Sapir method – Improving learning abilities through movement and Eshkol-Wachman Movement Notation

Tirza Sapir & Lilach Shalit

The Sapir Method was conceived by Tirza Sapir and was first published in 2002 (Sapir & Blum, 2002). The method aims to improve learning abilities, cognitive competences and motor competences. Moreover, it is designed for a wide variety of populations (learning disabilities, ADD, population with diminished cognitive abilities and others) and a range of ages (children, grownups, seniors). The method originated from motor-practical work with children with special needs and began to be consolidated following the positive effects manifested in their functional and cognitive ability.

The Sapir Method is based on Eshkol-Wachman Movement Notation (EWMN) and on the options it encompasses. These options result in a complete and clear literate functioning, through an active feedback between the "visual literacy" [the ability to understand, use, think and learn in terms of images (Avgerinou, 2001)] and "movement literacy" [thought, conceptualization, symbolization, composition and creation options, movement learning and performance (Ofer, 2001)].

The methods of work flow back and forth, from the text to the body and from the body to the text. One has to read what is written on the manuscript page, understand the movement instructions included in it and, by means of the moving body, visually express the "reading comprehension". Alternatively, one has to analyze body movements, understand their manner of operation and then symbolize and write the "movement comprehension" on the manuscript page. The process and its reversed process can be summarized as follows:
Read – understand – move / move – understand – write.

At both ends of the processes indicated above are values which are valid in the spoken language – reading and writing – and understanding requires a combination of "visual literacy" and "movement literacy" abilities. The movement illustrates the data processing and interconnections and it entails improved abilities of attention, memory, sequence, time, sense (direction), spatial-physical orientation and coordination.

By means of the method, the visual steps between the 2-dimensional writing on the manuscript page and the 3-dimensional movement of the body become one unity of thinking. This unity offers an effective interpretation with a clear feedback concerning the content symbolized by these two visual languages that interact with each other and embody one content.

As mentioned above, the Sapir Method was formed as a result of work and positive experience in the field of education and community. Moreover, it facilitated the promotion of its learners' cognitive ability and was implemented in a new, multifaceted and creative way. Some of the means of materializing the method's principles include:

- Reading and writing exercises – by a valid symbolization of a spoken language, the movement notation language and personal-creative symbolization.
- Executing a movement – in the body, space and time. An accurate and defined execution, partly defined, free and adapted to the performers' age and bodily ability.
- Coordination exercises – from simple patterns to complex movement patterns, from a movement of one part of the body and up to a movement of many parts of the body. From a single-layer to a multi-layer thinking ability.
- Coloring and drawing exercises – from free spaces to defined spaces (location, line, manuscript page). From a personal creative interpretation up to topics with formal learning tasks.
- Exercises with small aids and accessories – balls, sticks, ropes, papers, items of clothing and hoops that require the use of a coarse, fine and complex coordination.
- Exercises integrated with sounds, words and songs, illustrating in movement the organization in time of content and form.

These exercises are related to learning processes, comprehension and life skills. Through their active visual mediation, basic competences of learning cognition and existential cognition (general functional abilities) can be improved at all ages[1].

The Sapir Method is studied today in a special education track at the Kibbutzim College of Education, Technology and the Arts as well as in workshops jointly organized by the Choreographers Association and the Center for the Study of Movement and Dance Notation at the College[2].

The Sapir Method was designed and developed by the integration of two aspects:

1. Learning and cognition processes whereby difficulties are demonstrated and are treated by the method:
- Perception processes – visual, auditory, spatial.
- Learning and remembering – organizing the information and using the active memory.
- Motor-sensory functioning.
- ADD – filtering the stimuli, splitting the attention, organizing the sequence and being able to persist.
- Control and monitoring – working in pairs and in a group.

2. Fundamentals of Eshkol-Wachman Movement Notation and the options it offers for promoting abilities by means of notation and symbolization of body movement in time and space.

Eshkol-Wachman Movement Notation is a graphical-symbolic language which is a notation method relating to the elements of form and movement of the human body. It offers a symbol system representing basic values by means of which one can describe the human body movement in space and time. This notation was created by Noa Eshkol and Avraham Wachman and was first published in 1958 (Eshkol & Wachman, 1958)[3]. The movement notation can be used for composing, recording, learning and investigating movement events in many varied areas (Harries & Sapir, 2015)[4].

