

LEARNING DISORDERS

USE OF THE PERTRA-MATERIAL IN THE DETECTION
AND TREATMENT OF LEARNING DISORDERS



Learning disorders

Learning disorders are an everyday phenomenon. They describe reduced output in the case of intentional learning. They are expressed by the fact that the desired skills, knowledge and behaviour (e. g. reading, calculating, cooperation) can not be learned or executed in the sufficient quality, time and safety. The results are not achieved despite of more reasonable learning offers. Therefore, the pupils are attributed disorders of learning.

Learning disorders are diagnosed when serious performance deficits are identified in a specific school performance area. At the same time, however, the general intellect is in the normal range.

Examples of content-related limited learning disabilities are: Calculating disorder, reading disorder, reading-spelling disorder, isolated spelling disorder, disorder of the written expression.

General learning disabilities are divided in: Learning disability, learning impairment and mental handicap. These are separated from temporary learning disabilities, which could for example lead to a loss of performance

through critical events.

The share of pupils with learning disabilities are increased in the recent years. Therefore, this topic has get more attention. The deficits are increasing in the areas of reading, spelling and calculate skills.

At learning disorders the gender distribution is unequal. Boys are affected 2-3 times as often. At the calculating disability the distribution approximately is equal.

Many learning disabilities often stay untreated. Then it could be difficult to reduce the gap between the actual performances and the demands or rather the risk of secondary symptoms increases. The support with the Pertra-material offers lots of effective possibilities of learning support. The material can be used in the preschool area and in learning programmes as well as in therapy. It can be diversly combined with other media/materials.

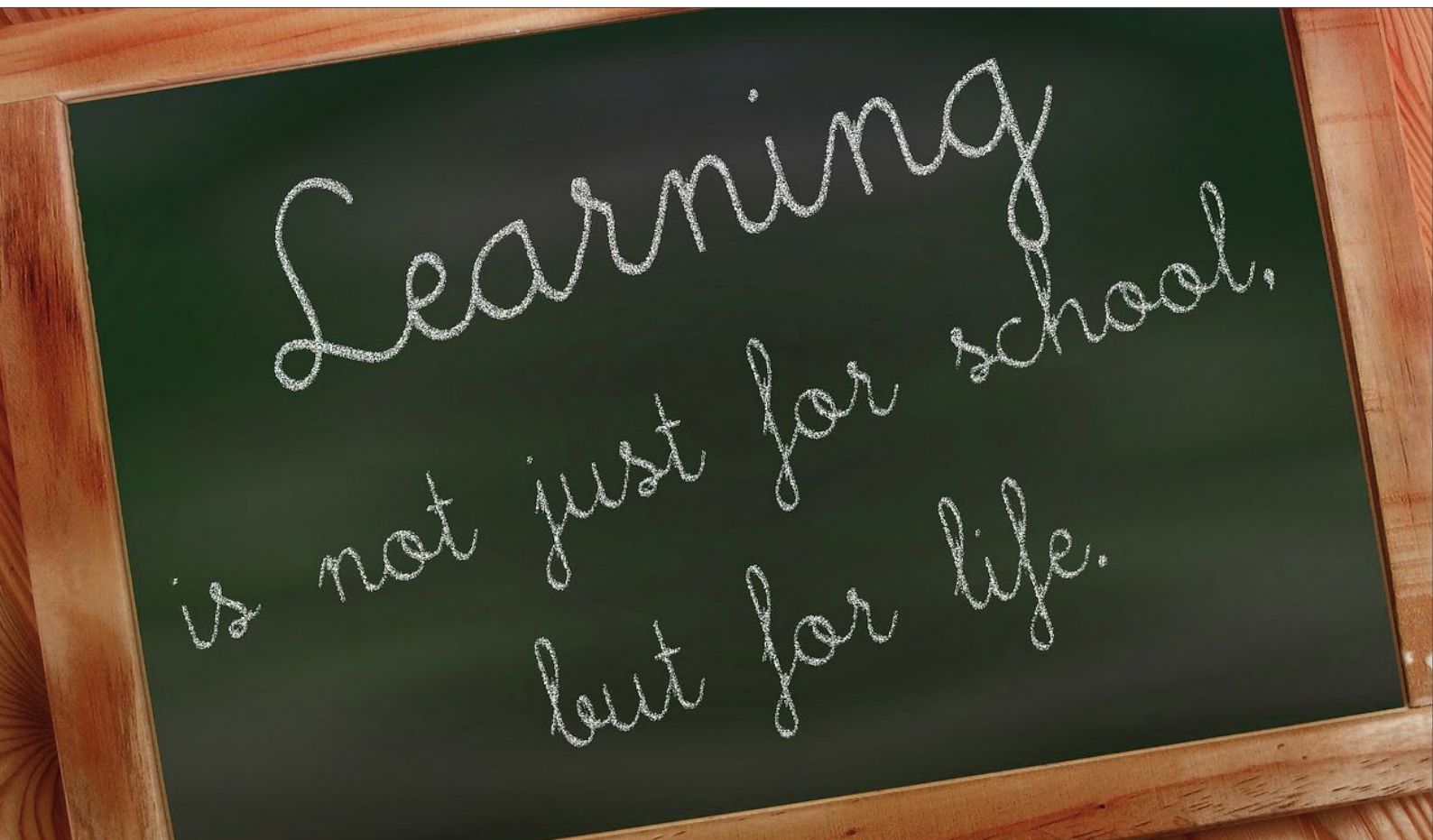
The following deficits could point out learning difficulties in preschool age

