




Adaptaciones curriculares para la inclusión en la educación física de estudiantes con trastornos del espectro autista

Curricular adaptations for inclusion in the physical education class of students with autism spectrum disorders

- ¹ Jenniffer Elizabeth Bernal Alvaro  <https://orcid.org/0009-0005-3655-0850>
Bolivarian University of Ecuador, 092405. Durán, Ecuador, Campus Durán Km 5.5 via Durán Yaguachi,
Master in Physical Culture Pedagogy with a mention in Inclusive Physical Education
jebernal@ube.edu.ec
- ² Nefertite Cross Pilaloe Rivera  <https://orcid.org/0009-0006-4456-7959>
Bolivarian University of Ecuador, Durán, 092405. Ecuador, Campus Durán Km 5.5 via Durán Yaguachi,
Master in Physical Culture Pedagogy with a mention in Inclusive Physical Education
cnpilaloar@ube.edu.ec
- ³ Giceyaof Charity Maqueira Caraballo  <https://orcid.org/0000-0001-62823027>
Bolivarian University of Ecuador, Durán 092405, Ecuador, Campus Durán Km 5.5 via Durán Yaguachi,
gdmaqueirac@ube.edu.ec



Article of scientific and technological research

Sent: 10/14/2023

Reviewed: 11/09/2023

Accepted: 12/15/2023

Published: 01/04/2024

DOI: <https://doi.org/10.33262/cienciadigital.v8i1.2774>

Quote:

Bernal Alvaro, J., Pilaloe Rivera, CN, & Maqueira Caraballo, G. de la C. (2024). Curricular Adaptations for the inclusion in Physical Education of students with Autism Spectrum Disorders. Digital Science, 8(1), 6-30. <https://doi.org/10.33262/cienciadigital.v8i1.2774>



DIGITAL SCIENCE, and It is a multidisciplinary, quarterly magazine that will be published electronically. Its mission is to contribute to the training of competent professionals with a humanistic and critical vision who are capable of presenting their research and scientific results to the same extent that positive changes are promoted through their intervention. in society. <https://sciencedigital.org>

The magazine is published by the Ciencia Digital Publishing House (prestigious publisher registered in the Ecuadorian Chamber of Books with Affiliation No. 663) www.celibro.org.ec



This magazine is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Copy of license: <https://creativecommons.org/licenses/by-nc-sa/4.0/deed.es>

Palabras claves:

Adaptaciones curriculares, inclusión, Educación Física, Trastorno del Espectro Autista (TEA)

Keywords:

Curriculum adaptations, inclusion, Physical Education,

Resumen

Introducción: La inclusión de estudiantes con Trastorno del Espectro Autista (TEA) a la clase de Educación Física constituye un desafío permanente. **Objetivo:** Proponer un sistema de adaptaciones curriculares para el perfeccionamiento del proceso de inclusión de los estudiantes con (TEA) a la clase de Educación Física. **Metodología:** La investigación siguió un enfoque cualitativo, basado en la investigación -acción áulica, incluyendo cuatro etapas. La muestra de estudio fue seleccionada de manera intencional, siguiendo los criterios de inclusión establecidos para la investigación, resultando unidad de análisis directo dos casos de estudiantes con TEA. Para la recogida de información se emplearon como técnicas la: Entrevista, la observación a clases y el diario de emociones, lo cual facilitó recoger información importante sobre el diagnóstico, necesidades y capacidades de los estudiantes con TEA, observar el proceso de inclusión dentro de la clase de Educación Física y conocer el sentir de los estudiantes sobre la inclusión. Para la validación de la propuesta se utilizó el taller de socialización y la experiencia pedagógica. **Resultados:** 1. Se logra aportar un sistema de adaptaciones curriculares que promueve la inclusión de estudiantes con TEA a la clase de Educación Física. 2. Se aporta una herramienta didáctica valiosa contentiva de estrategias concretas y adaptaciones curriculares específicas que facilitan la praxis pedagógica relacionada con la inclusión. 3. Se contribuye significativamente al enriquecimiento teórico-práctico relacionado con la inclusión de los estudiantes con TEA en el contexto de la Educación Física Inclusiva. **Conclusiones:** La investigación es novedosa, pertinente y factible. Propone soluciones adaptadas a las necesidades de los estudiantes con TEA, permitiendo identificar sus necesidades y desafíos. Las características de la propuesta y su implementación exitosa en dos casos de estudio respaldan su factibilidad y aplicabilidad en un contexto educativo más amplio. **Área de estudio general:** Educación Física. **Área de estudio específica:** Educación Física Inclusiva.

