

It is no wonder, when we witness this, that people think that music makes us smarter. Through such activities, children learn many words long before they would naturally use them in conversation. Language development is therefore engendered and accelerated. Keeping a beat in time, anticipating a period of time, measuring time (more sounds, less sounds to a beat etc), all contribute to mathematical /logical reasoning skills. We are developing our spatial awareness through moving and many other skills, but at the heart of these activities, is music and movement. We are integrating and blending many ways of behaving and thinking, but we are doing it through music and moving. To do this, requires a deep interdependence of perception and action (Large, 2000, conclusions section, para 7).



The perception can be all ways that we perceive – visual, auditory and kinaesthetic - and we know the blending of all these make for the richest representations of our understanding, but we also know that "movement-sound interaction develops early and is fundamental to music processing throughout life" (Phillips-Silver, Trainor, 2006, p533). In other words, "*how we move* will influence *what we hear*" (Phillips-Silver, Trainor, 2006, p535). Further, we know that the auditory system reaches a peak in development at around age seven to eight years (Shiel, 1985:4, Petzold in Zimmerman, 1993:9). The implications for music educators is clear; those ears need to be awakened, stimulated, introduced to as wide a world of sound and music that we can possibly provide, along with a rich network of ways of knowing about music – the perceptions and this must be done EARLY.

Here [*powerpoint video recording of Level 3 participants going through the initial stages of composition – play – to refinement and performance]* you see musical understanding through the way they move. The task required the participants to perform a number of movement skills in any order they wished, for as long as they wished, to show their understanding of 5 beat metre. Involved in this process was learning the skills, playing with them, performing them in an authentic context, then problem-solving using a mixture of problem-solving strategies and percepts.

Play is an aspect of Orff Schulwerk which is often misunderstood by those who do not understand the value of play in learning. Play may serve multiple functions:
Peer affiliation,
Tension release,
Role rehearsal,
Satisfaction of exploratory drive,
Problem solving,
Practice of social skills,
Practice of cognitive skills,
Conflict and anxiety management,
Pursuit of pleasure and fun.

Piaget and Vygotsky, notable child psychologists, emphasised the importance of play in the subsequent later development of the child. Locomotor and social play helps to prepare for novel and unexpected environmental and social circumstances (Pellegrini, 2007, 269). Exploration precedes play. Freeplay is critical for becoming socially adept, coping with stress and building cognitive skills such as problem-solving. Children who do not play may grow into anxious, socially maladjusted adults (Wenner, 2009, p23). Play can mean big smiles or serious play, which is what we say we do in Orff Schulwerk, and especially, that "play is the work of children".

> Since the beginning of time children have not liked to study. They would much rather play, and if you have their interest at heart you will let them learn while they play and then eventually they will find that what they have mastered is child's play. This is true of music. (Carl Orff)
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> (Parker, 1978:5).

We perceive through the senses. Research tells us that the more senses used in learning, the higher percentage of retention (Fauth, 1990, cited by Pica, 2009, paragraph 12). And what senses are ready to learn when? There is evidence that pre-birth, a baby responds to sound. In fact, auditory is the first sense to work and the last to die. Five month old babies discriminate

between intervals. Between 8 & 11 months, babies can recognise when familiar melodies have been altered (Krumhans & Juscyzk, 1990, cited by Jensen 2001). We may never be too old to learn an instrument, but those who have started prior to 5 years develop larger cortical development in the sensory cortex and all elite pianists began playing before the age of 10. Around 7 years of age, children spend a lot of time exploring sound and ideas and by the age of 9 – 11, focus more deeply on idea development and practice (Kratus, 1989, cited by Jensen, 2001). While these are just snippets of information, it is clear that early development, or initial development is primarily through the senses before our brains are ready for abstract development. We know there are critical times for development of the brain structures, but we also know that the brain can change itself through every experience. Everyone here will go home a different person, with a different shaped brain through the experiences of this week.

