

Translated from the original in Spanish

# Training for pedagogical practice with Asperger children

Formación para la práctica pedagógica con niños Asperger

# Treinamento para prática pedagógica com crianças Asperger

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**Received:** May 05<sup>th</sup>, 2021. **Approved:** Octuber 07<sup>th</sup>, 2021.

#### **ABSTRACT**

In Peru and in the world, the inclusion of students with special educational needs, including children with Asperger's syndrome, education regular basic advocated; however, this long-awaited inclusion does not have the results due to multiple factors, one of which is the lack of of teachers preparation to practice teaching. With the aim of helping teachers to have references to apply them in their professional work, we share the experience of the Education without Limits program aimed at teachers who work with Asperger children. The research was approached with the experimental method and we worked with 29 teachers of the initial level who work in public institutions and who have at least one Asperger student in the class. The observation technique was used and the observation sheet was used to collect data on teaching practice. The processing carried out with the SPSS 24 statistical program and as a result there is a statistically difference between the observation score before and after the intervention, finding a Student t value t = -17.042 that is lower than t = -1.701, concluding that it is vital to train teachers to contribute to the successful inclusion of Asperger children in regular basic education.

**Keywords:** teachers service; inclusion; children sprinkle; initial level; pedagogical practice.

#### **RESUMEN**

En el Perú y en el mundo se propugna la inclusión de estudiantes con necesidades educativas especiales, incluidos los niños con síndrome de Asperger, en la educación básica regular; sin embargo, esta ansiada inclusión no tiene los resultados debido a múltiples factores, uno de ellos es la falta de preparación de los profesores para ejercer la práctica docente. Con el ánimo de coadyuvar a que los docentes dispongan de referentes para aplicarlos en su quehacer profesional, socializamos la experiencia del programa Educación sin Límites, dirigido a docentes laboran con niños Asperger. investigación se abordó con el método experimental y se trabajó con 29 docentes del nivel inicial, que laboran en instituciones públicas y que al menos tenga en la clase un estudiante Asperger. Se recurrió a la técnica de la observación y se empleó la ficha de observación para recoger datos de la práctica docente. El procesamiento se realizó con el programa estadístico SPSS 24 y como resultado se tiene que existe diferencia

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estadísticamente entre la puntuación de la observación antes y después de la intervención, encontrándose un valor t de Student t=-17,042 que es menor a t=-1,701, concluyéndose que es vital capacitar a los docentes para contribuir al éxito de la inclusión de los niños Asperger a la educación básica regular.

**Palabras clave:** docentes en servicio; inclusión; niños Asperger; nivel inicial; práctica pedagógica.

#### **RESUMO**

No Peru e no mundo, defende-se a inclusão de alunos com necessidades educacionais especiais, inclusive crianças com síndrome de Asperger, na educação básica regular; Porém, essa tão esperada inclusão não traz os resultados devido a múltiplos fatores, um deles é o despreparo dos professores para a prática docente. Com o objetivo de ajudar os professores a terem referências para aplicálos em seu trabalho profissional, compartilhamos a experiência do programa Educação Sem Limites, voltado professores que trabalham com crianças Asperger. A pesquisa foi abordada com o método experimental e trabalhou com 29 professores do nível inicial, que atuam em instituições públicas e que têm pelo menos um aluno Asperger em sala de aula. Utilizouse a técnica de observação e a ficha de observação para a coleta de dados sobre a prática docente. O processamento foi realizado com o programa estatístico SPSS 24 e como resultado existe uma diferença estatística entre o escore de observação antes e após a intervenção, encontrando um valor t de Student t = -17,042 menor que t = -1,701, concluindo que é vital treinar professores para contribuir para o sucesso da inclusão de crianças Asperger na educação básica regular.

**Palavras-chave:** professores em serviço; inclusão; Crianças Asperger; nível iniciante;

prática pedagógica.

#### INTRODUCTION

Education is a fundamental right of every human being, regardless of their creed, language, socioeconomic status or abilities. There is not a single state on earth that says otherwise. The Incheon Declaration specifies that the states that are part of UNESCO must guarantee inclusive, equitable, quality education and promote lifelong learning opportunities for all.

