

CONCLUSIONS OF INTERVIEWS

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Interviews were carried out at C.J.R.A.E. Vrancea in March 2021.

1. TEACHERS' INTERVIEWS

Three teachers were interviewed, one from primary education (*our note: primary teachers in Romania teach all subjects, including math*) and two from secondary education (math teachers).

First of all, we should mention that the concept of dyscalculia was not very well known for the interviewed teachers (*our note: in general, in Romania, not many people fully understand this concept, including the ones in the educational system*); but when the concept was explained to them, teachers could identify some concrete examples in their pedagogical practice and rely on those to continue the interview.

- the learning potential of pupils with dyscalculia depends not only on the individualized learning plan (so, the efforts from their teachers), but also on their motivation (for older children) or parental availability and knowledge to externally motivate them (for younger children), on their interest in mathematics, on their educational plans (in gymnasium, many children with dyscalculia are already encouraged by parents and even some teachers to follow “humanist” educational paths – linguistics, social sciences etc. and are not encouraged to give their best in learning mathematics), on their level of anxiety associated with mathematical tasks or with educational evaluation etc. Of course, the teacher and the pedagogical approach included in the individualized learning plans have a decisive role, but not the only role;

- individualized tasks and teaching / learning materials or worksheets adapted to each pupil is, of course, an ideal that is general for education, valid not only for pupils with dyscalculia. But in the context of classes with more than 30 children (*our note: big classes are usual in Romania, especially in urban primary schools*) and more than one child with special educational needs integrated in the same class, this ideal is harder and harder to achieve;

- the number of cases of dyscalculia each interviewed teacher worked with was insufficient for them to make generalizations regarding the behaviours of those children, but empirical observation of the few cases showed frustration and tendency to establish lower goals for future activities, avoidance strategies (including some older child skipping math classes when evaluation was announced), potential conflict with parents that did not understand the lower grades in math compared with other school subjects and even a lower interest in communicating with the math teacher;
- assistance from specialists is limited in the public educational system in Romania, the only specialists being the school counsellors; also, school counsellors are not available in all schools and their job description include many tasks so help for pupils with dyscalculia is limited. There are no psychologists, social workers, pedagogues etc. in mainstream education (*our note: they are present only in some of the special schools*).

2. FAMILIES' INTERVIEWS

We interviewed two parents that believed their gymnasium children might have dyscalculia, and their most important thoughts were:

- difficulties in learning math are due to a various number of factors, including, on the one hand, the lower potential of some children, and, on the other hand, the teaching methods and teachers' skills and ability to teach for each child. So, even parents that were aware of what dyscalculia is have the tendency to focus on external factors such as teaching; parents are struggling to fully understand the conceptualization of dyscalculia (*our note: as mentioned before, dyscalculia is not very well known in Romania, even in the educational area*) and its role in explaining low achievement in mathematics;
- regarding the anxiety some students feel, parents consider it to be somehow normal, as grades are very important and, in many ways, decisive for the educational future (*our note: in Romania, grades and final evaluation in gymnasium decide the high school that the pupils will attend, results in graduating exam in high-school are an important criterion in getting admitted in universities etc., so there is a general pressure for each pupil to have high grades in all subjects*). It is hard for parents to analyse if anxiety is more intense in math evaluation compared to other subjects, and our question raised awareness for them on this topic; therefore, the impact of math anxiety on results in math learning is also hard for parents to identify;

- for some children it would be more useful to focus on minimal tasks correlated with their potential, so that relevant skills in everyday life should be developed, instead of focusing on abstract tasks that exceed their learning possibilities; parents lack the adequate words, but they are clearly pointing to the individualized learning program;

3. STUDENTS' INTERVIEWS

Our specialists interviewed two gymnasium children that were tested for dyscalculia at their parents' requests (the results of this testing were not available at interview time, so dyscalculia was not confirmed for them at that time), and their responses were focused on:

- difficulties in math is perhaps general, but what this means depends from child to child. On the one hand, there are children that have difficulties in simple tasks, in solving problems that teachers and other pupils consider accessible; on the other hand, there are pupils with high grades and results, but they still have some difficulties in solving the more difficult problems, so the general perception is that every pupil struggles with math exercises; one thing that children surprisingly identified is that there is always a "next level" in math learning, there is always a level of difficulty that is inaccessible for you, no matter how good you are;
- asked about specific situation of children having issues in solving medium level or easy exercises in math while having good performance in all other school subjects, the interviewed children mentioned that there are some of those children in their classes (without making any reference at themselves), and described difficulties such as: understanding more complex and abstract concepts, even when the rest of the class has no issues in operating with those concepts; doing calculation slower and with more errors compared with their peers; difficulties in understanding geometrical figures, making problem solving in geometry almost impossible;
- to improve their understanding of mathematics, pupils with dyscalculia should rely not only on their teachers, but also on their colleagues, as jokes made by their colleagues not only hurt their feelings (*our note: especially at this age*), but also determine children with dyscalculia to try to hide their difficulties and make them less willing to ask for help from their peers.