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FIE ako nástroj na korekciu deficitných funkcií u detí a mládeže s poruchami správania

FIE as a Tool for Correcting Deficient Functions in Children and Students with Behavioral Disorders

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Abstract

The paper has a theoretical and application character. Nowadays, the issue of education of children and pupils with behavioural disorders (specific as well as non-specific disorders) is highly topical as their number is constantly growing in regular primary and secondary school classes. Therefore, it is necessary to pay attention to the specifics of their education. In the theoretical part, the authors deal with the issue of the disorders; they describe its etiology as well as the symptoms as possible consequences of the present impairment of partial functions in the perceptual-cognitive area. The application part of the paper is focused on presenting the essence and content of the instrumental enrichment method, the creator of which is the Israeli pedagogue and psychologist, Professor Reuven Feuerstein.

Keywords: Behavioral disorders. Cognitive causes. Attention Deficit Hyperactivity Disorder (ADHD). Feuerstein's Instrumental Enrichment (FIE).

Introduction

The submitted theoretical study focuses on the current problematic area of behavioural disorders (specific as well as non-specific disorders), their possible correction, elimination, or, at least, alleviation of unsuitable and undesirable manifestations resulting from the given diagnosis. We used the approved method by a significant pedagogue and psychologist – prof. Reuven Feuerstein (1921–2014), called *Instrumental Enrichment*.

The Feuerstein method of Instrumental Enrichment (FIE) has its basis in two essential theories we describe and explain more in detail in our lecture: *The theory of structural cognitive modifiability* and *The theory of experience-based learning*. Based on this theoretical platform, Reuven Feuerstein elaborated a programme consisting of more than 500 pages with “pencil-and-paper” tasks. This programme works with two sets of instruments (*Standard set*: age

8+ and *Basic set*: for children aged 3+ and for pupils with special educational needs). Each set focuses on a specific cognitive deficit, but, at the same time, it also develops the emotional and social components of participants' personalities (Váňová, 2018)

Behavioral disorders and their etiology

Within the context of the topic in our paper, that deals with the possibilities of developing attention as well as executive functions by Feuerstein's instrumental enrichment, we will focus on two groups of behavioral disorders, but more detailed on the first group - hyperactivity and attention disorders:

1. *Specific behavioral disorders (ADHD, ADD)* the specificity lays in the fact, that they are congenital disorders, the manifestations of which the child is unable to influence, at least from the beginning. The cause lies in abnormalities and impaired CNS functions (neurodevelopmental disorder), minor brain damage, biochemical changes in the CNS, which can subsequently cause motor-perceptual disorders, emotional developmental disorders, as well as disorders of cognitive functions and social adaptability. According to Zelinková (2015), ADHD is a neurodevelopmental disorder characterized by an inappropriate degree of attention, hyperactivity and impulsivity. These problems are associated with the inability to follow the rules of conduct and to perform certain repeated tasks for longer period of time. Other symptoms include the reduced performance in school, aggression, problems in making contacts with peers, intolerance, inability to submit to authorities and generally accepted rules, aggressive solutions of interpersonal problems. Although they know what behavior is required, these children are not able to transfer knowledge into specific situations. In addition to impaired attention, a significant manifestation of hyperactive disorder is the insufficient development of executive functions, which we will mention in the next part of the paper.

These diagnoses are often accompanied by manifestations of the second group, which is represented by the so-called:

2. *Nonspecific behavioral disorders* (socialized, non-socialized, limited to the family circle, oppositional defiant disorder), the cause of which we perceive in the external environment, resp. in inappropriate educational influences of insufficient or incorrect education (Debnárová Grznárová, 2019; Jucovičová, Žáčková, 2017; Gavendová, 2019).

