

# DYNAMIC ASSESSMENT OF PRESCHOOL CHILDREN: METHODOLOGICAL IMPLICATIONS OF THE ACFS METHOD

Maria Hrenakova – Petra Jedlickova

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## Abstract

This paper deals with the issue of dynamic diagnosis of cognitive and executive functions in preschool children, focusing on the use of the ACFS method as a tool for assessing a child's potential and current performance. The aim of the study is to describe, analyze, and apply the selected ACFS method in preschool children. In addition to the theoretical framework, the study also includes the conclusions of empirical research obtained through a qualitative research design, created by a methodological context consisting of a combination of the application of the ACFS method of dynamic assessment, observation, and anamnestic questionnaires, which were then compiled into detailed case studies. The research sample consisted of two carefully selected cases where the application of the ACFS method revealed significant differences between pre-test and post-test performance, especially in areas with identified deficits. The changes recorded point to the importance of the interventions that dynamic assessment enables and demonstrate the method's ability to support adaptive cognitive development, flexibility of thinking, and the acquisition of effective learning strategies. These findings document that dynamic diagnostics not only reveal latent learning potential but also enable targeted modification of a child's cognitive processes and behavior, which has a significant impact on their readiness and success when entering the school environment.

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## Key words

dynamic assessment, ACFS method, cognitive functions, pre-school age

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## Introduction

In the pre-primary education environment, child diagnostics play a crucial role in mapping a child's abilities, level of readiness, and individual needs. Despite the ongoing inclusion, current diagnostic procedures, not only in the field of preschool education, often emphasize performance assessment and final results, which can lead to the generalization of children's abilities and overlook their individual potential. Traditional static diagnostic approaches capture the child's current performance to a greater extent, but reflect much less on their potential for learning progress or response to professional support. It is this fact that opens up space for more modern approaches that monitor not only the result but also the learning process itself. One such approach is dynamic assessment, which enables active involvement in the diagnostic situation, allows for adjustments to learning conditions, and facilitates observation of how the child progresses in response to intervention. Within the framework of dynamic diagnostics, the ACFS method is a practically oriented tool that focuses on cognitive functions and learning strategies related to preschool curriculum. The ACFS provides a space not only to verify the child's current performance, but also to monitor their cognitive modifiability, flexibility, and ability to transfer acquired knowledge to new situations. Thanks to this, it can provide significant support in identifying the causes of difficulties, in establishing pedagogical support, and in preventing school failure. The aim of this thesis is not only to present the principles of dynamic assessment in theory, but also to demonstrate the practical applications of the ACFS method in assessing children's cognitive abilities and executive processes. Special attention is paid to the research conclusions of two case

studies in which the diagnostic process included not only an assessment of the current level of abilities, but also interventions aimed at supporting deficient areas. The findings demonstrate that dynamic assessment not only facilitates more accurate identification of individual needs but also effectively stimulates cognitive development in the preschool environment, thereby contributing to a more inclusive and adaptive preparation for school attendance.

### **Dynamic diagnostics**

In today's world, where we focus on inclusion and an inclusive approach, we strive not to view any child through the lens of a diagnosis, whether it is a child with special educational needs or a child requiring individualized support based on specific support measures. However, upon closer examination of the matter, considering the diagnostic process, we arrive at the conclusion that the diagnostic methods themselves are primarily focused on the outcome and the establishment of a diagnosis based on deviation from the norm compared to others. This can often lead to a child ending up with a diagnosis, but we forget the deeper meaning of what caused it, what the diagnosis is based on, and how to proceed. We may ask ourselves: Is this the right approach? Could we have done something differently? Wouldn't it be better to look deeper into the child's mind during the diagnostic process and allow them to convey something unknown? Does the diagnosed individual react in the same way in other stimulating environments? Why does he or she excel in some areas and fail in others? These questions can be answered by a more modern and alternative form of dynamic diagnosis, which is increasingly appearing in the field of diagnosing children, pupils and other individuals, because dynamic diagnostics not only seek to determine the value of an individual's cognitive functions, but also to identify the child's potential and determine their long-term cognitive change. In view of the above, dynamic testing is often described as the "antithesis" of static diagnostic testing. However, the role of dynamic diagnostics is not to question static forms of diagnostics. Both methods can be classified as useful and valuable diagnostic models. Even authors who focus on dynamic diagnostics consider it to be a more innovative form of static diagnostics, which is beginning to take on a whole new meaning in contemporary education and diagnostics. These authors include Feuerstein (2014), Stenberg (2002), Haywood (2007), Valenta (2020), Tzuriel (2015), Dzuka (2010), and authors such as the Czech pioneer in the field of dynamic diagnostics Krejčová (2016), the founder of the ACFS method Lidz (2014), and others. Their findings largely coincide, even at the very inception of dynamic diagnostics. They argue that the reason for the emergence of this method was primarily the inadequacy of traditional static tests and dissatisfaction with static assessment in providing accurate information about an individual's learning abilities, specific functional deficits, but also about the processes of cognitive change and the strategies responsible for cognitive flexibility. It was cognitive flexibility, whose main pillar is the brain plasticity described by Feuerstein, together with Piaget's findings on cognitive development and Vygotsky's zone of proximal development, i.e. the assumption that cognitive development takes place within various social interactions, one of the main concepts in the creation of a dynamic diagnostic process (Feuerstein, 2014; Valenta et al., 2020; Krejčová, 2016; Lidz, 2014; Passing, Tzuriel & Eshel-Kedmi, 2016; Grigorenko, 2008; LEEBER, 2006; Lidz, Gindis, 2003). Based on current theoretical approaches, dynamic assessment can be understood as an interactive process that not only identifies the structure and weaknesses of an individual's cognitive functions, but also focuses on revealing the potential for change within their cognitive system. The aim of dynamic assessment is to monitor the transformation of individual abilities, skills and knowledge that occurs through mediated interaction between the child and the specialist. This approach allows for a comprehensive understanding of the child's current level of cognitive