- Motor skills

- Tactile-kinesthetic and vestibular perception processes
- Topographical orientation ability, body scheme and action planning
- Visual perception processes / memory processes
- Auditory perception processes / memory processes
- Sensory integration of the various perception areas
- Verbal memory and speech comprehension

Examples of content-related limited learning disorders or motor functions

- Calculating disorder / dyscalculia
- Dyslexia / reading-spelling disorder/ reading disorder / isolated spelling disorder
- Graphomotor disorders / fine motor disorders



Graphomotor skills

Learning to write is besides other factors tight related with the motor development.

The pen is held securely in the tripod grip. Through a good and coordinative interaction with hand, arm and shoulder, fluent writing movements are possible. This allows detailed designs of letters and numbers.

Through the controlled movement possibilities, the school child can write increasingly better within the given lines and boxes. For this purpose it requires a coordination of writing movement, space design and shaping.

Amongst other things the accuracy is determined by the ability of the eyes to control with the hand. This is called visual-motor coordination. The speed of writing depends on the automation of the movement. The higher the automation of the writing operation, the lower the degree of attention which it claims.

Writing problems are e. g.:

- Tensed writing
- Extended writing
- Tempo difficulties
- Too high writing pressure
- Disorder of the writing flow
- Immobile fingers
- Tension of pen posture in poor posture
- Misdirected writing approach

Application field of Pertra-Material

With the modules 'Hand skills' and 'Graphomotor' the material allows to train following sub areas:

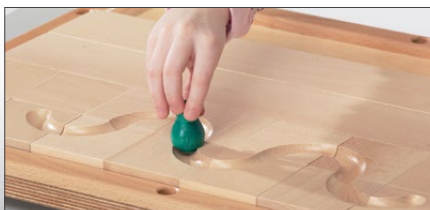
- Eye-hand coordination
- Pen posture
- Strength regulation
- Crossing the center line
- Finger mobility
- Hand-hand coordination
- Tactile-kinesthetic perception
- Visual perception
- Spatial-constructive abilities
- Motivation
- Memory
- Symbol understanding
- Motor planning
- Flow of movement



Pertra® case 'Hand skills'



Pertra® case 'Graphomotor'



Calculating disorder / Dyscalculia

Pertra® case 'construction'



Pertra® case 'classification'



Pertra® case 'discrimination'



Pertra® case 'relation'



Pertra® case 'mathematic'



Calculating disorder is a general term for all learning disabilities that are related to the acquisition of mathematical competences.

Diagnosed the calculation performance is clearly below the age and class and there is a significant discrepancy to intelligence and other learning performances.

