

Motor Functions

Perception and Self-Confidence:

a basis for learning in school

Ingeborg Schwarz

The significance of motor and sensory development observation.

The number of children with poor movement patterns, speech disorders, perception problems, and conspicuous behavior is growing, and can be noticed as early as kindergarten. Changed environmental and living conditions increasingly disturb the natural development of the children. It makes little sense to address this issue with ever earlier testing and selection. Weaknesses, deficits and disorders are negative terms and unhelpful in supporting the child. It is better to observe a child closely in order to provide targeted support based on identified abilities. Observation should begin as early as possible.

Motor development:

The motor development of a child occurs in a specific order, independent of culture, social status and gender. It corresponds to the development of the central nervous system. There are certain "milestones" in this process, which normally cannot be omitted without consequence. While the order of development is fixed, there may be significant individual differences along the way. Quality and variability of motor functions are decisive. Every development in motor function is in a close relationship with both neural and sensory development. They cause each other. Well trained Motor functions make for better information intake and transfer.

Perception and Sensory Integration(SI):

An undisturbed information flow between the nerve cells enables the coordination and comparison of sensory information, allowing a holistic and comprehensive picture of the environment to develop (KESPER, SI and Learning, p.13). If information cannot be attributed to a specific experiential background, the child cannot coordinate its actions to react to a change of situation. A linking of stimuli with emotions also takes place in the integrative process. There are

three basic functions for the intake of stimuli: the tactile, the vestibular and the kinesthetic systems, as well as four further systems, hearing, seeing, smelling and tasting. Intact perception with all senses and intact motor functions form a basis for learning and behavior. Lower stages of information flow into higher and visa versa. Information is constantly needed, particularly from the lower stages.

Self-confidence and Self-esteem:

The integration of sensory and motor information allows for consciousness of ones own body and abilities, connected with emotion. An emotionally appropriate evaluation of the self and one's environment, combined with the ability to direct one's actions and reactions, are the foundation of communication, self-esteem and satisfaction (self-respect), as well as of social behavior. Stable self-confidence, a positive physical feeling, and belief in bodily functions are pre-conditions for enjoyment of self-determined learning.

The learning of key skills such as arithmetic, reading, and writing depend on a good development of the basic senses. Conspicuous sensory and motor dysfunction become evident in Kindergarten or the first year of school when children are first confronted with norms. Lack of flexibility and adaptability creates difficulties and frustration, resulting in lower self-esteem. Conspicuous behavior, listlessness and a lack of learning success are secondary aspects of underlying primary problems. It makes no sense to practice reading with a child who cannot yet read. Teachers cannot improve the basic skills in this way- only increase the level of frustration.

Observation:

The child must be seen in the context of its environment and the observations should be conducted in a variety of situations. Observation is also dependent on the

perception of the observer. Not every deviation from the norm need be a deficit.

Observation is crucial to providing meaningful support. Many children who develop difficulties in the first school years already stand out in kindergarten. These noticeable problems are not usually dramatic. They are often a series of minor symptoms which are usually interpreted as being insignificant. However, taken together, they can impair the development of the children. In kindergarten, where play and movement are essential elements of learning, children can be observed well.

Noticeable problems in sensory-motor development should also be taken into account when looking at school difficulties.

But not every behavioral concern leads to difficulties in school. Many can be well compensated for. One cannot predict which examples of conspicuous development will correlate with specific problems in school. Children with pre-existing school difficulties almost always display sensory-motor problems.

There are two interesting studies on this subject, one by KESPER, SIM Institute Olpe, Germany and another by Queens University, Belfast. While conducting a project on this topic in my kindergarten, the observations of the kindergarten teachers correlated to a high degree with the identified problems in the SI Screening.

Possible Problems:

Motor: Bad general posture, unusual sitting posture (e.g. always supports the head), fidgety sitting, maladjusted use of energy, cramped pen grip, inharmonious sequences of motion, constantly open mouth, awkward penmanship, quickly tired, aversion to moving, constantly in motion, constantly falls down, continually jostles others.....