Cognitive background of behavioral disorders

To guarantee the effectiveness of correctional programs, it is necessary to examine the causes and reasons that lead children, pupils or students to inappropriate forms of behavior. The more corrective actions are focused on the source of the behavioral disorders, the higher is the probability of their

positive influence on the change of negative features of behavior. Examining the symptomatology of behavioral disorders and their etiology, is evident that this is a multifactorial phenomenon when it is not possible to determine precisely which area of influence is dominant or unique. They have an extremely diverse background. There are number of theories that try to explain the origin of child's difficulties. Concerning the current knowledge, it is mainly the interaction of several pathogenic genetic / dispositional, family, and social factors. We cannot be deterministic: "cause and effect". However, there are always several interactions. Our paper will be focused on *cognitive causes* as the FIE method mainly corrects deficient cognitive functions.

The most common reason why parents visit professionals such as psychologists or special educators, are learning or behavioral disorders. The learning disabilities are usually considered to be more significant than other symptoms of the child's behavior. However, we often learn through interviews that the child showed resourcefulness in behavior even before the manifestation of learning disabilities. The possible causes of problems in behavior and consequently in learning are different. We would like to uncover those that can be eliminated or at least reduced by Feuerstein method - specifically, *deficits of partial cognitive functions*.

Cognitive functions (CF) can be considered as prerequisites for thinking. It is a set of tools to understand the problem, the task and find the appropriate solution, as they are essential for the existence and manifestation of mental operations as well as for any other behavioral function. Cognitive functions are not innate. They develop because of mediated learning during normal activities at home, school, or anywhere. Cognitive functions can be divided into three groups according to the phase of mental activity. There are no precise boundaries among them, but close connections. Focusing on some of them can help locate the source of inadequate responses and reactions and determine the extent of required mediation. We present those that may be most closely related to behavioral disorders (specific or non-specific, Gavendová, 2019; Feuerstein et al., 2014; Váňová, 2018; Lebeer, 2006).

1. INPUT (receiving information to fulfil the task; gathering information)

systematic examination and retrieval of information	deficient cognitive function - CF: <i>impulsive, ill-conceived, unsystematic behavior</i>
the capacity to take into account more than one source of information	deficit CF: <i>inability to use two or more sources of information</i>
well-developed orientation in space and time	deficient CF: insufficient orientation in time or space - difficulty in planning

2. PROCESSING – ELABORATION

the ability to recognize and define the problem	deficient CF: <i>insufficiency in problem recognition and / or in its definition</i>
selection of important and relevant information and the ability to disregard the insignificant on	deficient CF: <i>inability to distinguish important and unimportant information</i>
planned behavior, awareness of the steps leading to the solution	deficient CF: <i>impaired or reduced ability to plan - reactions without thinking</i>
the awareness of relationships and contexts, the ability to understand them, relationships of “cause and effect”, purposeful relationships, family relationships, time relationships	deficient CF: <i>insufficient need to recognize relationships, episodic understanding of reality</i>
deductive and hypothetical thinking	deficient CF: <i>limited ability to draw conclusions</i>
use of logical inference and reasoning - be able to justify the choice of solution	deficit CF: <i>lack of need to follow logical evidence; acceptance of the position without its critical examination</i>
the choice of system	deficient CF: <i>insufficient ability to determine the framework for solving the problem</i>

3. OUTPUT

thinking about answers, prudence before answering	deficit CF: <i>expression by trial-error method, impulsivity, guessing answers</i>
stay calm, prevent a mental block, look for a new solution in another way	deficient CF: <i>blockage, panic, boycotts everything, stops looking for the correct solution</i>
the ability to rethink response	deficient CF: <i>impulsivity</i>
aptness and accuracy in communication - a response with sufficient details to avoid misunderstandings	deficient CF: <i>lack of accuracy in communication, inadequacy in the formulation of answers</i>