The Sapir Method applies the options of movement analysis and graphical symbolization offered by Eshkol-Wachman Movement Notation. The analysis and symbolization facilitate a fruitful and enhancing relation between movement and basic competences of formal learning (reading, writing, arithmetic) and daily conduct abilities (time organization, spatial orientation, activation of the sight, sound and touch senses).
For the purposes of this paper, we will describe several fundamentals of movement notation and, based on them, we shall explain some of the ways of working with the method.

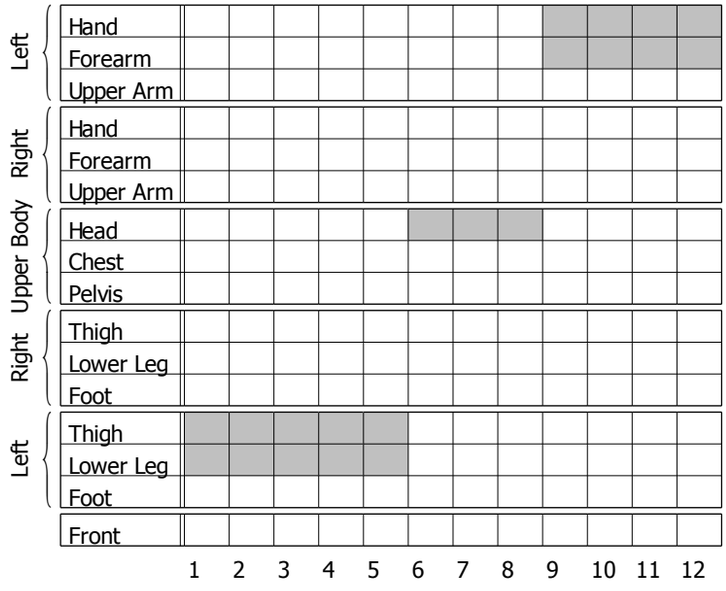
1. The human body is structured as a chain of limbs and joints:

Working options

Observation of the human body structure enables engagement in several topics: What are the names of the body parts? How many parts does the body have? Into which groups are they divided? In which joints are the body parts interconnected? What is the length and width of the body parts? What are their functions? What is the movement ability of each body part?
Perusal of these questions leads to options of working on various areas of learning:
- Enriching the vocabulary, naming and conceptualization.
- Understanding parallel functions (symmetry and asymmetry, dominance or lack of dominance of the right and left sides).
- Reinforcing the body image as an element of building a proper self-image – I as a whole and as built of interconnected parts.
- Integrating the movement of body parts with one another for executing and improving the execution of tasks in daily life.

2. A page of reading and writing in a special format that represents the human body and its parts:

The reading and writing page is a ruled sheet of paper – each body part is represented in one line, in which its actions are written. The time sequence is represented by horizontal reading from left to right, each square representing an agreed time unit or the sequence of events according to their order. In a vertical reading one can see which body parts are acting simultaneously. Thus, one can understand the instruction of the entire movement that is designated for several parts together (similar to the score of an orchestra).



For example: columns 1-5 the thigh and the lower leg are active during five time units; 6-8: the head is active during three time units; 9-12: the upper arm, forearm and hand are active during four time units.

Working options

The page can be reduced or expanded according to need and it can be adapted to the level of work required from the learner. Starting with one line, two lines and so on, a shorter or longer duration of a movement sequence, with defined time, without defined time, by symbolization of words, color, customary notation signs, creating an independent symbol and so on and so forth.
Below are three examples of the same movement sequence with the upper arm, combined with additional parts of the body. These examples represent some of the working options with the manuscript page, from one line up to three lines (in color, words and movement notation).

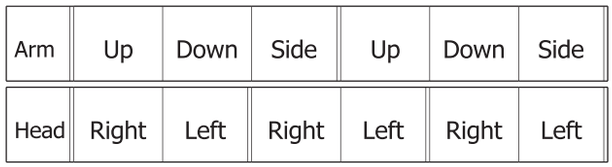
A. An exercise for one body part (one line): an upper arm with three moves represented by words and color.

