

## RESULTS OF THE ROUND TABLE WITH EXPERTS

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**Place: Kumanovo/ Macedonia**

**Project Partner: OOU HRISTIYAN KARPOSH, MACEDONIA**

**Total number of participants: 10**

- **Basic information about the participants.**

- 1) *Jadranka Arsovska – Psychologist*
- 2) *Milena Paunovikj - Special Education Expert. She works with dyscalculic students.*
- 3) *Elizabeta Radulovikj – School Counsellor*
- 4) *Aleksandra Stamenkovska – Maths Teacher*
- 5) *Aleksandra Pavlovska – Maths Teacher*
- 6) *Lidija Lazarevska – Maths Teacher*
- 7) *Gabriela Nikolovska – Maths Teacher*
- 8) *Violeta Mitrovska – Maths Teacher*
- 9) *Lidija Nikolikj – Maths Teacher*
- 10) *Ana Nojkovska – Teacher*

- **Questions for discussion.**

1. *How do you understand the concept of "mathematical dyscalculia" and "mathematical anxiety" and how does it differ from other types of learning difficulties (or laziness)?*

Dyscalculia refers to the problems or difficulties that a certain number of students have, which is most manifested in mastering the contents in mathematics. These difficulties arise when students start learning to count, to perform simple mathematical calculations, to think spatially, and to define groups of objects. It is a matter of serious deterioration of the specific learning in mathematics and with appropriate school performance in this subject. Therefore, it is a learning disability based on the difficulty of mathematical or numerical competence.

2. *Briefly define the difference between 'mathematical dyscalculia' and "mathematical anxiety".*

It must be acknowledged that these two terms cannot be distinguished easily and to some extent are related to each other. So students who face psychological difficulties and math anxiety may also have dyscalculia. But what can definitely be done is to distinguish between children who have difficulty in math or dyscalculia and those children who are not talented for math, or simply do not have sufficiently developed logical intelligence or experience some kind of psychological issues.

Children with dyscalculia have great difficulty understanding the simplest concepts of numbers, lack of intuitive understanding of numbers, and have difficulty learning mathematical facts and procedures.

The first sign is to be discovered in primary and preschool education, because when a child can not learn to write numbers correctly, they already give us a clue.

Here, too, one should pay attention to whether the problem is psycho-somatic or something more. Students who have simple math anxiety believe that they cannot achieve better results and problems is more psychological. With the help of suitable psychological expert, students with math anxiety can overcome this problem, whereas students with dyscalculia need more.

Dyscalculic students also have a very high mathematical anxiety. However, this problem is permanent. Basic learning can be achieved by special education support. In spite of this, he / she might and most probably will never be at the same level with peers.

3. *How is it found that a pupil / student has mathematical dyscalculia/ anxiety? By whom it is determined? How is it done? Is this done at all?*

Indicators are visible from preschool age. But mostly children are being diagnosed in the beginning of their education. They are underachieving and having problems with maths, which causes teachers and parents to try to discover the cause. And some of the most common symptoms are:

- The child has a problem writing the numbers correctly.
- Number classification can not be performed.
- Does not perform series (something quite common in primary education and schooling).
- They can not solve simple mathematical problems
- Problems with understanding and interpreting problem statements.
- Problems understanding concepts they should have, for example, size or position.
- Difficulties in order, classification, quantity, correspondence, reversibility ...
- Difficulty in spatial and temporal coordination.
- Difficulty in remembering and understanding formulas, rules, mathematical sequences, multiplication tables ...

The assessment of dyslexia is performed on a specific act involving extensive and detailed verification by the multi- disciplinary team. It should also be borne in mind that the teacher plays one of the key roles in the process. Namely, the teacher is usually the first person to identify the child does not perform his duties and activities properly. The teacher can usually notice the discrepancies in the child's achievements, especially between oral and written show. The final assessment, based on the majority performed assess, is carried by the multidisciplinary team.

The first thing we face is accepting a problem and seeking a solution. But this process is greatly complicated by the very fact that many parents are reluctant to accept that their child has a problem. Here the fear of being different and stigmatization is also very important. That is why the role of the teacher is extremely important and difficult at the same time.

4. *Do you think teachers are sufficiently prepared to work with students with dyscalculia/ anxiety?*

If we compare the situation ten years ago and now, it must be noted that teachers have developed an awareness of the existence of such a situation as well as a general picture of how to cope or recognize. But we are really far from saying that we are ready. There is a need for a number of additional seminars with which teachers would gain sufficient knowledge to work with children with disabilities. But even then, the need for a special educator is something that is an essential part. As well as a psychological expert who will help in the process if distinguishing between dyscalculia and mathematical anxiety.

5. *What methodological support is available to them now? Do they have any additional resources/ support?*

Schools and teachers have become aware of dyscalculia in recent years.

Many excellent seminars and training sessions are available that explain the learning strategies recommended for students with disabilities focusing on multi-sensory, specific learning methods. Problem is they are quite pricey. Things such as the fact that children and teens can learn fact-finding methods while doing a math problem, such as in Touch Math are available online, but not thoroughly explained. Higher level math courses, such as algebra and beyond, can use formula notes and focus on a deep understanding of mathematical operations. The need for a curriculum or the only accepted way to work with such students is something that is still missing.

6. *How do you think what help should be given to a child with mathematical dyscalculia/ anxiety? Who should provide it?*

Children and teens with dyscalculia struggle to understand numbers and how to do math.

While many children and teens find math challenging, children with dyscalculia will have extreme difficulty with certain basic skills that will be needed to progress through future math classes. Fortunately, there are many strategies and techniques that can help children and teens with dyscalculia become successful in math. The key to getting real help is to determine if a child or teen has dyscalculia, if there are any other learning problems, and the specific ways in which dyscalculia affects the individual. Each ministry of education is obliged to provide the full support of teachers and parents as crucial persons in this process.

7. *What help would teachers need to work with students with dyscalculia / anxiety? Who should provide it?*

Although today it is easy to access a large amount of research papers and materials that are available online and greatly facilitates teachers and parents to get acquainted with the specifics and methods to facilitate the mastery of the content in mathematics and dealing with anxiety. However, the need for professional training and practical sessions for teachers and parents is more than necessary. NGOs are largely trying to inform the general public about the situation, but their courses are not free and not everyone can afford them. Overall, the need for appropriate didactic materials, professional development and professional assistance is still not at a satisfactory level. .

*8. What support would parents need? Who should provide it?*

Parents need to be open and cooperative. It is important for parents to understand exactly what difficulties their child is experiencing with math when math-related disabilities are discovered, so that appropriate cooperation with schools is achieved and will lead to appropriate educational strategies that can be used to help the child.

**3. Conclusions of the focus group.**

Dyscalculia is a learning difficulty that affects mathematical calculations. The severity of the condition varies from person to person. The main areas of weakness that signal the diagnosis of dyscalculia include visual-spatial difficulties and language processing difficulties. Other common symptoms include problems learning mathematical facts, problems recognizing numbers, and problems solving mathematical problems. Children who do not have adequate mathematical vocabulary and visual-spatial associations may have difficulty mastering advanced mathematics. Treatment for this condition usually involves the use of alternative learning methods and a variety of approaches to mathematical problems.

Teachers who have students with learning difficulties in the classroom have additional responsibilities. They are not only responsible for what the child will learn academically, but they are also responsible for pursuing the child's goals on an emotional level. It is therefore necessary to develop a manual and a generally accepted collection of strategies and methods for working with children with dyscalculia.