Consequently, we explain the deficits of partial functions in information processing as understood and explained by the well-known Austrian clinical psychologist Brigitte Sindelar (2014, 2016). Imagine a child or a student as a tree, resp. the development of their thinking and learning. The roots and trunk represent basic abilities. The prerequisite for thinking and learning is the ability to concentrate and the readiness to receive the information. All abilities pass through the trunk, from which large and small branches can grow. From these beginnings, the basic skills develop over a very short period. The mentioned basic skills include for example capturing, processing, grouping, and remembering what the child can see, hear, feel, and how the child develops motorically. Based on the image of the tree, all what we observe in

child's behavior, all the ways, skills, manifestations, speech and later reading, writing, counting, represent the crown of the tree. The way, in which the crown is developed, depends primarily on the level of development of the roots and trunk. The individual partial functions are presented in this area. They mature during the development of the child, enter into a mutual connections, so that the tree becomes harmonious and bushy. Terms such as "basal" or "basic" function are also synonymous with the term partial function.

If we talk about the pupil with the deficit of partial functions, we refer to the pupil whose level of development is not harmoniously developed in these basic or partial functions. We think about the child who shows irregular development in partial functions or basal functions of higher thinking. This means that the smallest building blocks of higher cognitive processes are immature in these children, they are much less developed than other building blocks. However, this imbalance in the maturation of basic functions or partial performances is usually not detected at the age that is related to the area of roots and trunk, particularly in infancy and early childhood. The deficits of partial functions are most often manifested in school age, i.e., in the period of life in which the impact of deficits of partial functions is used as a symptom of learning or behavioral disorders. Concerning the image of the tree, behavioral disorders are irregularities, uneven ripening in the crown, which may be conditioned by partial immaturity in partial performances (Sindelar, 2014).

The symptom we can observe in the crown of a tree is always specific to the age of the child. We perceive different manifestations in the child in kindergarten (impaired graphomotor skills, speech disorders, difficulties associated with adhering to the rules of playing together etc.), when comparing to school-age pupils (dyslexia, dyscalculia, impaired concentration, behavioral disorders). The fact which external symptoms are manifested, depends on which partial function is immature. The symptom is only a consequence of impaired partial function. The deficits in these functions are one of the many possible causes of child's behavior or learning difficulties. But the truth is that they belong to the most common causes (Sindelar, 2014). The impact of the deficit of partial functions may be different. They can affect both the child's learning and behavior. The impact of deficits of partial functions on child's behavior is not often observed for a very long time and can lead to massive emotional difficulties. Common educational tools work only for a short time, but do not lead to permanent changes. We can achieve a short-term fulfilment of the requirements placed on the child through threats of harsh punishment. However, they lead to constant stress and overburdening of the child in the long run, which result in feelings of inferiority reflected in behavior and affect their mental state. Therefore, if we want to help the child, it is necessary to focus on root healing.

The consequences of specific and non-specific behavioral disorders can be divided into the following areas:

1. educational: inability to estimate the level of workload, difficulty in organizing and planning activities, as a consequence, they remain within ineffective learning strategies that lead to school failure, criticism of teachers, negative attitude towards school, that is in turn related to the socio-pathological phenomena (truancy, bullying, addictions, etc.).

2. work and professional: the probability of professional failure is often caused by impulsive behavior, inability to control one's emotions, low tolerance of stress as well as inability to act systematically. They have a problem concentrating on their work, their results are often very superficial with a number of mistakes, or they do not even meet and complete the assigned tasks and requirements.

3. social and emotional: developmental delay in the field of socialization (lower level of communication and social skills; insensitivity; inability to cooperate; behavior is not appropriate for their age, therefore, their peers reject them); negative evaluation and frequent criticism by parents, classmates and teachers contribute to the creation of a negative self-image of children with behavioral disorders (image of an unable, problematic, unwanted, unacceptable, unsuccessful person, etc.), as a result of which they tend to be emotionally unbalanced, irritated and they experience a feeling of discomfort. Therefore, they try to defend themselves against this psychological burden in various ways: *escape* from school and home, escape into illness, drug and other addictions; *regression*: a tendency to return with one's behavior to a younger age; facilitating or negating personal failures; *drawing attention* to oneself (Tichá, Kováčová, 2015; Jedličková, 2019).