Abstract

Introduction: The inclusion of students with autism spectrum disorder (ASD) in the Physical Education class is an ongoing challenge. **Objective:** To propose a system of curricular adaptations to improve the process of inclusion of students with ASD in the Physical Education class. **Methodology:** The research followed a

Autism
Spectrum
Disorder (TEA)

qualitative approach, based on classroom action research, including four stages. The study sample was selected intentionally, following the inclusion criteria established for the research, resulting in two cases of students with ASD as a direct unit of analysis. For the collection of information, the following techniques were used: interview, class observation and diary of emotions, which facilitated the collection of valuable information about the diagnosis, needs and abilities of students with ASD, observing the process of inclusion within the Physical Education class and knowing the students' feelings about inclusion. For the validation of the proposal, the socialization workshop and the pedagogical experience were used. Results: 1. It is possible to provide a system of curricular adaptations that promotes the inclusion of students with ASD in the Physical Education class. 2. A valuable didactic tool is provided containing concrete strategies and specific curricular adaptations that facilitate the pedagogical praxis related to inclusion. 3. It contributes significantly to the theoretical-practical enrichment related to the inclusion of students with ASD in the context of Inclusive Physical Education. Conclusions: The research is novel, relevant, and feasible. It proposes solutions adapted to the needs of students with ASD, allowing their needs and challenges to be identified. The characteristics of the proposal and its successful implementation in two case studies support its feasibility and applicability in a broader educational context. General Area of Study: Physical Education. Specific area of study: Inclusive Physical Education.

Introduction

Autism Spectrum Disorder (ASD) is a neurological condition that affects a significant percentage of the world's population; according to the World Health Organization (WHO, 2023) It is estimated that 1 in 100 people have ASD; which underlines the importance of addressing this disorder in a variety of settings, including those related to inclusion in the educational context. According to data presented in the Clinical Practice Guide issued by the MSP (2017), in Ecuador it is stated that the trend of cases is increasing and shows that 1,266 people in the country have ASD, it is therefore of transcendental importance to achieve proposals that contribute to the care of these students in the educational and social context.

In Ecuador, despite regulatory advances such as the Organic Law of Intercultural Education (LOEI)(Moncayo, 2023), which affirms the inalienable right to education and inclusion of people with disabilities, young pregnant women, challenges persist in the effective implementation of these provisions. The present difficulties in terms of inclusion mean that there are not always adequate methodological strategies in the field of education, limiting the attention of students with ASD, especially in the Physical Education class.

As a consequence of the aforementioned, the process of including students with ASD in the Physical Education class is conditioned by:

- ✓ Limitations in the competencies of Physical Education teachers to respond to the diversity of students with ASD.
- ✓ Limitations for the planning and application of curricular adaptations.
- ✓ Difficulties in the processes of inclusion and attention to diversity within the Physical Education class, with special interest in students who have ASD.

In correspondence with the above, limitations on the part of Physical Education teachers in offering timely and diverse responses to students with ASD have been identified in the Educational Unit of reference for this study, specifically in the design and application of coherent curricular adaptations. with their needs, which negatively affects the process of including this student in the Physical Education class. Considering this, it is worth asking: How to influence the inclusion process of students with ASD in the Physical Education class? Hence, the objective of the research is: to propose a system of curricular adaptations to improve the process of inclusion of students with (ASD) in the Physical Education class.

Autism Spectrum Disorder

Background and current events of ASD

Swiss psychiatrist Bleuler (1960) used the term “Autism” to describe the detachment of schizophrenic patients from reality. However, Kanner(1943), described it as "Autism in early childhood" as a specific disorder of child development, emphasizing difficulties in social interaction, repetitive behavior and resistance to change. Kanner also emphasized the interest in the continuity and stability of the environment and the strange and limited use of language of these children. On the other hand, pediatrician Asperger(1944) emphasized the complexity of autism and focused on the influence of social interaction and communication. He identified Asperger syndrome, which is characterized by difficulties with social skills and strong patterns of interest in specific areas.