Representation of a movement by words

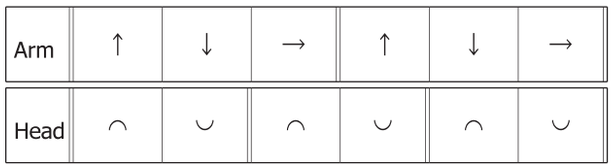
Representation of a movement by color

B. A coordinative exercise for two body parts (two lines): for the head a pattern of two moves and for the upper arm a pattern of three moves, represented by words, color and movement notation.

Representation of a movement by color

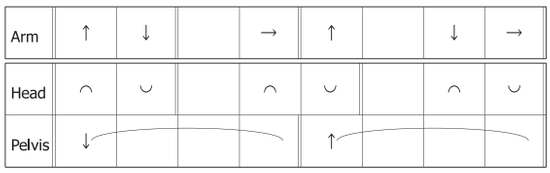


Representation of a movement by words

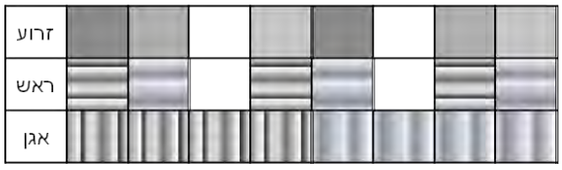


Representation of a movement by movement notation

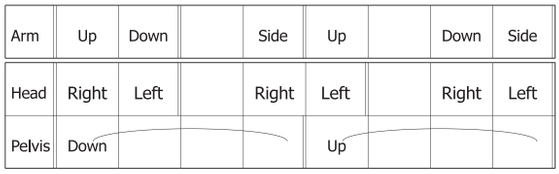
C. A coordinative exercise for three body parts (three lines) at different times: with the upper arm a pattern of three moves, with the head a pattern of two moves and with the pelvis a pattern of two moves (a white square without a symbol means 'no movement').



Representation of a movement by words



Representation of a movement by color



Representation of a movement by movement notation

3. Coordination – for the promotion of thinking and cognition abilities

Many coordinative exercises are integrated in the Sapir Method, accompanying each and every area of work. These exercises deal with the ability of the different body parts to coordinate their simultaneous action sequence as well as the durations of the various movement activities. When an exercise has been learnt and is automatically mastered, it ends its promoting function and one should start practising the next exercise.

Below are several coordinative patterns that can be implemented by choosing different body parts and different movements. Each number represents a different movement and the heavy lines represent the end of the recurrent sequence:

Two movements in one body part with the addition of three movement in one body part

A canon of three movements between two body parts

A canon in one body part with the addition of three movements in another body part

Five back and forth movements in one body part and in the other body part two movements and three back and forth movements

The patterns allow an infinite creation of exercises, and learners assume personal and formal responsibility for their movement decisions and their mutual integration.

Working options

The use of a written page gives rise to the following questions: How do we translate the movement into a graphical symbol? Which combination of graphical signs together form a movement meaning, starting from a single sign and up to several signs aggregated together? How should we organize the signs in a square and in a line? What are the possible reading directions? How many movement instructions can be read in a sequence? When do we start and when do we finish? What is the duration of one movement? What is the duration of a movement sequence? How many movements can we remember in a sequence?

Coping with a manuscript page facilitates reinforcement of many functioning areas:

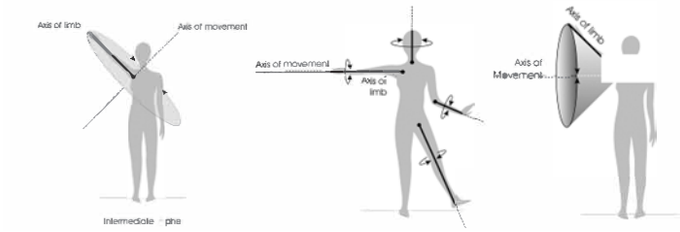
- The manuscript page obliges the learner to define a movement sequence and determine a starting point and a finishing point.
- Learners are required to have the competence of filtering stimuli, perseverance and flexibility in applying their attention.
- Reading the signs is translated into movement and strengthens a motor-visual integration – reinforcing the ability to integrate different areas of perception.
- The ability of graphical work in writing is reinforced within a defined framework (line, square).

