

# Hearing – Feeling – Playing

Music and Movement  
with Hard-of-Hearing and Deaf Children

Foreword by Dame Evelyn Glennie

Edited by  
Shirley Salmon



zeitpunkt musik

Hearing – Feeling – Playing  
(Ed. Shirley Salmon)



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Music and Movement with Hard-of-Hearing  
and Deaf Children

Edited by Shirley Salmon

forum zeitpunkt  
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## Rhythmic Musical Education – a Basic Instrument to Support Development in Educational Work<sup>1</sup>

Helga Neira Zugasti

During my work as a teacher for children and young people in school groups with different cognitive and physical handicaps and as a rhythmic teacher I have used Rhythmic Musical Education as a basic procedure in daily work. Through experiences I have made, I find increasingly that we should discover the principle qualities that developmentally orientated educational systems in their entire, inclusive approach have in common.

In general, educational work seems to me too specialized nowadays. We work too much in single sectors without taking into account the integral view of social, ethical, administrative and political consequences. (We could begin thinking about prenatal diagnostics and the consequences for education and for society as a whole.) This specialisation causes decisions where judgements about one area of a child's development are applied to the entire complex of developmental and educational challenges. This does not support harmonious development of our children. Developmentally supportive work with children is only possible with an integral approach.

The search for common principle qualities in integral educational procedures is a constant challenge and was started by our own famous rhythmic-teachers and shining examples like Jaques-Dalcroze, as well as Feudel, Erdmann, Höllering and Frohne. Today we are again trying to take a small step in this direction.

In my opinion there is only one legitimate educational aim: the support of individual development of the child within the society of youths, adults and persons with or without handicaps. Educational situations, methods and procedures can be beneficially furthered by this basic position. Thus, on the one hand we have to look for and improve practical ways to find situations, general conditions and materials to offer these educational impulses. On the other hand we have to look for the theoretical background which in its turn reflects the holistic educational process – not focussing on selection but on the inclusion of all functions a person mobilises in educational processes. The complete person, not partial aspects, has to be the centre of reflection.

I believe that for practical access the most effective and basic instrument to support the balanced and holistic development of a person is Rhythmic Musical Education.

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<sup>1</sup> Paper for the International Rhythmic Congress, Trossingen, Germany, 11/16/2006



In Vienna, for the purpose of theoretical reflection, we can now apply a system for observation, analysis and statistical documentation based on the theory of cognitive development and offering a detailed itemised survey on the essential developmental steps a person uses in any single situation.

I would like to offer two themes:

1. A specific view on the term rhythm and its different qualities
2. The connection of rhythm with developmental educational processes

It may be that I am repeating a lot of facts we all already know, but it seems a good thing to put them in a new context and thus to create the chance of finding new conclusions.

Rhythm: what are we really talking about?  
What do we mean by rhythm?

Rhythm is the basis of the procedure Rhythmic Musical Education. Up to now I have encountered this term in practical work and in literature as standardised. However this is not true, rhythm is a complex concept.

Rhythm results from a number of different qualities and conditions which are not constituted by each single quality alone. Only the combined effect of all of them generates rhythm, e. g. water is liquid. But each component of water – oxygen and hydrogen are gasses. Only the specific combination of these elements generates the liquid quality of water.

This is my understanding of what we mean by rhythm. Here I refer to rhythm in the general meaning of processes in living structures, not only the musical rhythm of a sequence of notes in the bars of a piece of music, because Rhythmic Musical Education supports and helps to balance the development of a person as a whole in his active capabilities.

Up to now I have found 13 qualities and conditions that give rise to rhythm. The idea is really fascinating. If one of these qualities is lacking, there will be no rhythmical process. First I would like to discuss the overall meaning of these qualities in life procedures in general.

- Synchronisation
- Entirety
- Continuity
- Repetition
- Polarity
- Structure
- Activity
- Interdependence

- Variation
- Subject Bonding
- Intention Orientation
- Irreversibility
- Periodicity

Rhythm is generated by **synchronisation**. Each living structure consists of an uncountable number of elements which need different periods of time, space and dynamics for their activities. To generate a rhythmical process all the elements of this organism have to be synchronized. If they do not work together the process is not harmonious, the organism cannot develop in a positive, healthy, forward-looking way. This is relevant for the structure of each tiniest cell as equally for the extensive rhythmical phases of the seasons with their influence on the growth of all the plants in a region. Certain butterflies for example synchronize their reproductive cycle to the flowering time of certain plants.