functioning and at the same time supports their development by providing purposeful mediation aimed at overcoming difficulties in the learning process (Krejčová, 2016; Benjamin & Lamofsky, 2002; Haywood & Lidz, 2007; Lidz & Gindis, 2003). Tzuriel (2015) further mentions, in connection with the goals of dynamic assessment, the goal of emphasizing the improvement of the performance of the assessed individual with the support of evaluating the effect of various training strategies. Before starting the dynamic assessment, it is essential to be aware of a few general rules that help improve the process, focusing more on the child, the learning process, and the environment in which the diagnosed individual finds themselves. These rules, first and foremost, include an interdisciplinary approach, which involves assessing the diagnosis from the perspectives of multiple experts. Furthermore, it is necessary to emphasize the importance of mutual interaction, which consists in recognizing that individuals are simultaneously influenced by several important people (parents, peers, educators, teachers) and social variables (aids, curriculum, education system, kindergarten climate, etc.). This knowledge is also related to a rule based on the knowledge and understanding of values related to inclusion and, simultaneously, diagnosis (Lebeer et al., 2013; Lidz & Krejčová, 2014). Last but not least, we must also focus our attention on the concept of dynamic assessment, which can be used in two forms, characterized by Grigorenko and Stenberg (2002) as dynamic testing in a "sandwich" form, consisting of a pre-test and a post-test, between which instructions are given. This format is known to us as the implementation of dynamic diagnostics through a pre-test (determining the current level of cognitive functions), intervention (solving problems that are a prerequisite for an individual's poor performance), and a post-test (which determines the extent of improvement in cognitive function compared to the initial test). This form of dynamic testing is favored and used by the author Lidz, who focuses mainly on the course of intervention as a way of collecting data about the child, which we then use in further diagnostic stages. According to the authors mentioned above, the second option is to carry out this type of diagnosis in a "pie chart" form, which consists of providing instructions and mediation individually after each test item. However, this form is not widely used in this process and is therefore taking a back seat. What is important in both forms, however, is the correct assignment of tasks. In the process of dynamic diagnostics, these steps should follow one another based on a certain level of difficulty, allowing the diagnostician to monitor the child's learning process. In addition, during the examination, we must ensure friendly cooperation between the diagnostician and the diagnosed individual, based on a high degree of assistance and communication, while not forgetting to focus our attention on the individual's needs with the primary goal of seeking their potential and hidden possibilities (Valenta et al., 2020; Krejčová, 2016; Lidz & Krejčová, 2014; Lidz & Gindis, 2003; Chaffey & Bailey, 2008).

### **ACFS method of dynamic diagnostics in preschool children**

In the preschool period, dynamic diagnostics is an important tool for assessing the cognitive functions and learning potential of children before they start school. Recognized approaches include, for example, Budoff's standardized procedure, Tzuriel's test batteries, The Cognitive Modifiability Battery and CATM – The Children's Analogical Thinking Modifiability Test or FTCM – The Frame Test of Cognitive Modifiability; Fabio's TIP test; and Džuk's dynamic test of latent learning abilities (DTLUS) (Bielik, 2021; Dzuka, 2010; Krejčová & Lidz, 2014). However, one of the most significant approaches in this area is the ACFS – Application of Cognitive Functions Scale, which is an individual approach to dynamic diagnostics designed primarily for preschool children. It aims to capture the way a child solves tasks, responds to mediated help, and how they can transfer the acquired knowledge to new situations. This method is based on the principles of reciprocal interaction, mediation of meaning and transcendence, which enable the specialist to identify not

