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Auszug aus:

Montessori concrete – Volume 2

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Note of Thanks

We would like to thank the many children that we have met in the last 30 years and have given us the opportunities to develop a deeper understanding of the statements of Maria and Mario Montessori. In this open and honest dialogue with the children, we could learn to trust them unconditionally, to accompany them with respect and help them and ourselves to develop a sense of self-esteem.

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Foreword

Dear reader!

With this series of books we would like to invite and guide you to get to know Maria Montessori‘s comprehensive, pioneering pedagogy in concrete terms and to learn to apply it „step by step“. This enables you to create a supportive atmosphere in kindergarten and at home, as well as learning situations in which your children can also develop well and optimally according to new standards.

In recent years, the call for a new culture of education has been growing louder. Last but not least, various studies such as PISA or TIMS make us all aware that there is a lot to change in our education system. Certainly, one conclusion is the appearance of new educational plans for the elementary sector. The requirements here are intended to show educators a way to prepare children for the living conditions of today. In many conversations with course participants, we find again and again that many adults have few concrete ideas about how they can adapt to these challenges. They are still imprisoned with the expectations from their most diverse - in some cases long past - training, as well as with their own, not yet processed „parenting experiences“ from their childhood.

It can be observed that Montessori-Pedagogy - in relation to the present time - offers many of these people great help in reflecting on a new job. Why is Montessori-Pedagogy particularly useful? Certainly, this is because this „pedagogy“ emerged from the child‘s observation, which was carried out by a doctor. So, Maria Montessori did not develop a method of education, but as a doctor observed how the child learns and drew her own conclusions from it. This justifies its topicality in today‘s time. When creating the learning environment for children, today great importance is attached to incorporating knowledge from neurophysiology and modern psychology. This is completely in line with Maria Montessori’s knowledge, especially with regard to didactic structure. Thus, her method, which is based on the material she developed, has not lost its appeal.

From today‘s point of view, what has to be examined in particular is the role of the educator. Our experience has shown that the implementation of Montessori-Pedagogy requires a large amount of self-reflection and ultimately results in a genuinely new educational culture which - as Jesper Juul describes - gives us the opportunity to assume responsibility from obedience.

We both had to find out that this was a very intensive process of our own, because even in our training courses on Montessori-Pedagogy we still experienced that in theory there was talk of personal responsibility and self-activity - but the way of dealing with us adults was still predominantly characterized by a culture of obedience.

Thus it is not a surprise for us that in many Montessori facilities where all Montessori materials are to hand, the attitude of the educators however is still strongly characterized by the „old educational culture“.

It is therefore an urgent concern for us to use these manuals[4] to offer educators in the elementary area an opportunity to reflect on their work on a daily basis and to develop the three competencies mentioned by Søs Bayer:

- The competence to enter into relationships with children
- The competence to take an important place in the life of children, even if one is not a parent
- The competence to endure that educational reality is like life[5]

An important concern of this series is to show a concrete guide to how the thematic focal points of the "Educational Plan for Elementary Pedagogy" (BEP) are specifically reflected in Montessori Pedagogy.

The area of **mathematics** is given special importance within the "Education Plan for Elementary Pedagogy" (BEP), because no special attention has been paid to this area in previous "kindergarten work".

Maria Montessori already stressed in the work „Psycho-Arithmetica" published in 1934: „Arithmetic comprises an as yet unknown chapter of „child psychology", especially since it is a form of arithmetic that is rational and in it's thinking geared towards the child. The numbers and everything related to them have served as scientific incentives for mental activity. If you provide "to the child" scientifically defined material that provides him with the basis for reasoned action in a clear and plausible way, not only does it make it easier for him to learn arithmetic, but also to develop a logical depth, of which it was believed that it was inaccessible to children. The materials of arithmetic can be compared to a „gym for mental training". In the meticulous analysis based on the clarity of things and active practice, the mental development is accompanied by all the details, as if arithmetic were the most suitable means for the real psychological handling of the child, an arsenal of experimental psychology."[6]

When working with children between the ages of three and six, it can actually be observed time and again how these young children acquire important basic skills through playful activities with "mathematics", which they can use in later mathematics classes at school.