Consistent with this declaration, the Peruvian State establishes the incorporation into the educational system of people disabilities, excluded, marginalized and vulnerable social groups, without distinction of place of birth, ethnicity, religion, sex or any other cause of discrimination; thus, contributing to the elimination of poverty, inequalities. Under exclusion and principle of quality, it ensures adequate conditions for a comprehensive, relevant, open, flexible and permanent education.

A sector historically excluded from the educational system is that made up of students with Autism Spectrum Disorder (ASD). The disorder consists of "a lag in the acquisition of social-emotional skills during early development and, as a consequence, the progressive and variable installation of a social adaptation disability. The etiology is multifactorial and includes functional and structural neurological alterations of genetic and epigenetic origin" (Reynoso et al., 2017, p. 214). "ASD encompasses a heterogeneous set of neuron developmental syndromes associated with deficits in social interaction, communication skills, mental flexibility and sensory processing" (Fortuny & Sanahuja, 2020, p.3).

According to the Diagnostic and Statistical Manual of Mental Disorders (MDE-IV), fourth edition, in English Diagnostic and Statistical Manual of Mental Disorders (DSM), edited by the American Psychiatric Association, Autism Spectrum Disorders are classified as: Autism, Asperger's and generalized disorder. In the Diagnostic and Statistical Manual of Mental Disorders (MDE-5), fifth edition, year 2013, the classification is eliminated and all of them are considered solely under the name of Autism Spectrum Disorder (Contreras, 2018).

The MDE-5 approach on Asperger's Syndrome and Autism Spectrum Disorder has generated discrepancies, as Vásquez & Del Sol (2017) specifies:

Asperger's Syndrome (AS) is a neuron developmental disorder characterized by qualitative impairments in reciprocal social interactions and communication modes, as well as by the restriction of the repertoire of interests and activities that are seen as stereotyped and repetitive. At present, the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) decides to eliminate this subcategory and incorporate it into a general category known as Autism Spectrum Disorder (ASD), which has produced many debates and disagreements mainly to distinguish it or not, with Autism of High Functioning (AAF) (p. 376).

The Law for the Protection of People with Autism Spectrum Disorder and the National Plan for People with Autism Spectrum Disorder reaffirm the obligation of the Peruvian State to guarantee a sufficient number of educational institutions, teachers and educational material, so that all people can participate in the educational system, considering non-discrimination. It also recognizes the responsibility of the state to develop competencies in teachers, which allows them to make curricular adaptations with a view to promoting the learning of students with ASD.

This is how the concept of an integration is being consolidated, according to Comboni et al. (2010) emerges as an innovative option compared to the traditional and exclusionary stagnant school. The integration school characterized by openness and acceptance in the regular classrooms, to students without distinction, including students with special learning needs who, traditionally, were excluded or expelled from the regular school.

As we can see, we have legal norms that guarantee the insertion of children with Autism Spectrum Disorder to regular basic education and with encouraging guidelines and speeches, but the fundamental factor is not taken into account, the teaching factor. Teachers are basically trained to exercise pedagogical practice with "normal" children, but not sufficiently to teach with students who have different abilities.

Then, as Bedor (2018) states, there is a contradiction; On the one hand, teachers are required to include students with special educational needs in the classroom within the framework of diversity and education for all and, on the other hand, the State does not care about the preparation of teachers to take on such challenges. The foregoing shows the complexity of inclusive processes and the need to support them from research, due to the few studies that analyze this problem from daily practice.

The problem is exacerbated if we do not identify the multiple syndromes consequently we do not provide adequate treatment, because the differences between ASD cannot be ignored: "although they are subtle, they exist, therefore we advocate for diagnostic independence, communication facilitates among professionals" (González-Alba et al., 2019, p. 342). For this reason, and in order to maintain the particularities of each of the syndromes, in this work the proposal of the Diagnostic and Statistical Manual of Mental

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Disorders (MDE-IV) is assumed, focusing this study on the pedagogical practice of the teachers who work with students with Asperger's Syndrome in the initial level.

Regarding their professional performance, Cabrera & Medina (2017) mention that teachers do not have the knowledge or the necessary instruments to identify children with Asperger's Syndrome, nor to identify their potential for their educational integrity and avoid school dropout. Then, it is necessary that all teachers must make a deep personal reflection on their own pedagogical practice, deconstruct it and permanently rebuild it, in order to adequately meet the educational needs of their students with Asperger's.