only the current level of cognitive functions but also the degree of their modifiability (Lidz & Haywood, 2007; Krejcová, 2016). The diagnostic procedure is designed as a three-phase cycle that respects the so-called sandwich structure of dynamic diagnostics. This process is carried out in three stages – pre-test, intervention and post-test – each of which pursues a different goal and provides specific information about the child's performance. Overall, the diagnostic process takes approximately 60 to 90 minutes and can be divided into several sessions according to the child's needs. Their aim is to capture the way in which the child learns, responds to stimuli and applies new strategies when solving tasks related to reading, writing and arithmetic. It is worth noting that this method can be applied not only to children with typical development, but also to individuals with delayed speech development, impaired communication skills or mild mental disabilities, provided that verbal communication is preserved. The results provide valuable information for educational practice, especially during the transition from nursery school to primary school, where dynamic assessment can help prevent school failure and specifically support the development of cognitive and metacognitive strategies (Haywood & Lidz, 2007; Krejcová, 2016). The ACFS comprises six scales – four basic and two supplementary, as shown in the table below. The scales also observe accompanying manifestations of the child's behaviour, such as concentration, work perseverance, motivation, interaction with the diagnostician and the ability to use feedback. Each scale includes functions such as the ability to generalise and apply learned rules, use previous experience, apply learned strategies, and understand the task as a problem-solving. We have recorded other cognitive functions in the following table, which is based on the methodology of the method developed by Krejcová and Lidz (2014).

**Table [1]:** Observed cognitive functions and other manifestations of diagnosed children according to Krejcová and Lidz (2014)

<b>Scales</b>	<b>Observed cognitive functions and other manifestations of the diagnosed child</b>
<b>Sorting</b>	<ul style="list-style-type: none"> <li>- Comparison and systematic examination of stimuli</li> <li>- Work endurance</li> <li>- vocabulary range and development</li> <li>- internalisation of superordinate concepts</li> <li>- simultaneous consideration of multiple characteristics of stimuli</li> </ul>
<b>Sequential auditory memory</b>	<ul style="list-style-type: none"> <li>- memorising and retaining heard information</li> <li>- range of expressive abilities</li> <li>- adherence to story sequences</li> <li>- use of visualisation strategies and their application</li> </ul>
<b>Short-term visual memory</b>	<ul style="list-style-type: none"> <li>- systematic examination of stimuli and their consistent perception</li> <li>- searching for alternative solutions</li> <li>- awareness of important details</li> <li>- using visual modality to remember information and comparing it with verbal modality in the previous scale</li> </ul>
<b>Completing sequential patterns</b>	<ul style="list-style-type: none"> <li>- observing significant characteristics and considering them simultaneously</li> <li>- using general concepts (size, shape, colour, etc.)</li> <li>- seriality and understanding of the concept of "next"</li> <li>- ability to generalise and observe logical evidence</li> </ul>
<b>Perspective taking</b>	<ul style="list-style-type: none"> <li>- vocabulary diversity</li> <li>- ability to transform observed knowledge into words</li> <li>- analysing stimuli and determining them accurately</li> </ul>

	<ul style="list-style-type: none"> <li>- ability to generalise and apply acquired rules</li> <li>- use of technical terms (geometric shapes, etc.)</li> <li>- accuracy in processing stimuli</li> </ul>
<b>Verbal planning</b>	<ul style="list-style-type: none"> <li>- ability to generalise and apply acquired rules</li> <li>- vocabulary</li> <li>- seriality and analysis of the whole into smaller logical parts</li> <li>- use of previous experiences from everyday life</li> <li>- use of technical terms that express the course of events</li> </ul>

**Application of the ACFS method of dynamic diagnostics in selected preschool children**

We transformed the acquired theoretical knowledge into empirical terms through the practical application of the ACFS method with a detailed description of two cases studied. The diagnostic process consisted of three stages – pre-test, intervention phase and post-test, each of which provided qualitative data on the level of categorization, auditory and visual memory, seriality, empathy and other cognitive components.

Research objectives and questions:

The primary objective of the research was to analyze the ACFS method and highlight its potential application as a tool for the dynamic diagnosis of cognitive functions in preschool children. We specified this main objective into the following sub-objectives:

- C1: To identify, through a pre-test of selected preschool children, the current level of cognitive function development and areas requiring support.
- C2: To evaluate qualitative changes in the child's performance after the intervention phase of the ACFS method.
- C3: Assess the diagnostic and intervention benefits of the ACFS method in the evaluation and development of cognitive processes in the preschool period.

Based on the formulated objectives, descriptive research questions were established:

- VO1: What dominant and weakened areas of cognitive functions can be identified in a child after the pre-test?
- VO2: To what extent did changes in the quality and level of individual cognitive processes manifest themselves after the intervention?
- VO3: How does the ACFS method contribute to a more effective assessment and development of cognitive potential in preschool children?

**Methodological framework**

Based on a synthesis of relevant professional literature and participation in specialized training focused on the application of the ACFS method, we chose a methodological approach oriented towards the development of case studies. This approach allowed us to analyze in detail the implementation of dynamic diagnostics through ACFS in all its complexity. To ensure valid and reliable results, the principle of triangulation was implemented in the empirical part of the research, with the methodology including literature analysis, systematic observation, diagnostic procedures and an anamnestic questionnaire.