Learning Difficulties: No age appropriate concepts of quantity and space.

Problems with mental arithmetic and word problems, with forming rows and sequences, and with spatial concepts.

Confusing letters and numbers.

Constant questions, because instructions are not understood.

Cannot follow directions.

Omits letters.

Difficulty recounting stories and their temporal and spatial relationships.

Language problems and limited memory.

Behaviour:

Concentration problems, limited attention span, lack of self-confidence, constant aggressiveness, constant clowning, frequent mood changes, loud themselves but very noise-sensitive, the child does not like it when the teacher walks around the classroom or stands behind him, every change trips the child up. Further reading about conspicuous behavior and its relationship to individual sensory organs in J.Ayres, S. Goddard; G.Kesper.

Conspicuous behavior can also have neurological causes or it can be the result of an illness.

Considerations:

It cannot be assumed that all children of the same age share the same pre-requisites at the same time. Teachers must consider this when designing educational programs, particularly those dealing with acquisition of basic skills.

In conveying content, neurological development must be considered:

clear information, much repetition, positive feelings, short, structured units, participation of all senses combined with movement.

examination of a topic through sensory experiences.

transformation of the sensory impressions - e.g. into language.

representing and abstracting e.g. writing and arithmetic.

working in small groups

good co-operation between kindergarten and primary school should be pursued.

mutual determination of children's strengths, from which point support strategies can be developed.

support must be playful and integrated into "normal" everyday life.

mutual parental support.

involvement of the entire environment of the child to discover and strengthen resources.

shared activities as these play an important role in the interaction with children.

application of a variety of concepts to meet the needs of every child.

increased motor and sensory opportunities (integration of Motortherapists, Motorpedists, Ergotherapists etc.).

Some pre-conditions for reading and writing:

- A good sense of balance, a functioning kinesthetic sense, and an adapted muscle tone for keeping the body upright
- Control of neck muscles and position of the eyes.
- Adequate body orientation- to build a relationship between the body and space since this is a prerequisite for a feeling for height, depth and width- an important pre-condition for recognizing letters.
- A feeling for the differences between sides of the body. Without an understanding of left and right, intersection of both sides in the body center cannot function. This ability is needed to recognize letters and follow a line of text.
- An efficient interaction of the eye muscles. If the eyes are not able to fuse effectively, the result is a fragmentary or blurred letter and text image. Letters are confused, own errors are not recognized.
- Good central hearing processing as sounds quickly fade and background noises need to be filtered out.

Depending upon the quality of the above conditions, a functional asymmetry, the co-operation of the two large brain halves develops. The left hemisphere analyzes individual sentence parts based on grammar and semantics while the right hemisphere provides the general context and comprehension. Unless all sensory systems help in processing, difficulties will arise. The better the sensory systems co-operate, the better the child can learn and the easier the learning becomes. If sensory perception is in any way disturbed, the ability to compare information, make associations, and classify is impaired. Recognizing super ordinate principles, planning courses of action, and establishing serial orders becomes more difficult. The ability to solve problems is also impaired. If everything is present the child will possess: attention and concentration adaptability, learning aptitude, willingness to learn and a capacity to act.

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This text was translated by Gordon Lewis.

Looking at a Learner

Hong Kong



An anecdotal narrative of a series of interventions used by a class teacher with a young learner identified with ADHD

Wendy Arnold

This article narrates the process I went through to attempt to be inclusive to a young learner (YL) who had behavioral problems. It was four months before the SENCo (special educational needs co-ordinator) at the school told me that the YL was on the school register as having been identified with ADHD (attention deficit hyperactivity disorder). I had to ask about the problem. This highlighted the

need for a whole school policy on sharing information with all teachers.

Context

The YL is in a class of 35 students in a monolingual, homogenous aided primary school in the New Territories in Hong Kong. The pupils are ten years old. The class is of mixed ability. In addition to the YL with ADHD, the following other YLs were found to