For Gómez (2013), then, there are many factors that make teaching work difficult, among them are the large number of students enrolled in the classroom, hindering quality education. Another factor is the lack of specific programs to address inclusiveness, which is why some teachers use teaching strategies typical of regular basic education.

As we can see, various studies show the importance of teacher training to promote the integration of students with special educational needs, including students with Asperger's syndrome, to regular basic education classrooms; however, in reality, most teachers are not prepared to work with children with special needs. The teacher training curriculum, both in universities and in higher educational training institutes, does not guarantee the ideal training of future teachers to carry out their pedagogical practice with students with Asperger's syndrome.

In the case of the Huánuco region, Peru, the curricula of teacher training courses, both in the national and private universities, only consider subjects related to human

development, but there are no subjects that form for teaching children with TEA.

Therefore, this article aims to socialize the experience of the *Education Without Limits* program, aimed at in-service teachers who work with Asperger children. All this in order to contribute to the success of the inclusion of Asperger children in regular basic education.

# **MATERIALS AND METHODS**

The research corresponds to the quantitative methodological perspective, therefore, it is located in the positivist research paradigm, because it seeks to establish the effects that the *Education Without Limit* program produces in the pedagogical practice of initial level teachers who work with Asperger children. The research method is experimental.

For the purpose it corresponds to applied research and for the level of depth to experimental research. The research design used is the quasi-experimental, single-group subclass design with observations and experiments in a time series (Esteban, 2007).

The study population was made up of Initial Education teachers who worked in the district of Huánuco, period 2017. The inclusion criteria were: working in a state educational institution, being between 22 and 50 years old, being a classroom teacher, have at least one Asperger child and have signed the informed consent to be part of the research. Taking these criteria into account, there was a population of 29 teachers, of which eight are men and 21 are women. We worked with the 29 teachers to reduce biases.

The Education without Limits program was designed based on Pichot's approaches

(1995), it consists of eight sessions, each session lasted one hour and one session was developed per week. Group dynamics, exhibitions, brainstorming and role play were included in the development of the program.

The 29 teachers of Initial Education were aiven theoretical and methodological guidance to work with students in four dimensions: mental inflexibility dimension, since people with Asperger's Syndrome (AS) are threatened and anxious about possible changes that may occur in the environment, for this reason they frequently insist on adhering to specific non-functional routines or rituals; restricted interests dimension, because people with AS tend to have areas of restricted interests and show concerns about these areas; speech and language dimension, because the main characteristics in the language of people with AS are: oneconversation, tendency to literal interpretation presenting great difficulties when interpreting metaphors, double jokes; and emotional meanings or dimension, because people with AS have difficulties when it comes to recognizing their emotions and are unaware of strategies that help them manage them.

dependent pedagogical The variable, practice, is made up of three dimensions: cultural, theoretical and practical. The cultural dimension refers to the degree to which the teaching staff share the philosophy of inclusion and the extent to which it is evident to all members of the school community; The theoretical dimension represents the degree to which the teaching staff knows the concepts related to Asperger's syndrome and recognizes the behavioral manifestations for the detection of cases; the practical dimension ensures that classroom practices reflect both the culture and inclusive policies adopted by the school.

To collect information related to the dependent variable, observation was used and the instrument used was the observation sheet, which consists of thirty items to

measure the dimensions of the variable: ten items to evaluate the inclusive culture dimension, ten to the theoretical dimension of inclusive practices and ten to the inclusive practical dimension. Each item had three values: Never (0), Sometimes (1) and Always (2); the qualifier used was vigesimal, from 0 to 20, according to the score a category was assigned: from 0 to 10 points (inadequate), from 11 to 15 (average) and from 16 to 20 (adequate). The observation sheet was applied after each session.

The validity of the observation sheet was performed using the criteria of judges and for reliability the stability measurement method (reliability by test-retest) was used, obtaining a Pearson correlation coefficient R = 0.8929, demonstrating the reliability of the questionnaire. For data analysis, the statistical program SPSS, version 24, was used.