According to the criteria of the Wing researchers(1998), set a precedent in the field of Autism research since he expanded the perception of it; identifying that this went from being a narrow and severe disorder to a broader spectrum, encompassing the different ways in which autism can manifest itself, in turn emphasizing the unique abilities that people with ASD have, contributing to inclusion in society and in educational environments. In correspondence with the aforementioned Artigas-Pallares(2012a)states that, although Asperger Syndrome and autism had differences, they have their main areas of affectation called the “Triad of Deficiencies”: communication, social interaction and cognitive rigidity, to which other authors later added the reference behavior as one of the areas in which they manifest greatest difficulties.

Conceptualization, etiology and classification

The D.M.S.-5(2013)made significant changes to the way ASD is conceptualized and diagnosed; So we can mention some of the main characteristics:

1. Deficiency in communication and social interaction, which includes difficulties in emotional reciprocity, eye contact, understanding and use of non-verbal language and problems establishing social relationships.
2. Repetitive and stereotyped behavior patterns, as well as inflexibility in routines, restricted interests or fixations on particular topics.

Etiology

Despite multiple investigations worldwide regarding Autism Spectrum Disorder (ASD), it has not been possible to obtain a definitive reason that explains its origin, in this sense according to different authors Varela et al.(2011), Rivas et al.(2009), Balbuena(2015)and Artigas-Pallares(2012b), mention that although there is no definitive cause, there are a series of combinations of factors that are evident, such as: environmental, biochemical, genetic and neurological factors that interact in a complex way in relation to the etiology of Autism.

Classification

The Term Autism Spectrum Disorder (ASD) according to the DMS Mental Disorders Classification System-V(2013)mentions that it is an impairment of neurological, mental and psychological development; while the International Statistical Classification of Diseases and Related Health Problems, ICDeleven(2019)It encompasses a broader range of neurodevelopmental disorders that affect brain function, cognition, behavior, and social interaction. Below, we can see the comparative table of diagnostic classification according to the DSM-V(2013)and ICD 11(2019)Table 1, in which we can see that Rett Syndrome is no longer found as it has a difference in its pathophysiology according to

Ramírez et al.(2019)and in both classifications Asperger's Syndrome and Childhood Disintegrative Disorder disappear to integrate them into a single ASD diagnosis.

Table 1

Comparative table of diagnostic classification of ASD according to DSM-V and ICD 11

DSM-V	ICD11
Specify if: Associated with a medical or genetic condition, or a known environmental factor; Associated with another neurodevelopmental, mental or behavioral disorder	6 A02.0 Autism Spectrum Disorder without Intellectual Development Disorder with mild or no functional language impairment.
Specify the current severity of criteria A and B: Needs Very Significant Help, Needs Significant Help, Needs Help.	6 A02.1 Autism Spectrum Disorder with Intellectual Development Disorder with mild or no functional language impairment.
Specify s: with or without accompanying intellectual deficit, with or without accompanying language impairment, With catatonia.	6 A02.2 Autism Spectrum Disorder without Intellectual Development Disorder with functional language impairment.
	6 A02.3 Autism Spectrum Disorder with Intellectual Development Disorder with functional language impairment.
	6 A02.5 Autism Spectrum Disorder with Intellectual Development Disorder and Absence of Functional Language.
	6 A02 And Other Autism Spectrum Disorders.
	6 A0Z Autism Spectrum Disorder unspecified.

Fountain: Taken from DM-V2013 and CIE 11 2019

ASD is classified according to the DSM-5 with respect to the levels of help that the individual requires, which is how it recognizes three levels of severity of Autism Spectrum Disorder, detailed below in Table 2.

Table 2

Autism Spectrum Disorder Severity Levels

Severity level	Social communication	Restricted and repetitive behaviors
3rd grade “He needs very significant help”	Severe impairments in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few intelligible words who rarely initiates interaction and who, when he does, uses unusual strategies only to meet needs and only responds to very direct social approaches.	Behavioral inflexibility, extreme difficulty coping with change, or other restricted/repetitive behaviors noticeably interfere with functioning across the board. Intense anxiety/difficulty changing focus of action.