Maria Montessori speaks of the "mathematical spirit", which draws the child's attention to mathematical structures: They constantly perceive things in different arrangements, sizes and quantities and try to organize them and develop systems. Through this they constantly experience the dialogue between order and chaos.

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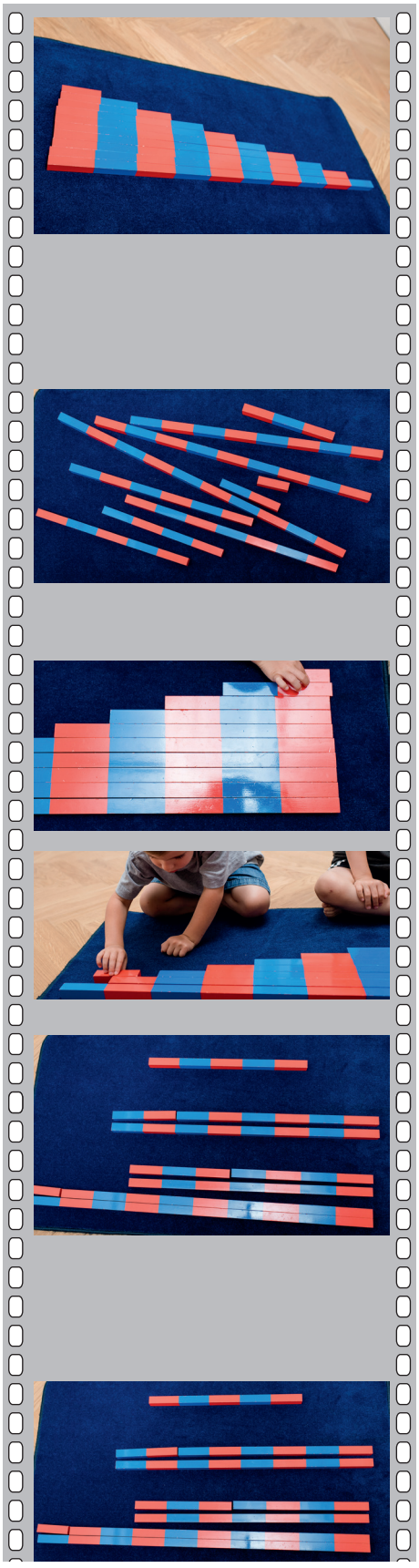
[4] We chose the term „educator" as the name for the accompanying persons of the children, in order to integrate the gender-specific term on the one hand and on the other hand to make it clear that for us this word contains the professional relationship competence, which is characterized by a personal authority and not by role-related authority.

[5] Jesper Juul, „Vom Gehorsam zur Verantwortung", Page 163

[6] Published under the title "Psycho-Arithmetica", Casa Editorial Araluce, Barcelona 1934

Amounts and numbers

Number rods



The 10 Rods lay in order on the shelf.

They are split into 10 mm widths of blue and red. The shortest rod is 10 cm long and the longest rod is 1 m long.

The teacher invites the children to carry the rods one by one to a rolled-out mat until all 10 rods are laying at random on the mat.

It is a pleasure for a small child to be allowed to experience how the order is lifted from the shelf and brought into a new order on the mat. That each individual rod is carried from the shelf to the mat corresponds to the young child's need for movement. The different weight and size are memorized by the muscle memory.

Now the rods are sorted according to size on the mat. The child can take an active part here as the order is already known from the shelf. Here it is interesting to observe if the child begins with the shortest or longest rod.

At the end the shortest rod is used to go up "the stair" to see if the graduations are the same.