- In a motor-visual integration one can obtain concrete feedback about the information identification.
- The manuscript page enables an exact identification of the area of the obstacles and difficulties related to the reading-writing (reading letters, words and sentences and reading comprehension).
- The manuscript page allows a coordinative timing of different body parts in different durations, focusing attention and splitting attention.
- The need to read in two directions (upwards and downwards – the participating body parts; and from left to right – the sequence of events in time) facilitates processing of the whole and its parts.
- Since every sign combination is an instruction to act, learners are required to comprehend the reading in order to act.

4. A movement of a single articulation (body part) is circular by nature:

Working options

The fact that each body part moves in circular movements, allows an encounter with the concepts of the whole and concepts of its parts, and different concepts of size. How can we divide the circle? Which circle size can be executed with different body parts? What are large circles and what are small circles?



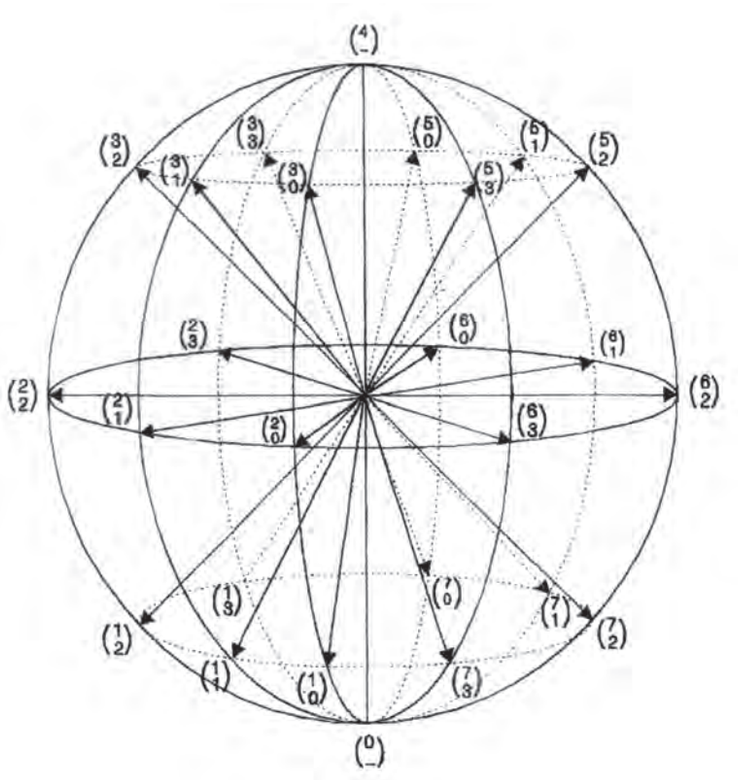
These topics enable coping with the following areas:

- Fundamental concepts of mathematics and geometry (whole, half, quarter, amounts, sizes)
- Enhancing ability of analysis and synthesis (concepts of the whole and its parts)
- Flexibility of the perception and reinforcement of competence for generalization and deduction (the circular movement can be executed in different sizes with every body part and from different starting points).

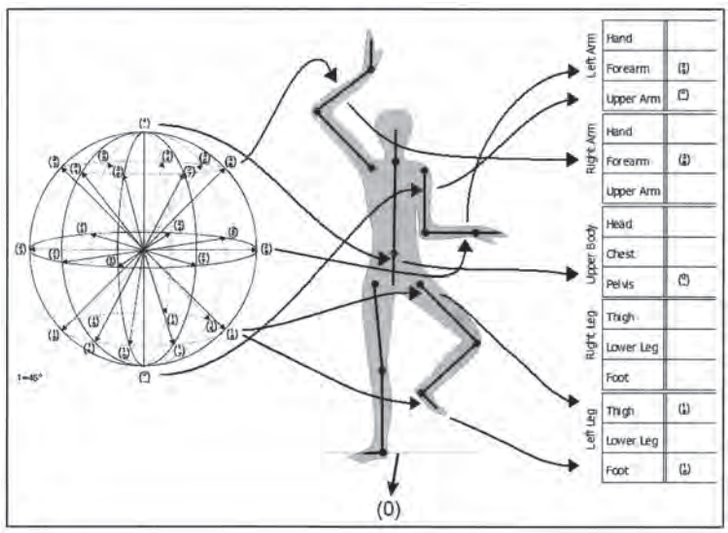
A sequence of four movement events in different forms of graphical expression of the circle division – the whole and its parts:

Graphical expression				
Numerical-arithmetic expression	1	½	¼	1/8
Verbal-arithmetic expression	A whole	A half	A quarter	An eighth
Movement with a body part – verbal expresion	A whole circle of the head	Raising a hand upwards	Raising a leg sideways	A movement of the torso from an upright position to a tilt
Concrete illustration				

5. A spherical system of reference serves for organizing the circular movement and its paths:



A body part is by nature permanently connected at one end and free at the other. For the purpose of describing body movement, we can use a circular system of reference with the fixed end at its center.
The sphere is mapped as a coordinate system by means of longitudinal and latitudinal lines (as on a globe), referred to in movement notation as the "system of reference". Integration of the horizontal and vertical elements facilitates definition of the posture-direction-position of the body part. The form of transition between one position and another defines the movement path and its direction.



Example of the flow of information from the system of reference to the body parts and to the reading and writing [manuscript] page

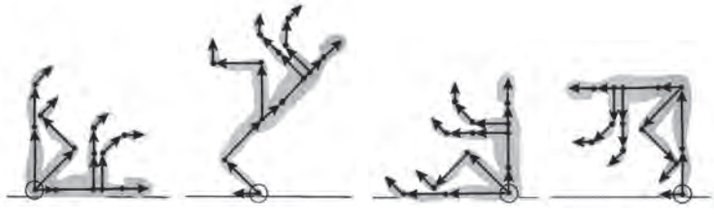
6. Each joint in the chain of the human body parts constitutes an individual center of the spherical system of reference:

Working options

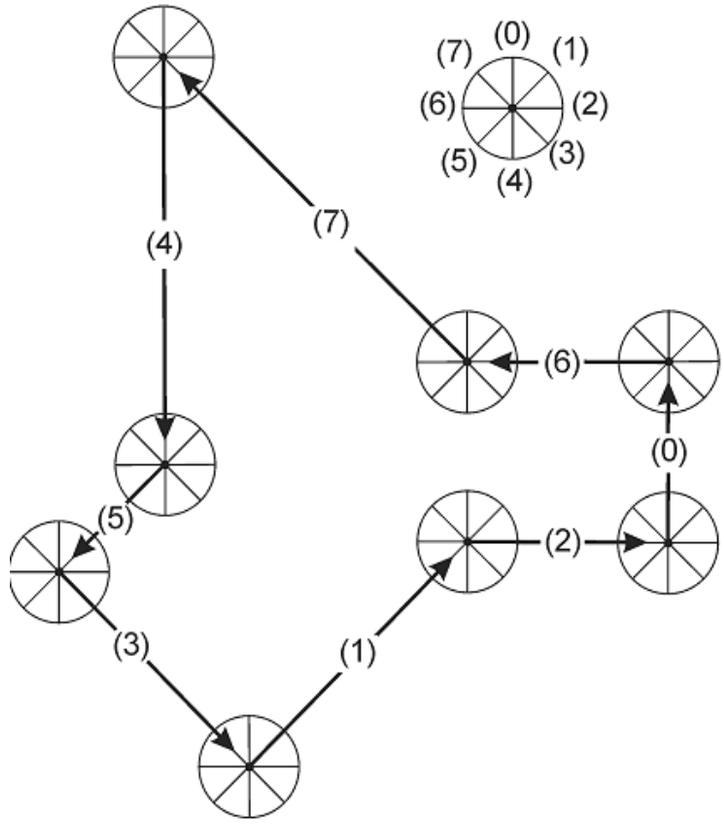
The above elements enable us to find out: In which direction do the different body parts point? What is the angle between adjacent body parts? In which direction does the whole body turn? In which direction do the body parts move? In which path do they move?