Table 2
Autism Spectrum Disorder Severity Levels (continuation)

Severity level	Social communication	Restricted and repetitive behaviors
Grade 2 "Needs significant help"	Notable deficits in verbal and non-verbal social communication skills; apparent social problems even with ON-SITE help; limited initiation of social interactions; and reduced response or non-normal responses to other people's social openness. For example, a person utters simple phrases, whose interactions are limited to very specific special interests and who has very eccentric non-verbal communication.	Behavioral inflexibility, difficulty coping with change, or other restricted/repetitive behaviors often appear clearly to the casual observer and interfere with functioning in various contexts. Anxiety and/or difficulty changing the focus of action.
Grade 1 "Need help"	Without ON-SITE help, social communication deficiencies cause significant problems. Difficulty initiating social interactions and clear examples of atypical or unsatisfactory responses to other people's social openness. You may appear to have little interest in social interactions. For example, a person who is able to speak in complete sentences and establish communication, but whose extensive conversation with other people fails and whose attempts to make friends are eccentric and usually unsuccessful.	Behavioral inflexibility causes significant interference with functioning in one or more contexts. Difficulty alternating activities. Organization and planning problems make autonomy difficult.

Note: Taken from DMS-V2013

Forms of schooling and inclusion of students with ASD

According to Gómez et al.(2019)The inclusion process must address educational diversity starting from the organization in the school, the community and the family; In this sense, García et al.(2019)and Maqueira et al. (2023), mention that this process aims to address and respond to the needs of all students, seeking to transform the educational system and learning environments that promote the inclusion of all students with SEN.

In Ecuador, there are several forms of schooling and inclusion for students with Autism Spectrum Disorder (ASD). Among them we have: Inclusion in regular schools and Specialized Comprehensive Care Centers (CAIE), which provide educational care, specialized therapies and psycho-pedagogical support; Although they are not regular schools, partial inclusion is promoted through participation in activities. To ensure effective inclusion of students with ASD, the participation and support of parents together with the educational community is important, in this sense Valdez(2019), considers the intervention of a multidisciplinary team that contributes to a favorable comprehensive intervention to be of great relevance. Regardless of the progress achieved, we are of the opinion that currently it is not possible to know all the information necessary to talk about a true process of educational inclusion of students with ASD; precisely because of the diversity of forms of manifestation and the signs that accompany it.

The inclusive physical education class

According to the National Curriculum of Physical Education of Ecuador (Ministry of Education of Ecuador, 2016), mentions that “Inclusive Physical Education (EFI), as teaching practices that pedagogically thematize knowledge about the perceptions of the body and bodily practices with sense and contextualized meaning (games, dances, sports, gymnastics, among others)”, makes Physical Education provides a unique opportunity to improve the physical, social and emotional skills of students who have educational needs. However, we must recognize that, in the case of students with ASD, they may have difficulties understanding the rules or instructions of the game, interacting with their peers, as well as controlling their emotions and behavior in physical practice. - sporty. For this reason, teachers must consider the application of curricular adaptations as a fundamental basis for the development of their class, starting from the use of visual, auditory, tactile, psychological, physical supports, to the adaptation of the resources, the methodology and evaluation to be carried out within of the class.

Curricular adaptations. Definition, types

Curricular adaptations constitute one of the main tools that achieves the individualization of teaching-learning, taking into account the needs of the students. These are modifications, adjustments, flexibility that can be made to each of the elements that make up curricular planning in order to meet the needs of students, providing them with the different supports they need. It is shared with the previous authors in pointing out that curricular adaptations encourage compliance with the inclusion approach, facilitating equal opportunities for all students, mainly considering their needs and physical abilities. In accordance with the Work Guide on Curricular Adaptations for Special and Inclusive Education of Ecuador issued by the Ministry of Education of Ecuador (2023), defines the types of Curricular Adaptations as follows: 1.-Curriculum adaptations according to the level of specificity, 2.-Curriculum adaptations according to the entity in which it is applied., 3.-Curriculum adaptations according to the degree of affectation., 4.-Curriculum adaptations according to duration.

According to Sabarrós (2017), adaptations refer to the process that makes the curriculum accessible to all students, taking into account all the diversity that this implies, it is making all curricular elements more flexible to respond to needs. According to Granda (2020), curricular adaptations are methodological strategies that the teacher uses in order to guarantee academic progress, especially for students with Special Educational Needs (SEN); modifying class content, activities and evaluations, to achieve meaningful learning. For Echeverría et al. (2017), curricular adaptations are a process in which it is possible to determine the strategies to be used in the class and that is reflected in the planning to achieve learning for students with SEN in accordance with the cognitive and motor possibilities and capacities.