Rhythm is activated by the **integral combination** of all elements of the structure. This means that all elements of this particular organism are included and affected. If my sleeping rhythm is balanced it gives me a good start to the morning, all my energy reserves are available and many other psychophysical systems equally benefit and induce a feeling of well-being. The activity and the influence of all these constitutional elements are of different intensity, but they are all integrally involved.

Rhythm depends on **continuity**. Without the continuous flow of integral elements of a structure rhythm cannot surge. I will mention only one aspect on the topic: If our neuronal system did not continually associate incoming impulses and adapt the inner pictures then, without continuity, every alteration of exterior requirements would involve a new organisation of each structure. How could then an organism create stable structures? Exterior influences are permanently existent. However the organism has to stabilize its functions, each living being needs stable patterns to manage the continuous process of renovation, and representation of patterns. This is only possible through continuity of the essential elements of the structure.

Rhythm results through **repetition** of the essential substance of a form (Gestalt). For example the diagram of single systole-diastole frequency of my heart is not sufficient evidence for the cardiologist. He needs a certain number of continuously repeated results to find out if the heart frequency is okay. The essentials of the rhythmical structure can only be observed by repeated sequences.

**Polarity** is a main quality of rhythm. Each organic movement has a fixed oscillation between the two extreme points of the possible movement available. Within this field it organizes changes, this means it is able to introduce development, e. g. a baby learns how far it can shift its balance forward by hundreds of trial and error proc-

esses. We know the amplitude of our steps and can adapt the rhythm of our walking steps to the required speed and we can balance the extreme points in the numerous bipolar processes in different parts of the body that lead to a single step. This means rhythm is in accordance with the homeostatic principle, a principle that continuously causes the equilibration process between two poles which are mutually dependent. This is one of the qualities we have to adapt to during our whole life – the equilibration between large numbers of bipolar processes that keep us alive.

Rhythm is **organized**. Rhythm consists of structured time, structured space and structured dynamics. The resulting forms (Gestalten) are sizeable and understandable. They can be compared to past sequences and allow planning for following sequences. This organization is one of the most important prerequisites for the development of living structures.

Rhythm can only be produced by **activity**. It is always a dynamic process. Without activity there is no rhythm. We are not always aware of the many different rhythms that are part of our reality, they are either too infinitesimal or too extensive but their activity affects us.

Rhythm is **interdependent**. Each sequence is determined by the previous sequence and determines the following sequence. Thus the relationship is interdependent and provides the continuous flow of developmental processes.

Rhythm depends on **variation**. This does not mean repetition of the same, but repetition of essential elements and the slight deviations due to life processes. The quality of variation forms the basis for changes to new processes. The slight differences offer the possibility of experiencing new ways without losing the acquainted structure. This takes place in every developmental process; the microscopic processes in our brain as well as macroscopic processes in galactic systems or the evolution of new species of animals and plants. Each new phenomenon has a long development process of many varied experiences until a new creation emerges.

Rhythm has to be produced by a **subject**. Rudolf Bode says that rhythm is not divisible, it is individual. It is not divisible from time, space and from the producer. Rhythm is bound to the specific organism, to the subject. It cannot be transferred. For example even if we identically copy a movement we have to recreate it with our own neuronal system. Therefore we have planning neurons, action neurons and the recently discovered mirror neurons (*Spiegelneuronen*), which copy emotional impressions and create and represent their inner picture. In no way is rhythm transferable.

Rhythm is **intention-orientated**. Rhythmical processes are the opposite of goal orientated processes. Purpose or aim orientated processes reduce intention and ex-

clude impulses in order to reach certain, preconceived results. The direction towards which the activity of a rhythmical process moves is determined mainly by the inner structure of an organism, by its immanent capacities to cope with exterior influences. Here there is an important connection to the theses of Jean Piaget: Accommodation, assimilation and adaptation are goal orientated processes.