The areas that can be reinforced around these questions are:

- Work with the system of reference allows enhancement of spatial orientation abilities.
- Analysis of the relations in the given space – location, direction, distance (Where am I? Where am I going? What is the distance to the goal?)
- Planning of movement directions while taking into consideration the size of the space and the objects in it.
- Identification of the location of different body parts in relation to space and identification of the angular relations between them.
- Comprehension of space as a relative and changing layout according to the determination of the starting point, allowing flexibility of spatial perception from any place and in any position.
- The need for maintaining an accurate direction requires focus, attention and concentration.



For example: Four figures with similar relations between the body parts, each shifting in a different direction in space



Directions of steps in space according to the system of reference
© Illustrations by John Harries from the book "Body and Space in Eshkol-Wachman Movement Notation (Harries/Sapir)

Summary

The Sapir Method is based on the comprehension of a movement that one learns to read, write and execute and its uniqueness resides in the fact that it is translated into a motor-sensory experience. This paper presents some of the principles and working methods according to which the learning is implemented:

- The learning is experiential – through movement, and formal – by means of orienting and defined rules.
- Learners have the freedom and time to succeed within a framework that has a clear correspondence.
- Learners are given a concrete feedback and can apply explicit supervision processes to their functioning.
- An emphasis is placed on collaboration and movement coordination with other learners, based on the newly acquired language. This facilitates and even strengthens inter-personal communication, obliges adjustment of individual time to the general time as well as examination of the acquired knowledge and its comprehension.

The Sapir Method teaches a special language, obliging learners to execute with their body what they have learnt and understood. The learning is different from school-based formal learning in the way that it is acquired. Learners translate a movement into a symbol; read signs and translate them into a movement. Thus, they build for themselves another channel for coping with cognitive processes needed in varied frameworks of learning and life organization.

Endnotes

[1] 'Until here', taken from a collection of articles dealing with the topic: The field of visual literacy. Published by the Kibbutzim College of Education, Technology and the Arts in collaboration with MOFET Institute.

[2] People interested in additional information or in workshops, please contact Tirza Sapir, tel: 052-2538877; amtr@013net.net or Lilach Shalit, tel: 052-5419558; lilach.g.s@gmail.com.

[3] Noa Eshkol and Avraham Wachman created a graphical-literary language that enables a 3-dimensional movement notation of the human body in space and time.

[4] Already from the beginning, John Harries shared with Noa Eshkol the urge and wish to accurately express the world of movement. Moreover, he acted with the purpose of consolidating the ideas at the core of the development of notation as a language (Noa Eshkol: Preface to the book by John Harries: Language of shape and movement, p. vii).

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Tirza Sapir, Head of The Research Center for Movement and Dance Notations at the Kibbutzim College of Education, culture and the Arts. A disciple and colleague of Prof. Noa Eshkol. Head of the Dance and Movement path at the college during the years 2000-2007. In 1986 founded the "RikudNetto" Dance Group, which has been performing until today, and is its director and choreographer. Moreover, developed the Sapir Method for the improvement of learning abilities by means of Eshkol-Wachman Movement Notation and has written about the method in the book entitled "Criss Cross" in collaboration with Dr. Lilach Shalit. Has published nine books: scores of the dance suites – Hanukka Notebooks, Birds (in collaboration with Sharon Reshef-Armoni), Landscapes and Sounds of Landscapes (in collaboration with Nira Al-Dor), Moadim Le-Machol (in collaboration with Shlomit Ofer), In the Footsteps of Painters (in collaboration with Orly Yaacov) and theoretical books – About Time and Body Space in Eshkol-Wachman Movement Notation (in collaboration with John Harries).

Dr. Lilach Shalit, lecturer at the Kibbutzim College of Education, Technology and the Arts and in the Orot Israel College. Moreover, teaches the Eshkol-Wachman Movement Notation for special education – the Sapir Method - and writes in collaboration with Tirza Sapir about the method in the "Criss Cross" book. Member of The Research Center for Movement and Dance Notations in the Faculty of Arts at the Kibbutzim College of Education, culture and the Arts. As of 1998, member of the "RikudNetto" dance group where she is a leading dancer under the instruction of Tirza Sapir.