In the context of Physical Education, curricular adaptations occupy a fundamental place, ensuring the development of Inclusive Physical Education. In this order it is shared with López(2000), Maqueira(2005), Figueredo et al.(2019)and Maqueira et al.(2023), pointing out that these are adjustments, modifications, and flexibilities necessary to make in all elements of the curriculum with the objective of achieving the attention and inclusion of all the diversity of students; including those with ASD. In the case of working with students who have ASD, they promote participation and socialization within the class, as well as the development of their physical-motor skills and abilities; For this, it is important that the teacher has knowledge of how to make curricular adaptations and how to adapt each curricular component according to the needs of each student.

The opportunity for educational inclusion lies in having the ability to understand that Responding to the heterogeneity and diversity of the student body in the school context means not only having coherent pedagogical and didactic responses to the needs of the class groups, but also the skills required to implement timely solutions adapted to the diversity of the class group.

In line with the above and given the need to provide a timely response to the process of inclusion of students with ASD in the Inclusive Physical Education class, the research carried out followed the following methodology.

Methodology

To develop the research, a methodology with a qualitative approach was followed, which allowed obtaining a broader vision of the topic investigated. The type of research was based on classroom action research, accompanied by theoretical and empirical methods. Among the theoretical methods used are historical-logical, analytical - synthetic, inductive - deductive, modeling; while the empirical methods used were observation and documentary analysis.

The research was developed in four stages (diagnosis, elaboration, implementation and validation), all of this was developed in a Private Educational Unit located in the northern sector of the city of Guayaquil. The study sample used for the research is Non-Probabilistic, selected intentionally and complying with the selection criteria established for the research, which was composed as an informant sample of two Physical Education teachers, DECE specialists, while The unit sample of direct analysis was composed of two students with ASD from the Tenth Year of Higher Basic Education with level 2 help and 10 conventional students distributed in two cooperative work groups (Group A- Group B) in which to the two students with ASD in the Physical Education class, one in each group with the conventional students.

In the data collection, the interview and an observation guide to the Physical Education class validated under the Likert criteria were used as instruments, as well as an interview with specialists from the institution, conventional students and students with ASD; In addition, the Emotion Diary technique was used

Thus obtaining the following research results:

Table 3

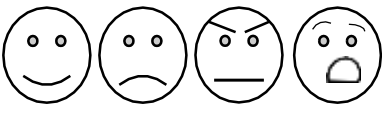



Instruments used	Aim	Initial result of the investigation	Final result of the investigation
Interview with specialists	Know the main needs and abilities that students with ASD have so that based on a medical and psychological diagnosis we can use all the given strategies following all their considerations.	The specialists stated that the students have a diagnosis of Autism Spectrum Disorder with a level of help of grade 2. In addition, they have difficulties socializing and getting involved with their classmates. They are interested in music, they like to take walks and play sports games.	In the final report issued by the specialists they mention that after the application of the proposal, the students are happier and enjoy the development of the class, they show interest in participation and managed to improve socialization and inclusion with their classmates. course.
Interview with students with ASD	Know the reality of students with Autism Spectrum Disorders in the Physical Education class from their perspectives so that they can be considered within the pedagogical proposals in the classroom, thus contributing to enjoyment and greater participation.	The students with ASD during the interview about their experience in the Physical Education class stated that: They do not feel included in the class, they get bored and it is a time to walk around and be outside the classroom. In addition, they mentioned that they prefer to play sports instead of exercising. The students stated that they do not feel happy working with their classmates and that they do not receive help to carry out the activities that are asked of them in class.	After the proposal was applied, the instrument was applied again in which the students with ASD stated that: <ul style="list-style-type: none"> •They feel included in the class and that they are happy on their EF days •They learn and have fun doing PE •Students with ASD mention that their classmates and teachers help them in the activities they do.
Interview with conventional students	Know the level of inclusion in the educational environment regarding students with ASD within the Physical Education class to identify possible causes that prevent the inclusion of all students with ASD.	Conventional students mention not having any interest in including their classmates with ASD in Physical Education classes, they also state that they do not have knowledge of the reality and needs of their classmates with ASD, they mention not knowing what is happening to them, or how to help them so that made it easier for them to participate in the activities, a small group of conventional students were a little more empathetic and interested in knowing a little more about how to help their classmates with ASD so that they can participate in classes.	<ul style="list-style-type: none"> •Students are concerned about including their classmates with ASD in Physical Education classes. •Students know a little more about the reality and needs of their classmates with ASD. •Conventional students reported feeling more empathy for their classmates with ASD