Given the qualitative nature of the research, characterized by a long-term and intensive process, the research sample consisted of two specifically selected cases. The subjects were five-year-old preschool children. The practical phase of the research involved dynamic diagnostics in the children's natural environment. A pre-test was administered in each subscale, and if necessary, an intervention was subsequently implemented, followed by a post-test.

During the observation, we primarily monitored the sequence and quality of task performance according to the ACFS method, as well as the non-verbal behavior of specific children and the level and profile of cognitive functions. We identified the strengths and weaknesses of these functions and monitored changes after the implementation of the intervention phase. The data obtained were systematically analyzed and, finally, a comparative overview of the results was carried out using tasks from static diagnostic materials. The result of the entire process was a detailed processing and documentation of the case study.

## **Interpretation of the results of the two cases studied**

### **Case study 1**

The first case studied was Jakub. He was a very active, curious, and sociable boy, appropriate for his age, who was 4 years and 11 months old at the time of the ACFS diagnostic testing, which is typically considered preschool age. As part of implementing this method, we adhered to the methodological principles for working with this diagnostic material throughout the diagnostic process. Therefore, we started with the Sorting scale, which contains activities related to predictors of mathematical abilities. Immediately after pulling out the stimulus material, Jakub began to build a castle out of the blocks. When asked to answer the question of what we could do with these blocks, he used the terms "geometric shapes" and "sorting" in addition to building structures. After answering without further instruction, he spontaneously began to sort the elements into groups by color. He then named the color groups. Gradually, he also began to categorize them by shape. However, he first divided the blocks by shape, but then began to divide them by color as well. This resulted in groups of two blue prisms, two ovals, and others. We let him work like this for a while without saying anything. Then we asked him why he had chosen this method, to which he replied that he just wanted to show how it could be sorted by both shape and color at the same time. Once he had finished this part of the activity, he came up with another method of "grouping", namely by "measuring". We were intrigued by this term. So we asked Jakub to explain what "grouping by measuring" meant. Without the slightest hesitation, he added, *"You know, it's when something is big and something is small. So you put the bigger cubes and the smaller cubes together."* Jakub showed us that he can also categorize by size, thus completing this scale without the need for intervention and scoring full points. We noticed minor shortcomings only in the second scale, which focused on sequential auditory memory. Here, Jakubko listened to a story, which he was then supposed to reproduce. However, during the auditory perception of the story, we noticed an increase in his restlessness and loss of attention, as evidenced by his constant movement in his chair and frequent glances around the room. Although he only lost a few points in the pre-test, we decided to apply the intervention to him as well. We were interested in whether these shortcomings could be due to a perceived weakening of attention. He did very well during the intervention. First, we calmed him down, sent him to pour himself some water, and let him stretch his legs under the table. Then we asked him if he needed anything and if we could continue with the tasks. He didn't want anything, but at that moment we noticed a calming of his impulsivity and full focus on the next tasks. All Jakub had to do was give him instructions and show him part of the solution, which meant showing him where to place the piece he had chosen at his own discretion. The selection of pieces was based on previous experience with categorization according to a specific phenomenon. Rectangles represented the people in the story because they resembled tall, human-like figures. Triangles symbolized the mouse and cat because they have pointed ears. Once he had all the pieces, he began to work independently, following the instructions. During the intervention, we observed progress, which was attributed

