

**Andrea Sangiorgio**

### **For an integration within the elemental music education of a cognitivist perspective about music learning**

*Music and dance education in the tradition of the Orff-Schulwerk can be enriched by the theoretical and didactic contribution of E.Gordon's Music Learning Theory*

In the last years the psychology of music has gone further with the aid of new conceptual tools provided by cognitivism, neurosciences, cybernetics and linguistics.

The focus has been in particular on the thought processes which underlie the acts of hearing, reproducing or producing music: perception, memory, segmentation, grouping, hierarchy, organization, abstraction. Basing on empirical research, the cognitive psychology of music has outlined some models for the musical mind, as it works out, analyses and creates sound structures and representations.

The inquiry about the ways through which the mind processes sound informations, giving them a rhythmical, melodic or tonal character, constitutes an essential knowledge for music education, because it helps teachers in this regard to determine consciously the direction of their pedagogical action.

There is, therefore, a significant change in the perspective: the focus is no longer centered only on the student's behaviour and on the responses that he gives to the given stimuli ("what / how he acts"), but on the thinking processes and on the internal elaboration that the student activates in his interaction with the musical data ("what / how he thinks").

Among the researches of music psychology **E.Gordon's Music Learning Theory** represents an important orientation for the implementation of this cognitive approach in the educational praxis.

Edwin Gordon, now Professor at the Michigan State University and author of numerous publications, is a researcher whose main themes are music aptitude, *audiation* (musical thought), early childhood music education, skill and content learning sequences, music creativity.

Gordon has produced a systematic, theoretical and scientifically grounded model of the cognitive musical thought ("audiation"). Furthermore he has given a structured method for developing musicianship, based on skill and content learning sequences and on the use of tonal and rhythm patterns.

### **Audiation**

Perhaps the most remarkable contribution of Gordon is the concept of **audiation**, to be used as a synonym of "musical thought based on syntactic understanding".

Gordon regards audiation as the foundation of musicianship and describes it as the ability to hear and understand music for which the sound is no longer or may never have been present.

Different types of audiation exist: the music can be thought while listening, performing by notation, playing by ear, improvising, composing, writing, and in many other ways.

Audiation is not to be intended as auditory perception, that simply points out the reception of sounds through the ears. Audiation is rather a cognitive process through which the brain gives meaning to the musical sounds.

The following analogy can be established: Audiation is the musical equivalent of thinking in language.

When we listen to someone speaking we must retain in memory the vocal sounds to recognize and give meaning to the words the sounds represent. Likewise, when listening to music we are at any given moment organizing in audiation sounds that we have recently heard.

Sound in itself is not music. Sounds turn into music when our mind gives them a musical meaning, attributing to them tonal and rhythm syntax. This meaning will be different in different moments of our lives and will be different from the meaning attributed from any other person. The level of musical aptitude and the degree of musical experience determine the quality of the meaning that we are able to confer to the music.

On the base of our familiarity with the tonal and rhythmical conventions of the music that we listen to, we are able to compare it with other pieces of music that we have already heard and at the same time to anticipate or to predict what will come.

### **The development of the audiation**

The Music Learning Theory explains how we learn, when we learn music and offers a specific description of the ways in which audiation is developed. It deals with the process, not the product, of learning. Besides, it offers information about how the audiation skills can be taught according to a systematic and progressive method.

The Music Learning Theory examines mainly the tonal and rhythmical dimensions of music. Gordon doesn't make reference to the types and processes of thought regarding other musical dimensions like dynamics, timbre, articulation, or higher structures.

The focus is rather on the use of **tonal and rhythm patterns**, as contents to be used for the development of audiation skills. The pattern is the minimal unit of syntactic organization in music: it can be defined as an elementary scheme (in cognitive terms), a configuration, a rhythmic or melodic-harmonic cell (in musical terms).

Learning is learning of patterns, schemes, structures, relationships among elements that constitute mental representations. During his growth the child acquires music vocabularies and, together with these, the abilities to use them: the listening vocabulary, then the active and productive vocabulary, ultimately the reading and writing vocabularies in the later phases of musicianship and literacy.

Audiation is to be intended as comprehension of the syntactical – tonal and rhythmical – elements of music.

Music learning consists of the process of construction and elaboration of mental representations with regard to the organization of the tonal and rhythm syntax.

Continuing in the analogy between the musical and linguistic development, Gordon uses a scheme – derived from Chomsky – that represents the relationship between the surface structure, i.e. the flow of the audible events, and the deep structure, underlying it, constituted by the syntactic axes, i.e. meter and tonality.

### **Syntactic Organization of Music**

tonal / rhythm Patterns	Foreground	Surface structure
essential pitches and durations	Middle ground	Deep structure
Tonality / Meter	Background	

To understand music consists of detecting in the superficial structure (the flow of sound events) those essential elements that function as an orientation in the perception and production of music. This process is active, not passive: music syntax is not immanent to the music, but it must be attributed to music through the operations of audiation.

To understand the tonal syntax means to determine the relationships between pitches and tonal patterns in reference to tonal center and functions in a tonality. To understand rhythm

syntax means to determine the relationships between durations and rhythmic patterns in reference to macrobeats and microbeat in a meter.