Table 3*(continuation)*

Instruments used	Aim	Initial result of the investigation	Final result of the investigation
Interview with Physical Education teachers	To know the perception of Physical Education teachers in pedagogical practice for the identification of the strengths and weaknesses of the inclusive process of students with ASD through the application of the survey.	During the interview, the teachers in the area stated that they only have empirical experience with students with ASD, that they do not know how curricular adaptations are made in their plans and how to apply them in practice or what aspects they should consider when working with ASD students since they have not received any type of specific training; They also mentioned that they try to include the students but that the main difficulty is that they are uninterested in doing some type of physical activity and choose to go for a walk around the field.	<ul style="list-style-type: none"> •The teachers considered that the activities proposed in their classes are inclusive for students with ASD. •In addition, the methodological strategies implemented favored the participation of students with ASD in classes. •The teachers rated the inclusion of students with ASD in the Physical Education class as "very important." •They considered that the methodological strategies used (curriculum adaptations) promoted social interaction between students with ASD and their peers. •The teachers ensure that their students include their classmates with ASD in most of the proposed activities.
Observation Guide to Physical Education Class	Identify the type of pedagogical practices, strategies, and curricular adaptations that Physical Education teachers use to facilitate the process of including students with Autism Spectrum Disorders in the class.	<ul style="list-style-type: none"> •The indicators observed in the Physical Education class showed that the teachers did not consider the students' prior knowledge, they did not set learning objectives and achievements with curricular adaptations, they did not use inclusive methodological strategies and they did not encourage social interaction. •The students were not active in the teaching-learning process. •The teachers did not get the conventional students to include their classmates with ASD in the proposed activities. 	<ul style="list-style-type: none"> •The indicators observed in the Physical Education class showed that teachers did consider the students' prior knowledge, posed learning objectives and achievements with curricular adaptations, and used inclusive methodological strategies to promote social interaction. •The students were active in the teaching-learning process, they enjoyed the activities. •The teachers managed to get conventional students to include their classmates with ASD in the proposed activities.

Table 3

(continuation)

Instruments used	Aim	Initial result of the investigation	Final result of the investigation
Observation Guide for a Student with ASD	Know the needs and experiences of students with ASD to improve their inclusion and participation in physical education class.	<p>The social interaction of students with ASD before, during and after classes is not evident.</p> <ul style="list-style-type: none"> •Students with ASD do not know the objectives of the activities and do not show enthusiasm for participating. •The behavior is indifferent towards oneself and towards other members of the educational community. 	<p>The social interaction of students with ASD before, during and after classes is evident.</p> <ul style="list-style-type: none"> •Students with ASD know the objectives of the activities and show enthusiasm for participating. •The behavior is respectful towards oneself and towards other members of the educational community.
Emotion diary	Identify the emotions experienced by students with ASD and conventional students before, during and after PE classes, to understand the emotions that influence the teaching-learning process through the use of cards that allow their recording.	<p>During the recording of the emotions diary, cards were used that indicated joy, sadness, anger, fear, which were shown to know how they felt in class:</p> 	<ul style="list-style-type: none"> •All students expressed feeling happy before starting PE classes 
		<p>Being that, the majority of students expressed feeling sad before starting PE classes.</p> <p>During classes, a variability in emotions was observed between fear and joy according to the activities they carried out since the students with ASD did not participate, but they did take advantage of the time to walk around the entire classroom.</p> <p>A pattern of joy was evident when given a basketball.</p> <p>All students with ASD expressed variability in their emotions at the end of class, depending on whether they used the ball or were allowed to walk freely.</p>	<ul style="list-style-type: none"> •During classes, a constant emotion of joy was observed since they were able to participate in cooperative groups with other classmates.  <ul style="list-style-type: none"> •At the end of classes, all the students expressed joy, and it was notable if the activities carried out involved pre-sports games, recreational activities, body language and music. 

Discussion

The results obtained in this first diagnostic phase were of great research importance since it provided a broad vision of the inclusion of students with Autism Spectrum Disorder (ASD) in the Physical Education class.

Students with ASD show limited social interaction before, during and after classes. They do not understand the objectives of the activities and show little interest in participating. This disinterest motivates the student to leave class. This indicates the importance of understanding the individual needs of students with ASD and developing appropriate support strategies. This information highlights the importance of addressing the individual needs of students with ASD to improve their inclusion experience within the PE class.