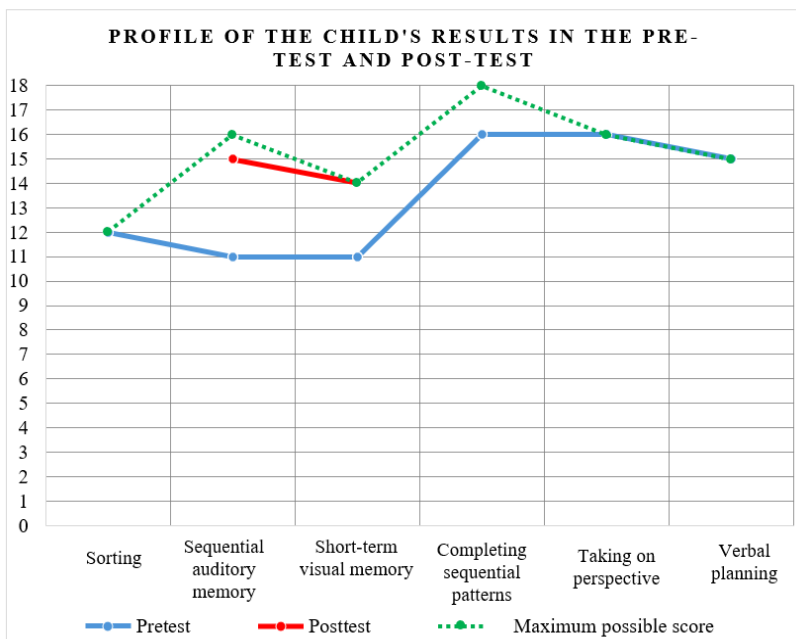
to increased attention and a shift in task type with the same intention. As soon as we noticed this progress, we proceeded to the post-test. Jakub did well and scored full marks. We even noticed that before he started the task, he stretched his legs under the table, shook his hands, and, with his eyes closed, moved his finger across the table as if imagining the pieces from the intervention and reproducing the story. Regarding delayed recall, a partial component of the scale, we did not detect any deficits in him. He repeated the story independently, word for word, without any aids, such as visual imagery, which was used in the pre-test. In the third scale, we worked together on short-term visual memory, where we used groups of pictures that Jakub had to memorize. In addition to this cognitive function, we were also interested in how he attempts to store information in his memory and then recall it. Therefore, despite adequate success in the pre-test, we decided to apply an intervention. Jakubko was able to store and recall the images very well, but he could not explain the process by which he remembered them better. He replied that he remembers them because he looks at them carefully, but he does not know how else to do it. We therefore decided to try to teach him these methods through intervention, which would help him apply the knowledge he had learned in his future learning. In the intervention phase, the procedure is the same as in the pre-test, the only change being the groups of pictures that the child has to name, memorize and recall. After being presented with the pictures, Jakub correctly named them all. As in the previous task, we observed progress in his application of the learned cognitive strategies and their use in various types of tasks. We explained that dividing things into groups can also help us remember large amounts of information. It was interesting that in the pre-test he could not remember how to remember things better, but when we asked him about it during the intervention, he began to list learning strategies without any prompting – whether it was repeating it over and over in his head, pointing with his finger, counting them, or making dots on paper to show how many pictures he had seen, and so on. Since we observed a high level of cognitive functions, including intermodality, we concluded the intervention phase and conducted a post-test, where he scored full marks with a detailed explanation of each strategy he used to memorize. In the last basic subtest of the ACFS method – Completing Sequential Patterns – Jakub did very well. However, we noticed that his level of impulsivity increased again, stemming from his eagerness to show us his favorite book. We tried to stimulate him with words and motivate him to complete the task, telling him that if he wanted to, we had two more interesting and fun tasks prepared, but if he really couldn't manage it, we could end the testing after this activity. However, he immediately calmed down and assessed himself as a big boy who wanted to do two more tasks because he was curious about what interesting things he would try in them. It was nice and encouraging to see his determination to engage in further tasks. We view this very positively, as the process is an excellent indicator of the boy's diligence, perseverance, and ability to interact in terms of completing tasks, moving forward, and also developing his personality, which he can later utilize in a school environment. We did not notice any significant shortcomings in the implementation of this scale; on the contrary, Jakub's reactions to completing the series according to the set criteria, which he was able to justify readily, demonstrated his excellent ability to complete certain sequences. We can therefore assess the cognitive function of seriality as one of the child's strong points in learning potential. As we have already mentioned, Jakub expressed interest in trying out tasks from two additional scales of the ACFS method: Perspective Taking and Verbal Planning. Therefore, we carried them out together as part of the comprehensive method. He particularly enjoyed perspective-taking. He achieved full marks on this scale, using many details in his description of the child, such as: "Colour the eyes black. Draw the shoes too, and don't forget, he has wavy hair on top of his head, but be careful, it's very short and different." In addition, he was able to orientate himself not only on paper but also in space, and he was able to describe to us in a "mirror

image" the places where we should draw. Jakubko has also mastered the concepts of bigger/smaller, circle, rectangle, up, down... We also positively evaluate the area of verbal planning, where we noted the use of concepts such as 'first,' 'then,' and 'next,' along with an adequate level of orientation in the sequence of events. This is evident in the detailed description of the process of preparing breakfast, which includes the involvement of people in its preparation. For a more comprehensive view of the overall success in the process of applying dynamic diagnostics, we present a table with point scores in the individual scales of the ACFS method, followed by a graphical presentation of the child's resulting profile in pre-test and post-test tasks.

**Table [2]:** Overview of numerical results in individual scales obtained in the first case studied

Scales	Post-test score	%	Pre-test score	%	Change score (post-test - pre-test)	%
Sorting	-	-	12/12	100	-	-
Sequential auditory memory	15/16	94	11/16	69	4/16	25
Short-term visual memory	14/14	100	11/14	79	3/14	21
Completing sequential patterns	-	-	16/18	89	-	-
Taking on perspective	-	-	16/16	100%	-	-
Verbal planning	-	-	15/15	100%	-	-

