

## 1.1. Practices of inclusion in formal and non-formal education contexts

### SP - (18897) - ADAPTATION OF METHODOLOGIES FOR THE MATHEMATICAL LEARNING OF STUDENTS WITH AUTISM

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#### Short Abstract

Students with Autism Spectrum Disorder (ASD) are increasingly incorporated to mainstream education. They often present alterations in cognitive functions (Ozonoff & Schetter, 2007) that can have repercussions on the learning of mathematical content. It is therefore important to provide teachers with tools adapted to their needs in order to support their inclusion in mainstream schools.

We focus on combinatorial thinking because of its importance in the educational curriculum and because it is necessary for daily life, since it is used to count, calculate, enumerate, solve problems, among others (English, 1993). One way to develop combinatorial thinking is by solving Cartesian product problems (e.g. *I have 3 shirts and 4 pants, in how many different ways can I dress?*). Although there are various research studies that deal with this content with non-autistic population (English, 1993), we have not found any with ASD students. We will consider as a reference previous works with students with learning difficulties that have shown the effectiveness of methodologies for learning problem solving, such as the methodology based on the conceptual model (COMPS) (Xin, 2012). Our objective is: to what extent is a modified COMPS methodology effective for teaching Cartesian product problem solving to students with ASD?

This work is part of an instructional experience with three students with ASD in which the effectiveness of a modified conceptually based methodology (COMPS) for teaching Cartesian product problem solving was evaluated. Pictograms, drawings and a checklist were incorporated to the regular COMPS methodology in the intervention. A multiple baseline design was followed to demonstrate a functional relationship between intervention and student improvement. In the talk we will detail the performance of one of the participants, an 8-year-old student diagnosed with ASD. We present the student's progress through the sessions structured in: initial assessment, instruction, final assessment, generalization and maintenance. We also describe the main difficulties the student showed and how they were addressed in instruction.

The student improved his performance from the initial assessment to 100% correct scores during instruction. In addition, he generalized the acquired abilities to two-operation Cartesian product problems and maintained what he learned six weeks after the intervention. The results suggest the suitability of the use of a modified COMPS approach for teaching this type of problems to students with similar characteristics.

This experience is an example of the importance of adapting teaching practices to the singularities of each student in order to promote inclusion in educational classrooms and provide all schoolchildren with a quality education.

#### References

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