Conventional students mention not having any interest in including their classmates with ASD in Physical Education classes due to the lack of knowledge they have of their reality and needs, they mention not knowing what is happening to them, or how to help them to makes it easier for them to participate in the activities, a small group of conventional students show a little more empathy and show interest in knowing a little more about how to help their classmates with ASD so that they can participate in classes.

Although the teachers have a certain degree of empirical experience working with students with Special Educational Needs (SEN), including ASD, none of them make specific curricular adaptations for the inclusion of students with ASD in the Physical Education class. Despite considering that the activities are inclusive, the lack of specific training and the absence of curricular adaptations suggest the need to develop a system of curricular adaptations in accordance with the current national curriculum that guarantees educational inclusion.

The indicators observed in the Physical Education class suggest that teachers do not always consider students' prior knowledge, do not set objectives with curricular adaptations, and do not encourage social interaction of students within the class.

The results of this diagnostic phase highlight the need to address the inclusion of students with ASD from a comprehensive perspective. This includes the development of curricular adaptations in the Physical Education class, which must be characterized by offering levels of help and support verbal, visual, physical, auditory, as well as adaptations of materials, methodologies and forms of evaluation; Added to this is the need to offer training to teachers to improve their professional practice and positively influence the process of attention to the individual needs of students with ASD to guarantee a positive and enriching experience; which corresponds to what was stated by Maqueira(2005), Irazabal-Bohorquez et al.(2022)and Guevara et al.(2017), which emphasize and

highlight the importance of curricular adaptations as a necessary tool for the inclusion of students with ASD in the Physical Education class.

Taking into account this, we move on to other phases within the research, which is the development and implementation of an innovative proposal that provides the necessary curricular adaptations for students with ASD in which they can use levels of help that improve the teaching-learning process of Education. Physical.

Proposal

Curricular adaptations for the inclusion of students with autism spectrum disorders in physical education class

General objective:

Develop a system of curricular adaptations to improve the inclusion process of students with ASD in the Physical Education class through the use of levels of curricular help.

Specific goal:

- ✓ Know the main characteristics of students with (ASD) to identify educational needs in the Physical Education class environment.
- ✓ Improve the teaching-learning process of students with (ASD) to promote their motor development and social interaction.
- ✓ Guide teachers with a system of curricular adaptations to improve their professional competence.
- ✓ Implement a system of curricular adaptations to improve the inclusion of students (TEA) in the Physical Education class.
- ✓ Evaluate the relevance and impact of the system of curricular adaptations in relation to the inclusion of students (TEA) in the Physical Education class.

Justification

Inclusion in education is a fundamental principle aimed at guaranteeing equal opportunities and access to education for all students, regardless of their individual abilities and characteristics. Students with (ASD) have special needs that require special attention to enable them to actively and meaningfully participate in all aspects of the school environment, including Physical Education class. This being a discipline that goes beyond physical activity and sports; It also promotes social interaction, motor development and self-esteem. However, for students with ASD, these classes can present significant challenges due to differences in communication, social interaction, and

sensory processing. Therefore, it is very important to implement Curricular Adaptations that facilitate their participation and learning in this environment.

Curricular adaptation involves modifying, adjusting, making the contents, methodologies and evaluations more flexible, which requires an individualized and flexible approach for the effective participation of each student. This not only benefits students with ASD, but also enriches the learning experience of other mainstream students by promoting empathy, tolerance, and cooperation.

Introduction

The purpose of this proposal is to present a curricular adaptation system specifically designed to promote the inclusion of students with ASD in the Physical Education class. For its development, 4 stages were determined that facilitated the research process.

Stage 1-Diagnosis: In this phase we learned about the real state of the process of including students with ASD in the Physical Education class, in which the following instruments were used:

- ✓ Interview with specialists from the institution's DECE to learn about the diagnosis, needs and abilities of students with ASD
- ✓ Interview with conventional students and students with ASD, teachers in the area.
- ✓ Observation guide aimed at students with ASD and the Physical Education class.
- ✓ Diary of emotions applied to all students.

The data collected served to understand the needs and perspectives of students with ASD and their inclusion process in the Physical Education class, these results being the basis for the formulation of a proposal that contributes to the inclusion process. Likewise, at this stage the selection of class groups was carried out to make the proposal for curricular adaptations.