The possibility of growth that a child has in the years of his development to become “rhythmic” or “in tune” depends on the acquisition of these competences.

**The use of patterns** – the Learning Sequence Activities, as Gordon defines it – **aims at supporting the process of decoding and coding of the music expressions.**

The goal is to promote the development of a musical thought that is not only linear, but also vertical, and that is able to conceive the deep syntactic structure of music.

Along the whole arch of growth, beginning from the birth up to the higher levels of musicianship, the child is guided through a series of stages and developmental levels. The key concept is that of **learning sequence**, i.e. the gradual, hierarchically ordered acquisition of abilities: in a direction from listening and syntactical understanding through imitation, to generalization and active production up to theoretical understanding; in another direction from the audio/oral level (learning by ear) to the verbal association (use of systems of rhythm and tonal syllables) up to the symbolic association (reading and writing).

Another basic principle of Music Learning Theory that concerns the musical contents to be used in music education is that of **contrast** and **differentiation**: the brain understands through the comparison of different data and understands better a datum element A if it puts it in comparison with another element B. For this reason it is important to use melodies that are not based only on the major tonality, but also on other tonalities (minor, dorian, mixolydian, etc.) and of rhythmical materials that are not only based on duple meter (2/4 or 4/4), but also on other meters (6/8 or the “irregular” meters 5/8, 7/8 etc.). The **variety of contents** (tonalities and meters) allows the musical mind to operate comparisons that enrich the ability of discrimination and production in music.

The fundamental contribution of Edwin Gordon is to have built a scientific model of the development of the cognitive musical intelligence of the child; on this base he has given a coherent methodic-didactic vision regarding the early childhood music education and the planning of hierarchically ordered curricula aiming at the development of music literacy.

### Integration of the Music Learning Theory in the Orff approach

Gordon's system can be profitably integrated within elemental music education and, in particular, within the Orff approach to music and dance education, with which it already shares many methodic traits and to which it can offer precious indications about procedures as well as contents, pointing out the role of musical thought and of the thinking processes.

The methodical guidelines that the Orff approach, since the beginning, has adopted and that we also see confirmed by Gordon's researches are essentially:

- the fundamental role of movement in music learning
- the principle of orality (the supremacy of the ear on notation)
- the importance attributed to improvisation and the autonomous rielaboration of musical contents.

Another theme, which we only mention, that belongs to the area of the cognitive and post-cognitive didactic is constituted by **meta-cognition**, i.e. the ability of the child to follow and control its own learning processes and strategies. To know how we learn, means to learn better.

### Learning areas in elemental music education.

The following scheme presents the main learning areas of elemental music education, including the new perspective outlined before.

Beside the traditional areas – movement / dance, use of voice, instruments playing, social learning – we can now reformulate the areas “hearing music” and “music theory” in “development of the musical thought / musicianship”.

The task of the pedagogical field research is now to investigate on the possibilities of a coherent integration of this cognitive approach with regard to contents, goals and procedures in the various contexts of elemental music education.

### Literature

- Deutsch, D. (ed.), *The Psychology of Music*, Academic Press, New York 1999 (2<sup>nd</sup> edition)
- Gordon, E. E., *Learning Sequences in Music. Skill, Content and Patterns. A Music Learning Theory*, GIA Publications, Chicago 1997
- Gordon, E. E., *A Music Learning Theory for Newborn and Young Children*. GIA Publications, Chicago 1997 (1990)
- Gruhn, W., *Der Musikverstand. Neurobiologische Grundlagen des musikalischen Denkens, Hörens und Lernens*, Georg Olms Verlag, Hildesheim 2005
- Reynolds, A. / Valerio, W. / Bolton, B. / Taggart, C. / Gordon, E., *Music Play. The Early Childhood Music Curriculum. Guide for Parents, Teachers and Caregivers*, GIA Publications, Chicago 1998
- Sloboda, J.A., *The musical mind. The Cognitive Psychology of Music*, Oxford University Press, Oxford 1985
- Tappert-Sübertkrüb, A., “*Music Learning Theory. Edwin Gordons Theorie des Musiklernens*”, in: “*Diskussion Musikpädagogik*” 1999/2, Lugert Verlag, Oldershausen

### Web-sites

The Gordon Institute for Music Learning (GIML): [www.giml.org](http://www.giml.org)  
see the section: “About Music Learning Theory”

### Andrea Sangiorgio

Graduated in Music and Movement Education at the Orff-Institute, University “Mozarteum”, Salzburg, Austria. Master Degree in Ethnomusicology.

Director of and music teacher at the CDM - Centro Didattico Musicale, Roma.

Teacher training courses throughout Italy and abroad mainly on: elemental music and dance education (Orff-Schulwerk approach), voice training for children, ensemble music for percussion instruments, group improvisation, applications of cognitive psychology of music.

[www.centrodidatticomusicale.it](http://www.centrodidatticomusicale.it)   [andreasangiorgio@fastwebnet.it](mailto:andreasangiorgio@fastwebnet.it)

# Learning areas in Elemental Music Education

Andrea Sangiorgio

a map