Neurons are the nerve cells in the brain. They have three parts. The dendrites receive the messages from other neurons. They grow in response to stimulation. Once stimulated, they carry the message to the cell body, which sustains the neuron. The axon carries the electrical impulses from the cell body to the dendrites of neighbouring neurons. The exciting new understanding about neurons is that when they fire at the same time repeatedly, chemical changes occur so that they become a strong connection. **Neurons that fire together, wire together** (Doige, 2007, p63). Experiences can make new neuronal structures or alter or enrich old ones.

For teachers, and in our case, music teachers, this validates an approach to teaching that is rich in diversity. In Orff Schulwerk, we have long known that a musical experience which is richly perceived aurally, visually and through movement provides our students with many ways of knowing about an idea and therefore, many ways of retrieving an idea. Let's have the movement, listening, singing and playing neurons all firing together for the richest understanding of musical ideas.

Neurons that fire apart, wire apart, or neurons out of sync, fail to link (Doige, 2007, p64). I recall a teacher bemoaning that every year the students were shown the cycle of fifths and every year they just "didn't get it". What does this suggest? 1. This knowledge is not based on experience, a physical, real experience of the sound and manipulation of sounds, so is meaningless. 2. Because of no authentic background of richly varied experiences of the idea, neurons fail to link. 3. As the approach to teaching this idea had not succeeded, time after time, why did it continue year after year? Solution: provide many and varied experiences of the idea through physically doing it, carefully accumulated and sequenced experiences, then link the new idea to these background experiences – wire the ideas together.

The "use it or lose it" saying fits with what we know about how the brain keeps strong memories and allows other neurons to take over the space if old memories are not exercised. When a student is motivated to learn, the brain responds plastically – it grows new neuron pathways. At first, these new pathways or "maps" grow and take up lots of space, but as individual neurons become more efficient, fewer neurons are needed, leaving lots more neurons to use, lots less activity taken to perform the initial task.

For example, when teaching a song, we often teach an easy movement to keep the beat. This should be an action that is easy to perform, so that little brain "effort" is needed to perform the task. The new part of the task is learning the new song. As the song is learnt and the students are

performing the action unconsciously, we gradually add more variety of gestures. As each new idea is introduced, it is immediately obvious that momentarily, the student falters until they coordinate the new "skill" that is being assimilated and accommodated. Old neural pathways become more efficient and "hard" and the less efficient pathways are eliminated, allowing other strong memories to take that space.

Added to the neuron map idea, as individual neurons become more efficient, they also become more precise about their function and process information more efficiently and faster. One more idea associated to this, as the neurons become faster, they are more likely to fire in sync with others and therefore be a powerful memory. When we think of the intricacies of playing a musical instrument, while reading, listening to others, etc, we know how valuable the efficient brain is. We can also recognise the value of the ostinato, a device which must be simple enough to become unconscious so that we can gradually perform a more complex pattern with it, such as accompanying with a beat body percussion ostinato while singing a song.

Blending Aging and learning. With all the knowledge about brain plasticity, we know that we can make a positive difference to the way we age. We can never become complacent about keeping our brains active. Memories will not necessarily stay if we do not continually challenge the brain to remain active, grow new neuronal pathways, learn new things. But it is not as easy as just learning something new.

1. **Complex mental activity** - What we choose to learn must require complex mental activity. Learn a new skill that is hard. Added to this, to learn a new skill as we get older, we must deeply attend, not be distracted. We must do it continuously, routinely; revisit it every day for regular periods.
2. **Physical activity** – The ability of the brain to learn is strongly linked to physical activity. There are two facets to this idea. One is that the health of the body affects the brain. The other is that the frontal cortex learns, routinizes, and processes motor and mental functions in parallel. Movement becomes inextricably tied to cognition (Ratey, 2003, p158). (This is such an important idea for musical learning also.)
3. **Enjoyment** - You have to like doing it for maximum benefit.
4. **Socialise** – Socialising is a complex process in the brain. Keep up those social groups; join new ones; tell jokes and mix with lots of different types of people.

(Venezuela, 2009)

Finally, with the knowledge that it is never too late to learn and in the interests of having a healthy aged brain, I think I should learn Portuguese, the cello, persevere with Sudoku and finally satisfy my partner and learn chess (well, maybe).

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