The children discover the following while they are playing:

– that different forms can be made with the rods
– that different patterns can arise when laying the stairs
– that more rods together can make the length of a longer rod (addition)
– that one individual rod can be taken away again and only one remains (subtraction)

In the next step the names of the rods are introduced by the use of the "three-period-lesson".

Excursion learning about the three-period-lesson:

In the **three-period-lesson** the classic learning steps are included, that lead the child from learning a new learning object to internalizing it. It is mostly used when naming certain objects or their properties.

In the **first period** the educator establishes the relationship between the object and name, by pointing to the object and naming it: “This is……”. Therefore, object, term and naming are firmly linked.

The second period is the phase of consolidation e.g. contemplation. This phase takes into consideration the level of development of the child. The educator always names the term here - combined with different requests, taking into account the children’s strong urge to move and the special work of the **muscle memory**. The requests here can be: “Give me……; fetch me….; bring me….; put …. there!” etc.

In the **third period** the educator shows an object and asks its name or property. The passive vocabulary becomes active. This period has the meaning of a text. The questions the educator can use are: “what is that?”, “what is it called?”, “how is that?”

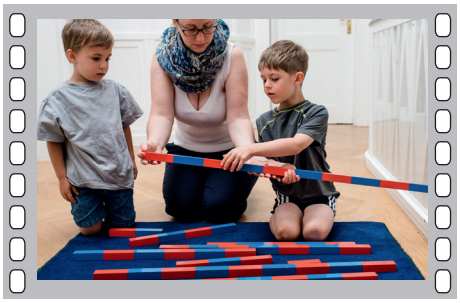
1st period Announce the name

“This rod is called five”

“This rod is called eight”

“This rod is called one” etc.

Important: The naming does not follow in the row from 1 to 10! The strong, contrasting differences are interesting for the child.



2nd period Repetition to imprint the term in connection with the concrete sensor motoric experience.

“Give me the rod!”

“Lay the eight-rod next to the mat!”

“Take the two-rod!” etc.

3rd period The children check their knowledge with the help of an adult (test), errors are allowed and are not corrected.

"What is this rod called?"

The child says the name from memory. When the name doesn't match the rod that is being shown, the educator shows another rod and asks again: "What is this rod called?"

The educator can observe, if the child is sure of the name or is still unsure.

By regularly playing with the materials the child learns the name again and again in connection with the rods, which increasingly gives the child confidence.

A quote from Maria Montessori emphasises again the meaning of the number rods as a first introduction to the numbers from 1 to 10:

"If small objects of any shape whatever are used for counting, as for example, small cubes of the same size, why does the teacher when she sets down the first one say "1", and when she sets down the second "2", and so on? A small child tends to say "1" for each new object that is added. He thus says: "1, 1, 1, 1, 1" instead of 1, 2, 3, 4, 5…".

The fact that the group is enlarged through the addition of a new unit and that this increasing whole must be considered, constitutes the chief obstacle for children of 3½ to 4 in learning how to count. The grouping together of units which are really separate in themselves into a whole is a mental process beyond a child's capacity. In fact, many small children count by reciting from memory the natural order of the numbers, but they are confused when confronted with quantities corresponding to these numbers. Counting his fingers, his hands, and his feet is something more concrete for a child, since he can always find the same objects invariably united in a definitive quantity. He knows he has two hands and two feet.

Rarely, however, can he count with certainty the fingers of one hand, and when he does succeed in doing this, there is always the difficulty of knowing why, if the hand has five fingers he should say of the same object: "one, two, three, four, five". This confusion, which presents no problem to a more mature mind, is an obstacle to counting at an early period of life. Extreme exactness and concreteness of a child's mind needs clear and precise help. When new numeric rods are given to children we see that even the smallest take a lively interest in counting."[4]

[4] Maria Montessori: The Discovery of the Child, Ballantine Books, New York 1972, pages 263-264v

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