**Graph No. 1:** Profile of the child's results in the pre-test and post-test in relation to the maximum score - Jakub.



Based on the results shown in the table and graph, we can conclude that the strong cognitive functions in the case under study are categorization, visual differentiation, verbal expression, orientation, vocabulary, awareness of multiple details, and observation of multiple characteristics simultaneously. Deficits can be observed in attention and, to a certain extent, in short-term memory. We believe that these deficiencies, associated mainly with oscillating impulsivity, are responsible for a slight insufficiency in the area of sequential auditory memory. We also conclude this from the fact that the score change in the pre-test and post-test is 25%, which is a relatively small difference. The fact that there was a significant improvement after the intervention, where we focused mainly on reducing impulsivity, shows us that it is possible to modify and support cognitive functions through this stage, thereby creating stimulating and safe opportunities for the child's education and everyday life. However, to stimulate the strategies necessary for the child to acquire their learning potential, we must not forget to take into account their overall picture, which includes, among other things, active involvement in activities, adequate interaction, but also an understanding of the importance of learning and thinking about how they can reinterpret a given fact in other tasks. It was precisely this element of reusing a learned strategy that we saw in Jakub throughout the dynamic assessment process. These facts serve as an indicator to us of the benefits of using dynamic diagnostic methods, which are responsible for changing the child's thinking, selecting appropriate forms of intervention and support, and achieving significant progress without initially labeling the child with a specific diagnosis.

### 3.2 Case study 2

The second case studied in our research was Matúš, who also reached preschool age. Like Jakub, he is very active, naturally curious, motorically agile, and manually skilled; however, he also sometimes exhibits significant signs of impulsivity. Matúš has been seeing a speech therapist since the age of 2 with a diagnosis of impaired communication skills, which manifests itself in deficits in articulation skills along with symptoms of dyslexia. However, through regular speech therapy intervention and the support of the nursery school team, we can conclude that the child's problem has improved. When applying this dynamic diagnostic method, we adhered to all the principles related to the methodological framework of working with the ACFS method. We began with the implementation of the sorting scale. An interesting finding for us was that Matúš was the first child to show a high level of cognitive function related to categorization, as during the initial conversation about what we could do with the cubes, he replied that he could make piles of cubes that were the same. He chose the category of sorting objects by shape first. Then, without any encouragement, he showed us that he could also sort them by color. When he finished, he also created groups by size. In this category, we also observed the development of comparison, as he placed smaller cubes next to each other and compared their sizes. He was the only one of the children who realized that the cubes were not only large/small, but that there were also medium-sized cubes. This detail depended only on a few millimeters in the different sizes of the cubes, small ovals and pyramids. Following on from the 100% sorting level, we continued to implement further scales without the need for intervention. The second of these is Sequential Auditory Memory. We can conclude that the child's performance in this area was poorer. Matúš was not particularly interested in the story. He also had a lot of questions about it, as some things in the story did not make sense to him. He could not come to terms with the idea that a cat, a mouse, a girl, a boy and a man with a toy train lived in a small green house. But why, if a girl and a boy live there, don't their mum and dad live there