FIE as an effective preventive and corrective tool

The method of the Israeli pedagogue and psychologist (which began in the 1950s) is a practical tool based on elaborated theoretical concepts. The main goal of this program is the correction of cognitive functioning ("learning to learn") within the entry, elaboration, or output phase of the cognitive process. This goal can be specified by using other partial goals: it develops inner motivation and active learning, vocabulary, deep thinking, bridging the acquired knowledge into real life, removes impulsivity and fear of error, restores positive self-image and self-esteem, teaches to classify and structure knowledge, creates strategies to solve the problems, respects the pace of each child or adult - does not use competition, helps the better orientation in one's lives, and of course develops attention and executive functions (Málková, 2008; Lebeer, 2006; Feuerstein et al., 2014). This intervention program, resp. work with specific aspects of individual instruments, also develops the *social area* of the child or adult. It changes and directs their attitudes to the life

situations, teaches them to confront problems and adequately solve them, has the potential to correct and prevent problems in behavioral disorders. FIE participants also acquire the following competencies, which are usually not developed among the students with behavioral disorders: problem-solving competencies; communicative, social and personal competencies.

Soft skills education aims to develop cognitive functions, to plan work and think, or to set strategies leading to the tasks solution and create the content of executive functions. The aim of the FIR program is to develop the learning potential of the student, which is grasped in broad context. It uses a set of „pencil and paper" exercises created by Professor Reuven Feuerstein and are divided into individual instruments. All instruments are designed to acquire the prerequisites for learning. The method accelerates students' thinking, increases learning efficiency, brings joy and peace to any work, and teaches students to work with error. The emphasis is on speech development. The student has to be able to express every thought and strategy he uses. Through speech, he interiorizes certain information and the strategy, that means, he learns it and is able to use it also in other circumstances as well. He has to answer correctly and adequately or solve a specific task. Therefore, not only vocabulary is systematically cultivated, but also accurate expression in terms of content and form. Pupils are encouraged to have an inner motivation to learn through the wording "Think about it". The logo of the whole program says: "Just a moment... let me think!" Students are challenged to follow it in each task, so it gradually becomes a part of their strategy. Additionally, the student accepts sharing responsibility in learning. The teacher tries to decrease the passivity of the students and demonstrates that they are able to work and perform. Every student is allowed to be successful. The focus is to put on cooperation, listening, sharing ideas and ways to approach the tasks. The content sharing includes also a strategy for problem-solving tasks. It is even assumed that each student can see a certain problem from his or her point of view, which is given by his experience and is influenced by the culture and social environment in which he grew up. Students should learn how to be tolerant of others. Such leadership has a direct impact on orientation in personal and social life. Students should learn to reflect on their thinking, evaluate their cognitive skill and generalize ways of thinking. They learn metacognition or metathinking. The FIE program connects and applies the acquired skills in real life, with all the branches that an individual encounters.

Conclusions

One of the goals of Instrumental Enrichment is to improve school results or performance. But more important is that individuals develop such mental dimensions through the development of tasks that they are able to adapt to different situations. This resembles a change of existing ways of

thinking and behaving, a struggle with external impacts (nowadays, they certainly include the dangers of the virtual world), from which, however, it is also possible to receive impulses. The ability of self-direction and self-control that the FIE tries to develop in the individual should enable them to set the criteria for the existence, which will result not only in a more adaptable person but also in a balanced personality who can have a positive impact on family, community, and society. And that is no less important today than good school results. Although Instrumental Enrichment is primarily aimed at correcting deficient cognitive functions, the participation in the FIE program has a positive impact on the overall life of the individual within the family, school, among peers etc. Moreover, it achieves changes in attitudes, abilities, or personal perceptions. In Slovakia, its application in children or adults is still in its beginnings. Therefore, the ideas outlined in the present study should be perceived as the inspiration for more active use of the FIE correction and prevention program in our country for children and students with (and not only) behavioral disorders and special educational needs, but also for the intact ones.

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