Rhythm is **irreversible**. This means that rhythmical process cannot be turned back. The patterns caused by a rhythmical process are facts bound to the time and the space in which they happened. If we want to re-present, to reactivate stored information we cause a new active process.

Rhythm has a **periodical** structure in developmental dynamic processes. Through the new possibilities, which arise through continuous flow, variation, and all the other qualities we had a short look at, refinement, extension, deepening, networking and consolidation of the developmental processes result. The basic elements of the structure appear after a certain time in a differentiated and more complex form in the next loop of the developmental spiral.

These are the qualities and conditions on which rhythm depends that I have discovered so far. If one of these items is lacking a rhythmical process cannot be generated. Simply: life would not work.

But there is one much more fascinating and important fact: **All these items constitute active guiding principles of developmental supportive educational situations.** The various progressive educational approaches and methods in the last century, as well as new scientific knowledge in the fields of Neuro Education and Neuropsychology, demand these qualities for successful educational work which supports development and is child-centred<sup>2</sup>.

This is yet more proof that Rhythmic Musical Education plays a fundamental role in educational work in general. Our pedagogical intentions in general, not only in rhythmic musical tasks, have to respect and implement these qualities if we are aiming at sensible support in learning and development processes. Of course other qualities not concerning the rhythmical principle such as empathic relationships, competent didactical knowledge and child-orientated conditions must also be included.

We are aware of the effectiveness of Rhythmic Musical Education through experiences we have made; however for generally comprehensible articulation and reflection it is not enough. I feel it is very necessary to demonstrate these experiences in theory and to produce scientific evidence for their validity. It is not a new theory

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2 cf. Hüther 2004 and Spitzer 2008

of rhythm which is necessary, rather more the affirmation of what we daily experience as operative structures. To substantiate, confirm and thus combine this by applying valid knowledge from other scientific fields is a challenge which has been neglected for too long.

Before we go on to practical work, I would like to emphasize that each task usually includes all qualities, but I have looked for examples that emphasize the one or the other quality in particular.

### *Practical Example 1<sup>3</sup>*

Let us stand up and shift our weight from one leg to the other until we achieve a gentle swinging, placing our legs then farther apart. The movement continues to the accompaniment of a bass xylophone that plays a crescendo but without altering the speed. Automatically (or if necessary with the help of the teacher) the movement of all the participants has a uniform direction. Then we start self-accompaniment using voice, language, humming as the bass xylophone gradually fades out. Participants are asked to put their hands or arms on the shoulders of both neighbours, the xylophone joins in again increasing and decreasing in volume several times leading slowly to the end of the process.

In an overview of the single qualities it becomes clear that in this exercise *synchronisation* was the most significant factor. Each of us started with an individual time structure and ended in a common time structure. We achieved a collective energy field. Improvised accompaniment, humming, singing, touching each other harmonized the different time structures to result in a joint time structure of the group.

This experience of shared tension and relaxation in a group is very supportive, satisfying and stabilizing. Especially in groups with children who express their difficulties with conspicuous behaviour, this can be changed if they frequently experience such situations over a longer period of time. They learn that they are equal parts of a whole, that they can work as active, constructive members of the group and that they too can contribute to coping with a task. Acceptance occurs through individual, physical activity and direct experience, not only by talking about it. Here I refer to the results of research on the effect of music by Hans G. Bastian. I placed emphasis only on one aspect of the educational significance of synchronisation.

### *Practical Example 2: An imitation task*

A simple, predetermined rhythm is clapped (| [ ] | [ ] | | | -) and repeated until it can be copied. Everyone stands up. The task is altered: the rhythm is played

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3 These examples were experienced practically by participants at the lecture.

on the arms of the chairs, stamped on the floor, then the short notes are left out once. In the next sequence, which is played on the body, they are changed to the next beat and, at the end, clapped again in this altered dynamic (| | | | [] [] | -). The sequence is repeated many times at different speeds until it either slowly comes to an end or finishes in a climax reaching either a maximum in volume or speed.

In this task the emphasis is on variation. The main element – the ratio of double tempo – is maintained but the parts of the body, the sensory input and the dynamic expression are altered in that the same elements are played in some of the many different possible ways. The main structural component – the doubled speed – is maintained, can be stabilized and consolidated.

What is the importance of variation for learning processes?