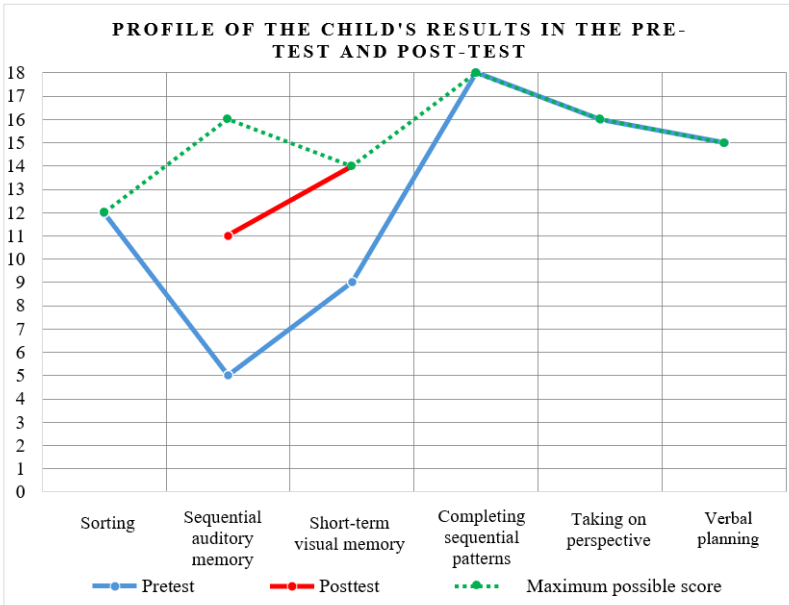
too? We were very interested in his reasoning, and we can liken this deep thinking to a highly developed level of logical reasoning. However, in terms of the resulting level of auditory memory, we observe demonstrable deficits. In addition, we noticed the child's inattention, which may have stemmed from the fact that the story lacked the necessary logic for him – i.e., he did not identify with the characters appearing in the plot. Based on the score achieved in the pre-test, we proceeded with the intervention. Matúš chose characters symbolizing a cat and the like based on a comparison of certain similarities, thus demonstrating the use of intermodal relationships. He understood the instructions given, arranged the pieces himself, repeated the story, but still showed a consistent lack of interest in listening to and subsequently remembering it. Despite the intervention, we achieved some progress in the post-test score and later in delayed recall, but we did not manage to achieve 100% performance. Matúš also performed well in the area of short-term visual memory. He recognized all the objects in the pictures. In the pre-test, he was able to remember 6 out of 8 pictures. In his effort to keep them in his memory, he used strategies of identifying details along with repeating their names. When recalling the pictures, he tried to point to the places where they were located. Although we observed sufficient cognitive processes, we decided to intervene with other pictures to see if he could recall all the pictures presented in the post-test. The intervention phase was similar to the pre-test, with the difference that we used pictures from the fruit and clothing categories. However, an interesting phenomenon was Matúš's presentation of strategies that he did not use in the pre-test without being asked to do so. When we handed him the cards, he automatically created two groups, explaining that he could see them better this way and knew that he had four pictures of fruit and four of clothing, so he would have to remember eight pictures. He was asked why he did not do the same with animals and means of transport. He said that almost all of the previous pictures were similar in color, so he could not store them as neatly. We can therefore see a high degree of cognition being used together with the application of various learned knowledge. Based on the findings, we conclude that the intervention was adequate despite the adequate score achieved in the pre-test of the scale. In the post-test stage, using all the strategies, Matúš achieved full marks. The cognitive function related to seriality, which is the focus of the scale – Completing Sequential Patterns – is also a demonstrable strength not only of Matúš's metacognition but also of his learning potential. He was the only one to complete the subtest with full marks by completing all the rows according to the specified pattern, together with a detailed justification of the selected element. We thought that, given the problems manifested in the child's speech, we would omit the supplementary ACFS scales, as their content is presented through the verbal expression of the diagnosed individual. However, Matúš was very keen to work, so we also carried out the part concerning Perspective Taking and Verbal Planning. Despite this fact, we were surprised by the conclusions of both scales. Their results achieved the full number of points. In the area of perspective taking, we as examiners had to pay more attention to what the child wanted to tell us, but his ability to use both verbal and non-verbal elements of communication led us to draw the required picture. Although Matúš did not know how to describe a smile as a curve, he guided us to its representation by asking us to draw a mouth as he showed us, i.e., he smiled at us. When describing the picture, he also pointed to places on the paper where we should draw, using superordinate concepts such as a smaller circle and a larger circle. His speech difficulties did not stop him from describing how breakfast is prepared in their home. He has mastered expressions describing the course of events, which he can structure in the correct order. The following table shows an overview of the point and percentage results achieved in the individual stages of dynamic assessment using the ACFS method, together with the resulting

change score. In this case, we also present the child's results profile, which is expressed as a line graph.

**Table [3]:** Overview of numerical results in individual scales obtained in the second case study

Scales	Post-test score	%	Pre-test score	%	Change score (post-test - pre-test)	%
Sorting	-	-	12/12	100	-	-
Sequential auditory memory	11/16	69%	5/16	32	6/16	38
Short-term visual memory	14/14	100	9/14	64	5/14	36
Completing sequential patterns	-	-	18/18	100	-	-
Taking on perspective	-	-	16/16	100%	-	-
Verbal planning	-	-	15/15	100%	-	-

**Graph No. 2:** Profile of the child's results in the pre-test and post-test in relation to the maximum score - Matúš.



Source: Krejcova, Lidz, 2014; own processing.

The data presented in the summary table and graph showing the child's results in the pre-test and post-test tasks in relation to the maximum performance provide us with information about Matúš's progress in the scales focused on sequential auditory

memory and short-term visual memory. As we can see, in both cases, stimulation of the assessed cognitive function led to positive changes after the intervention phase. The remaining tested areas were assessed with a full number of points already in the ACFS method pre-test itself, which represents a high level of the child's learning potential even before entering primary school.