Regarding ethical considerations, we had the informed consent of all the teachers who were part of the study; the ethical guidelines of the American Psychological Association and the Mendive Magazine were also complied with for this type of study. The authorship of the consulted documents is mentioned through the respective citations and references and the professors who were part of the study are kept anonymous and the impartiality in the process of collecting and processing information, as well as in the communication of the results.

#### **RESULTS**

Table 1 shows the results obtained in the pedagogical practice by the teachers of the initial level who work with Asperger children, both before and after applying the eight sessions that comprise the *Education without limits program*. Before the application of the experiment, there were 19 teachers who were part of the inappropriate pedagogical

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practices, which constitutes 65.5%; meanwhile, after the program it was reduced to 0%. Teachers in the "regular" rank were also reduced, from 10 to two teachers. The most significant achievement is reflected in the increase of teachers who are located within an adequate pedagogical practice; from 0 teachers in the initial evaluation, it increased to 27 in the exit evaluation, that is, it grew by 93%

**Table 1-** Pedagogical practice before and after the application of the *Education without Limits* program

	Inadequate		Regular		Suitable		TOTAL	
	F	%	F	%	F	%	F	%
Pretest	19	65.5	10	34.5	0	0	29	100
Posttest	0	0	2	6.9	27	93.1	29	100

The improvement of the pedagogical practice of teachers of the initial level who work with Asperger children is reflected in the evolution of the behaviors of the students in their classrooms, in the interaction with their classmates and teacher. Table 2 shows the record of behavioral control of incidents in the classroom; Of the 29 teachers observed, in the first week no Asperger students sat, did not follow instructions, did not respond to their name, or look into the eyes of the person they were talking to. After the process of strengthening the capacities of teachers, they were able to reverse this situation; by week eight, 27 teachers got their Asperger students follow directions, 28 got their students respond to their name, and 29 teachers got their students sit and look into their eyes.

In the pedagogical practice variable, three dimensions were taken into consideration: cultural dimension (see table 2), theoretical dimension (see table 3) and practical dimension (see table 4).

**Table 2-** Cultural dimension before and after the application of the *Education without Limits* program

	Inadequate		Regular		Suitable		TOTAL	
	F	%	F	%	F	%	F	%
Pretest	17	58.6	12	41.4	0	0	29	100
Posttest	0	0	2	6.9	27	93.1	29	100

**Table 3-** Theoretical dimension before and after the application of the *Education without Limits* program

	Inad	Inadequate		Regular		Suitable		AL
	F	%	F	%	F	%	F	%
Pretest	23	79.3	6	20.7	0	0	29	100
Posttest	0	0	7	24.1	22	75.9	29	100

**Table 4-** Practical dimension before and after the application of the *Education without Limits* program

	Inadequate		Regular		Suit	Suitable		AL
	F	%	F	%	F	%	F	%
Pretest	25	86.2	4	13.8	0	0	29	100
Posttest	0	0	5	17.2	24	82.8	29	100

Tables 2, 3, and 4 shows that pre-school teachers who work with Asperger children, in all dimensions, were able to improve pedagogical practice as a consequence of the application of the *Education without Limits program*. However, it is in the practical dimension where the improvement was most significant. In this dimension, 86.2% of teachers who were at the inappropriate level and 0% adequate in the pretest were invested in the posttest, obtaining 82.8% of teachers at the appropriate level and 0% in the inadequate level.

The improvement of the pedagogical practice of the teachers is reflected in the improvement of the behaviors of the students with Asperger's syndrome; so much so that, at the beginning of the application of the program, no student remained seated, none followed instructions, did not respond to their name, nor did they look into the eyes of their interlocutor. As the sessions of the *Education without Limits* program were carried *out*, the teachers had greater resources to exercise pedagogical practice with Asperger students, to the point that after the eighth session, almost all the students remained seated, followed instructions, responded to their instructions name and looked into the eyes of the interlocutor, as shown in table 5.

**Table 5-** Evolution of classroom behaviors of children with Asperger's Syndrome

CHILDR EN'S BEHAVI ORS	1. t o We ek	2. a We ek	3. a We ek	4. a We ek	5. a We ek	6. a We ek	7. a We ek	8. a We ek
They remain seated	0	5	13	14	16	17	18	29
Follow instructi ons	0	2	9	12	15	18	23	27
They respond to his name	0	6	8	12	14	17	22	28
They look into my eyes	0	5	7	11	17	20	25	29

With the information collected, we proceeded to find the Student's t test for related samples, which is presented in Table 6.