It is indeed the small differences in an activity that stimulate concentration, curiosity and attention. These facts can be found in the works of Gerald Hüther and Manfred Spitzer. They state that repeating the same thing is tiring and that the neuronal coding system shuts down because our brain works very effectively. However, if the information is too differentiated it cannot be absorbed because impulse transmission cannot find access to existing, stored data and the thus non-representational information seeps away.

The last point can be repeatedly found in children with cognitive limitations. They have a high knowledge of detail available and can acquire a good figure and skeletal structure. However, in order to apply this knowledge in independent use in differing situations they would need many more situations in which they could construct their own, stable, generalised inner picture of information through variation of the significant elements of content. To this purpose contemporary learning support and learning programmes (= content orientated not development orientated curricula) offer far too little opportunity. This is one of the most important aspects for the seriously increasing number of children with slight cerebral dysfunctions, children who suffer an attention deficit due to the current social dynamics: maintaining the significance of a structure and at the same time incorporating variation, small alterations and short units in order to be able to develop competence for concentration, perseverance, orientation towards the group, collective dynamics and many more factors through one's own, active experiences.

These are two exemplary instances which precisely demonstrate the deep connection between the qualities of rhythm and learning i.e. development processes.

The connection between the qualities (that have been recognized up till now) and the conditions are presented in the following list. Let us take these thoughts one

step further and find out the meaning of these qualities in connection with developmental processes and the process of active learning.

**Synchronisation** refers to the agreement of differing time, space and dynamic structures within one's self (intrapersonal) and with processes from the environment (interpersonal).

This quality permits recognition of own activity as a meaningful part of the common composition of processes. One of the basic requirements of a person is that her way of expression or of manner is accepted per se. For personal development reinforcement of others' acceptance is the result and with reference to own reactions reinforcement of self esteem in the community. This encourages *empowerment* – the acceptance of the person, of her way of expression within the community. This acceptance is one of the basic human needs.

**Entirety** refers to the multi-functional activation of abilities and leads to the *combined storing of data*.

Activation of various functions at the same time causes more intensive networking between the different cerebral centres and a broad representation of the information. In every activity, with more or less intensity, all eight functions that we possess are activated in order for us to enter into an exchange with ourselves and our environment. These functions are: motion, perception/sensation, thought, speech, social-emotional activity, wanting, intuition/creativity and memory/remembrance. In the research project of the Institute for Music and Movement 2004<sup>4</sup> in co-operation with the Institute for Educational Science in Vienna, scientific proof was presented that in each and every action all functions are activated in differing intensity and also which correlations and subsequent significance arise from the evaluation of data from different variables. In this way the networking of information in neural fields is intensified.

**Continuity** stabilizes memory content especially during sensitive learning periods in so-called “learning windows” and leads to *tuning of the networking process*.

The representation processes of stored data increase their speed through continual use of the conductors, the neuronal pathways become stronger (myelinisation of the nerve tracts), the capacity to reactivate knowledge increases with respect to duration and quantity.

**Repetition** allows differentiation, refinement and consolidation of memory content and thus the choice of more effective expressive possibilities as well as the grasp of the most important points of information transfer by leaving out unimportant details and concentrating on significant ones.

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This is the *basis for feedback* (comparison and safeguarding of data) and *anticipation* (looking forward, expecting).

**Polarity** in the equilibration of tension is a *condition for developmental effective learning*.

The interchange of the homeostatic principle aims at the equalisation between two reciprocal provisory poles. Action in good emotional conditions, with balanced feelings, means that our neuronal systems produce positive transmitters, action under stress causes the production of transmitters which block neuronal activity and the flow of the networking process (which constitutes 80 % of our cerebral tracts according to Spitzer) between the single cerebral areas is constricted. Balanced psychophysical stress conditions are a prerequisite for developmental, dynamic and effective learning.

**Structure** is necessary for safety and self-competence and is a *basic requirement for self-organized learning*.

If there is sufficient overview of the main elements of a structure, energies can be effectively organised, proper decisions made alone and one's own solution strategies found. Self-organized learning needs the commitment of one's own competences.

**Activity:** Cross-linking activity of the cortex fields is mainly determined by self-controlled and active confrontations with inner and exterior impulses.