Simple calculation operations are affected:

- Addition
- Subtraction
- Multiplication
- Division
- Less the higher mathematical abilities

Examples of characteristic calculation problems

Kids with calculating disorder show very different performance profiles and various combinations of symptoms. Those who are affected lack the basic mathematical understanding and they can implement the further learning steps only with difficulty or inadequately.

Characteristic problems as signs and symptoms for a dyscalculia:

- Prenumerical skills
- Classification performance
- Seriation performance
- Quantity-number-numeric value allocation
- Quantity variance
- Simultaneous quantity acquisition
- One-to-One allocation

Counting skills

- Numeral row can not be formed
- Resultative or abbreviated counting is only insufficiently performed

Number concept determination

- Cardinal aspect (numerals describe the opportunity of a number of objects, e. g. 7 candies)
- Ordinal aspect (the numeral appoint the position / The rank of an object in a row with a specified starting point, e. g. the third child of right)
- Aspect of counting (the spoken numeral refer to an object in an amount of objects, e. g. the counting of marbles)
- Operator aspect (the multiple of a process is described, e. g. 'twice as much')
- Measured value aspect (as measured value for sizes, e. g. 3 liters, 4 meters)
- Non-numerical aspect (numeral for marking or differentiation, e. g. player with the number 12)

Detachment from the acting level

- To remove real objects (e. g. fingers) from an acting level and transfer them to the pictorial or symbolic level is not possible or only partially. Therefore, the automation of individual mathematical performances is only inadequate

Decimal system

- The insight in the decimal system is complicate

Pertra-Material as learning material for the improvement of numeracy

Adapted to the individual symptoms and results of the findings the Pertra-Material offer targeted help in the following areas:

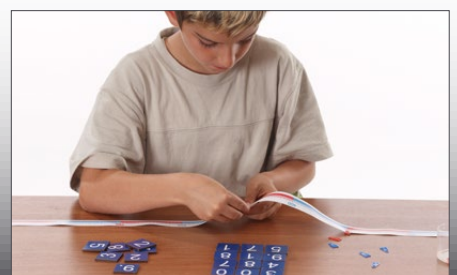
- Construction
- Classification
- Discrimination
- Relation
- Mathematic

Specific notes for a targeted use in cases

- An individual calculating training is recommended, which especially starts at the missing basic competences. This offers the child a corresponding basic training
- Consideration of the individual learning level, a clear focus on the transition from achieved and no longer achieved learning steps. Important approach: Firstly one level back again, strengthen these and then pass to the next learning level
- Motor learning takes place through practical and not only abstract handling of calculating material. This way of learning is a method to be grasped in the period of kindergarten and primary school
- Advancement of the mathematical understanding, strength-oriented learning strategies and work techniques

Additional:

- Degradation of math anxiety and emotional discharge
- Strengthening of motivation



Reading – spelling disorders

Reading-spelling disorders and their definition

This is a general term for all spelling disorders, which stands in relation to the acquisition of the written language.

According to the 'International Classification scheme' ICD-10 of the World Health Organization (WHO) a circumscribed reading and spelling disorder exists if:

- Persistent and unambiguous weaknesses in reading and spelling could not be attributed to the developmental age
- Under-average intelligence
- Lack of training
- Mental illness or brain damage

In ICD 10 a distinction is made between:

- Reading und spelling disorder (F81.0)
- Isolated spelling disorder (F81.1) (World Health Organization, 2005)
- Isolated reading disorder

Characteristic problems with reading are:

- Slow reading
- Frequent stagnation
- Loss of the line in the text
- Words, syllables or single letters skip, add or interchange
- What has been read can only be reproduced or interpreted inadequately

Characteristic problems with spelling are:

- A high error rate for untrained dictations and deprecated texts
- Words partially fragmentary and often wrongly spelled differently in the same text
- Many grammar and punctuation errors and
- An unreadable handwriting

Dyslexia und its definition

A pronounced learning disorder in the areas of reading and spelling, which is not due to lack of training, low intelligence or lack of willingness to learn.

