ABSTRACT

The dissertation thesis addresses the topic of mathematical tasks processing in students with autism spectrum disorder (ASD) and problematic points of their solution. The aim of this work is to delineate methods that ASD students use to approach these tasks and solve them. We focus primarily on whether it is possible to identify different procedures than those used by typically developing students, and whether these procedures show specifics corresponding to distinct cognitive processes.

In the theoretical part we provide a theoretical background for the study. Firstly, we create a frame to understand the complexity of autism, furthermore we deal with psychological theories examining the topic, and describe specifics of development of ASD students during their adolescence. Thereafter, we reflect on studies addressing mathematical skills of ASD students. Mathematics is considered as their great strength, however is not sufficiently scrutinized, as highlighted by various international studies (for example Oswald et al., 2016).

The empiric part is based on qualitative methodology and pursues comparisons of mathematical tasks processing between six ASD students and typically developing peers. We strive to document differences and common points in solutions as well as to analyze cognitive processes of ASD students, and to accentuate specifics proceeding from autistic spectrum disorder.

Our conclusions show that while with ASD students we can find specific behavioral traits referring to core disorder problems, their cognitive procedures during mathematical tasks processing are highly individual. With some students we detected common features in accordance with cognitive theories of autism. However, it turns out that it is always necessary to relate them to an overall skills layout of an individual.

KEYWORDS

Autism, Autism Spectrum Disorder, Asperger's Syndrome, Mathematical Abilities, Theory of mind, Weak central coherence theory, Executive function deficits