*Learning by doing* is solely through self-motivated, creative confrontations with processes and is self-controlled access to solutions by trial and error.

**Interdependency:** Logical connection of contents leads to *mutual dependency of data*.

Georg Feuser explains very clearly that each individual possesses his own developmental, logical structure; this means not only the didactical structure of our lessons has to adhere to the principle of interdependency; but also the entire developmental support in our educational work has to respect this personal development logic as a positive basic structure. All data, with which the brain controls activities, interrelate in continuous reciprocity. Information has a reciprocal function; it alters the map already stored in our brain and, at the same time, establishes the amount and intensity of the renewed assimilation of data. Here it is important for the individual to be able to process the information according to his developmental logic.

**Variation:** collecting and extending new experiences → *condition for generalisation*.

By maintaining the most significant elements of a structure the important processes of differentiation, intensification and enhancement of basic experiences can be achieved. Finally an increasingly complex package of organised single data becomes available for the solution of problems. This is a prerequisite for generalisation of memory content.



**Subject bonding** means that the individual alone copes with information, this *increases autonomy and individual competences*.

The main aim of our educational work should be to encourage solution of problems with own ideas and offer adequate competences. However this can only be learned by self determined decision processes and the phasing out of supportive accompaniment. This leads to an increase of self competence and finally to the development of an autonomous world view.

**Intention orientation:** individual approach to solutions → *focus on capacities, not on deficits*.

The interest of accompaniment and observance lies in the process not in the result. It is interesting to see how solutions are found, which actions in a child's repertoire are activated and which elements of a task have importance for the child in this specific situation. Nobody works with his deficits everybody employs his capabilities and advantages for process solution. Capabilities not deficits are important. Through individual participation in a process arrangement, individual development goals are attained. These are the basis for balanced personality development.

**Irreversibility:** respecting each act as the best possible for the moment → *future orientation*.

Georg Feuser explains that each act has to be understood as a future orientated act, even regressive, or self destructive acts have this future orientated meaning (attitude) and have to be respected as the momentary basis for the best strategy. Developmental meaningful options can only result from this positive view; we must communicate understanding and find supportive speech in even the most difficult situations. Rhythmical processes with their space-time relativity are always future-orientated, thus repeatedly a positive access to development is achieved.

**Periodicity:** maturing of complex patterns → *developmental loops*.

We should meet after a while and reflect which changes have taken place by combining this knowledge with our practical work, with our personal life. The development from simple to complex demands, the periodical recurrence of the most significant elements in the shape of (sensorimotor) cycles so that the maturing of complex development patterns both towards differentiation as also intensification is possible.

Each of these qualities or conditions is important for the structures necessary for development and learning. In rhythmic-musical tasks each person reacts with the whole palette of capabilities at her disposal at that moment in time. Each individual decides freely – consciously or unconsciously – which effect, which impulse from the many ideas within a task is important. Here I find a very important difference between therapeutic intentions and the intention of rhythmic-musical tasks. Therapeutic intentions have to be based on a specific diagnosis, have to elaborate defined

methods and have to achieve predetermined results. A process distinguishing the basic demands of both procedures (therapeutic or educational work), meaningful overlapping and unclear, goal-orientated mixing is very necessary.

We can see that the basic qualities of rhythm have a very direct and intensive connection and influence on developmentally orientated learning. Therefore we need to establish Rhythmic Musical Education as a basic element in all educational training, because if taught well this procedure is the basis of the main qualities that developmentally supported learning needs.

Since the beginning of the last century the purpose of Rhythmic Musical Education has been the support of the development of the personal skills and capabilities in an integral way. The qualities of this procedure are most effective in inclusive educational situations. The term “inclusive” is holistic in two ways: it refers firstly to work in heterogeneous groups of children with and without disabilities and secondly to the development of the different abilities and functions of the single person. Inclusion has a personal as well as a social aspect.

It is one of my deepest desires to contribute to the realization of participative, shared learning and living of handicapped and non-handicapped children in heterogeneous groups; that diversity is recognized as an enrichment and that the process of selection is seen as an impoverishment of society’s potential. Rhythmic Musical Education can offer a creative and forward-looking procedure to take on this challenge.

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