Frequent symptoms (in accordance to Barht) at reading-spelling disorders

Examples:

Visual information processing

- Visual recording and differentiating of letters
- Recording of the spatial position of individual letters
- Form constancy
 - Targeted help through the use of Petra-Learning Material
 - Discrimination
 - Classification
 - Construction
 - Relation

Graphomotoric deficits

- Motor performance
 - Targeted help through the use of Petra-Learning Material
 - Hand skills
 - Graphomotor

Neuropsychological anomalies

- Mnemic (retrieving the letters from the memory)
- Spatial-constructive
- Attention
 - Targeted help through the use of Petra-Learning Material
 - Concentration box
 - Classification
 - Construction

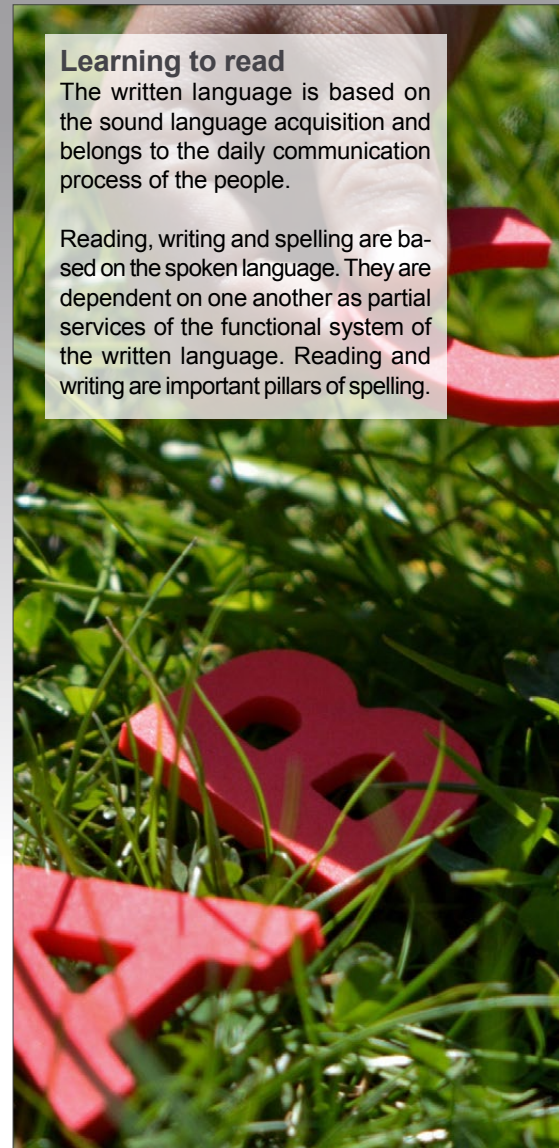
Disorder of auditory information processing

- Sound analysis
- Discrimination ability
- Kinesthetic discrimination ability

Learning to read

The written language is based on the sound language acquisition and belongs to the daily communication process of the people.

Reading, writing and spelling are based on the spoken language. They are dependent on one another as partial services of the functional system of the written language. Reading and writing are important pillars of spelling.



Pertra® Material complete with 7 cases

The Marianne-Frostig concept formed the basis for the development of the Pertra-Material. Through recent findings on the child's development, the Pertra-material is constantly undergoing further development. Today Pedalo-Pertra comprises 7 cases and thus the following development areas:

- Sensorimotor (hand dexterity)
- Language (concept formation)
- Visual perception (in relation to learning skills)
- Higher cognitive processes (memory performance, deductives und inductives thinking)
- Graphomotor
- Mathematics

The individual areas of development are

promoted in the acting confrontation in an action-oriented manner. If the therapist or pedagogue takes the humanistic attitude of the Frostig concept, the interaction also promotes social and emotional competence.

In addition to the task-oriented use on the basis of new development models, the Pertra-material can also be used for the development of creativity and imagination.

Through its theoretically well-founded use, the material is extremely effective in use, both in children and in the rehabilitation of adults and should not be missed in any institutions or therapeutic institutions. The material can be used as a supplement, on the level of action and in all current therapeutic concepts. The Pertra-Material is recommended for the implementation of the

Marianne-Frostig concept in pedagogy and therapy, by the international Frostig Society.

Further information to the Pertra-Material, to seminars and application possibilities can be found on pedalo.de under **Pedalo-Academy**.

Further information

Practice examples and other Pertra-products can be found in the catalog.

Download now under www.pedalo.de



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