**Table 6-** Student's t test for related samples

		Relate	ed differe		Т	g	Sig.	
	Ha If	Typic al devia	Stan dard error	Conf	5% idenc :erval		ı	(Bilat eral)
		tion	of the mean	lo we r	Hig her			
Pret est - Post test	- 1.5 86	, 501	, 093	- 1.7 77	- 1,39 6	- 17, 042	2 8	, 000

As evidenced in table 6, in the Student's t statistical test a t=-17.042 was obtained, which is less than t=-1.701; Therefore, it is located in the rejection zone of H  $_{0}$ , that is, the statement that indicates that the application of the *Education without Limits program* does not positively influence the pedagogical practice of pre-school teachers who work with Asperger and child children is rejected. H a is accepted which indicates that the application of the *Education Without Limits* program positively influences the pedagogical practice of pre-school teachers who work with Asperger children.

## **DISCUSSION**

It is a great challenge to include Asperger children in regular basic education, but it is not only about allowing them to enter the classroom, educational inclusion is a process of "innovation and improvement that facilitate the participation and performance of all students. (including those most vulnerable to diverse conditions exclusion), which makes it possible to learn incorporate the differences diversities existing among the students" (Valenzuela et al., 2015, p. 72), to promote peaceful coexistence in the diversity.

The training process developed with the "Programa sin Fronteras" allowed teachers who work with Asperger children in the initial level to improve their pedagogical practice, making their students follow instructions, respond to their name, remain seated and look into their eyes. Changes that excited teachers and motivated them to become more committed to the program. In this sense, teachers must remain trained and achieve a level of professionalization and constant improvement, order in adequately meet the educational needs of their students with Asperger's (Cabrera & Medina, 2017, p. 81). In the words of Valenzuela et al. (2015), the teacher plays a decisive role in the classroom, when a student with different abilities joins the classroom; he must foster in his classmates the spirit of helping that student who needs it most. The students are very noble, seeing that the teacher has that intention of help, they do it. Ramón, Aguino & García (2015) arrive at similar results, who consider that "training programs must instill and have a disability, positive orientation towards provide knowledge and pedagogical skills that allow teachers to adapt the contents of the programs, know the technological aids available for some disabilities, individualize the pedagogical procedures" (p. 47).

Consequently, the theoretical knowledge of initial or preschool teachers regarding Asperger's syndrome is necessary, since early intervention facilitates adequate treatment (Zapata et al., 2020).

Pedagogical practice with Asperger children should be based on the principle of individualization and normalization, with the aim of generating a context of normality that allows them to develop their potential to the maximum, without pretending that it is normal. Normalization in the educational field does not mean that the child will have the same educational conditions as the rest of his classmates, but that, based on the same curriculum, the educational proposal must be adapted according to the needs and reality of the student.

The inclusion of children with Asperger's syndrome in regular basic education, particularly early childhood education, is feasible under certain conditions: flexible curricula, relevant educational materials and infrastructure, and above all, adequately trained teachers. Given the limited initial training of teachers to practice teaching with Asperger children, ongoing training is essential to build a favorable environment in classroom, which allows meeting the diversity of interests, abilities, rhythms learning needs of students. This assertion is corroborated by the studies carried out by Alonzo & Aguilar (2020), who by developing learning sessions, using pictograms, made it easier for students with Asperger's syndrome to understand the activities to be carried out and, therefore; achieve their inclusion in the classroom.

The findings of this and other research reaffirm that a properly trained teacher is capable of using different strategies to promote the inclusion of students, center the class on students, make curricular adaptation, promote the diversification of teaching and personalization of experiences of common learning. It is also capable of fostering an environment where respect is

given and received, a fundamental element that favors the maximum development of the capacities of each individual and equal opportunities in students, whatever their physical, psychological, social, economic or cultural condition.

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## **Conflict of interest:**

Authors declare not to have any conflicts of interest.

#### **Authors' Contribution:**

The authors have participated in the writing of the work and analysis of the documents.



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