### **Research conclusions**

Qualitative research on the application of the ACFS method of dynamic diagnostics in preschool children has demonstrated the high potential of this approach in detecting, evaluating, and subsequently supporting cognitive functions during early development. Through a three-phase diagnostic model – pre-test, intervention phase, and post-test – it was confirmed that dynamic diagnostics is not only an assessment process, but above all, a developmental process that allows monitoring not only current performance but also the degree of cognitive modifiability in the child. Empirical findings obtained from the examination of two case studies (Jakub and Matúš) confirm the fulfillment of all the set research objectives, as well as the relevance of the research questions focused on identifying dominant and weakened areas of cognitive functions, monitoring changes after intervention, and assessing the application benefits of the ACFS method in the context of dynamic diagnostics of preschool children. The first research objective (C1), which focused on identifying the current level of cognitive functions in children through a pre-test, was achieved by systematically recording qualitative performance indicators in individual scales of the ACFS method. Both children demonstrated a high level of categorization, visual differentiation, and verbal expression, confirming their above-average learning potential and disposition for the effective acquisition of new knowledge. At the same time, areas requiring support were also identified – in particular, auditory sequential memory and attention span, which proved to be sensitive to fatigue, impulsivity and low concentration. These results provide relevant empirical support for the claim that the pre-test phase of the ACFS method can differentiate between performance and potential, thereby providing a more accurate picture of a child's cognitive profile than traditional static tests. The second research objective (C2), focused on evaluating qualitative changes after the intervention, was fulfilled through a detailed comparison of pre-test and post-test performance. In both cases, the ACFS method was confirmed to be capable of initiating positive cognitive transformation through mediated interaction and purposeful guidance by the diagnostician within the intervention. In Jakub's case, the intervention focused on regulating impulsivity and supporting attention, resulting in a significant increase in efficiency in solving auditory and visual memory tasks. Not only did the child improve his score, but he was also able to reflect on his own learning strategies, demonstrating the development of metacognitive processes. Matúš showed significant progress in the development of short-term visual memory, with the child spontaneously beginning to use various strategies. Despite speech therapy difficulties, he achieved full performance in the areas of verbal planning and perspective taking, which demonstrates the effectiveness of dynamic mediation even in children with communication deficits. The changes observed demonstrate that the intervention phase of the ACFS method fulfills not only a diagnostic function, but above all a stimulating and transformative function that promotes flexible thinking and adaptive learning. The third research objective (C3) evaluated the diagnostic and intervention benefits of the ACFS method for assessing and developing cognitive processes in preschool children. The results of both case studies confirm that the method is capable of providing a comprehensive and reliable picture of a child's cognitive abilities, identifying their latent learning potential and, at the same time, mediating effective learning strategies that the child can transfer to

new situations. The application of ACFS in practice, therefore, allows not only the diagnosis of current cognitive structures but also actively influences their qualitative transformation. This confirms the answer to the research question "*How does the ACFS method contribute to the effective assessment and development of cognitive potential in preschool children?*" 's conclusions correspond with the current theoretical findings of Feuerstein, Vygotsky and Lidzová, who point to the interactive nature of cognitive development and the modifiability of mental processes with adequate mediation. A comparison of the two cases studied reveals that dynamic diagnosis using the ACFS method not only identifies deficits but also, above all, the learning process itself – i.e., the ways in which the child solves problems, responds to help, utilizes feedback, and transforms acquired knowledge. In Jakub's case, the dominant factor was a change in self-regulation and attention, while in Matúš's case, a high degree of logical thinking and intermodal coordination was evident. Both children demonstrated the ability to use new strategies to complete tasks, which is at the core of the concept of dynamic diagnostics – examining not only what a child knows, but also how they learn and to what extent they can expand their knowledge. Empirically documented improvement in key cognitive functions after intervention confirms that the ACFS method is a valid and sensitive tool for assessing the zone of proximal development, providing practical implications for educational and psychological practice. The results suggest that integrating the ACFS method into the diagnostic-educational process enables the targeted development of cognitive plasticity, metacognitive competencies, and self-regulatory strategies in children even before they begin school. In this way, the broader pedagogical-psychological goal of dynamic diagnostics is also fulfilled – to support active and meaningful learning in children through understanding their own mental processes. Based on the above findings, it can be concluded that the application of the ACFS method represents a significant contribution to the field of preschool diagnostics and intervention. It confirms the need to move away from static testing models towards dynamically oriented approaches that respect the individuality of the child, their current conditions and their development potential.

### **Conclusion**

The results of our research suggest that dynamic testing using the ACFS method can play a significant role in identifying the specific aspects of cognitive development in preschool children. This is supported by a comparison of the findings in both cases studied, where the use of intervention and comprehensive dynamic assessment optimizes deficient functions and facilitates learning strategies, thereby creating a stimulating environment for the development of cognitive functions. Furthermore, the implementation of the ACFS method in the diagnostic process not only provides valuable information about the current and potential cognitive abilities of children but also creates a stimulating framework for further empirical studies examining its applicability in different demographic groups. In addition, its use can contribute to the optimization of educational strategies, especially in adapting pupils to the environment of the first year of primary school, where it is necessary to identify and support children requiring individualized pedagogical interventions in a targeted manner.

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Mgr. Mária Hrenáková  
Constantine the Philosopher University in Nitra  
Faculty of Education  
Department of Pedagogy  
Dražovská 4, 949 01 Nitra  
maria.hrenakova@ukf.sk  
ORCID: 0009-0001-5969-0072

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doc. PhDr. Petra Jedličková, PhD.  
Constantine the Philosopher University  
Faculty of Pedagogy, Department of Pedagogy  
Dražovská cesta 4, 949 74 Nitra,  
Slovakia  
pjedlickova@ukf.sk  
ORCID: 0000-0001-5395-6696