Stage 2- Preparation of the proposal for Curricular Adaptations for the inclusion of students with ASD in the Physical Education class

In this stage, the results of the previous phase were considered, the proposal design of the curricular adaptations was carried out that aim not only to ensure the participation of students with ASD in Physical Education classes, but also to promote their motor development, social skills and self-esteem through the use of motor challenges and cooperative work; in which the Physical Education Curriculum issued by the MINEDUC was considered (2016) exemplifying in each of them the implementation of curricular adaptations according to the needs and abilities of students with ASD, for this, studies preceded by different authors have been considered, such as: Arráez(1998), Maqueira et

al.(2006-2017), Kings(2016)and Aponte(2021), which mention the need to carry out an inclusive process that provides equal opportunities for all students and address inclusion through curricular adaptations, the results of these studies form the solid foundation on which this system of curricular adaptation is built.

Table 4

Example of a scheme to make curricular adaptations

Type of educational need or disability	Contents	Help levels							Adaptations		
		Verbal	Auditory	Visual	Physical	Touch	Psychological, Educational	Clinical,	Materials	Task Rules	Assessment

Fountain:Maqueira (2005) and Maqueira et al. (2023)

Stage 3- Implementation

This stage began with the development of a socialization workshop aimed at 5 Physical Education graduates, 3 Masters with teaching experience, 3 teachers from other areas in which favorable results were obtained, thus stating that the proposed proposal does contribute to the solution. of the problem, that the structure followed and the design have a relationship between all the components, also that the proposal is viable, relevant and innovative in the field of inclusive Physical Education. Obtaining the following results in the validation of the socialization workshop

Table 5

CRITERION	Completely	Partially	Does not contribute
The proposed proposal contributes to the solution of the problem under study.	100%		
The structure followed for its design allows establishing the relationship between all its components.	90%		
Its characteristics, structure and components make it a viable, relevant, innovative proposal in the context of Inclusive Physical Education, resulting in a highly effective alternative and easy applicability in current educational scenarios.	100%		

Table 5

(continuation)

CRITERION	Completely	Partially	Does not contribute
It contributes to the improvement of teachers' professional skills and to the improvement of the quality of the teaching-learning process in Inclusive Physical Education.	100%		
Its application contributes to the improvement of the inclusion process of students with educational needs associated or not with a disability to the Physical Education class with emphasis on those with Autism Spectrum Disorder.	100%		
In your opinion as a legal representative or parent, you believe that the proposal contributes to the inclusion and attention to the needs of your child within the class, helping him or her to feel better and included.	100%		

Stage 4- Validation

Once the previous stage was completed, the proposal proposed was directly applied through the Pedagogical Experience applied in the Physical Education class with the tenth year students of Higher Basic Education, which was developed in 6 classes in which favorable results were achieved. process of inclusion of students with ASD in the Physical Education class involving all the subjects under study, for this the instruments of the initial phase were applied again such as: Interview with specialists, Interview with conventional students and students with ASD, Interview with Physical Education teachers, Observation Guide for the Physical Education Class, Observation Guide for a Student with ASD, Diary of emotions; obtaining favorable results when using the system of curricular adaptations to improve the inclusion process of students with (ASD) to the Physical Education class through the use of curricular help levels proposed in the proposal. All of this determined the feasibility, relevance and novelty of the proposal, facilitating the inclusion of the two cases of students with ASD in the Physical Education class and the joint participation of all students.

In summary, the contribution made related to the system of curricular adaptations is valued as very positive, which contributed to significantly promoting the inclusion of students with ASD in the Physical Education class, favoring their participation and motor development. It is also emphasized that manages to provide a valuable teaching tool that facilitates and enriches the pedagogical-educational praxis from inclusion by providing concrete strategies and specific curricular adaptations for students with ASD aimed at their inclusion and joint participation with the rest of the students within the Physical Education class. . It contributes significantly to the theoretical-practical enrichment

related to the inclusion of students with ASD in the context of Inclusive Physical Education.

Table 6

Example of curricular adaptation

*Curriculum block:*1.- Playful Practices The Game and playing

*Skill:*EF.4.1.1 Participate in different categories of games (traditional, popular), recognizing the cultural contribution coming from their origins, objectives and logic to national identity.

Aim: Actively participate in traditional games to improve jumping and coordination through traditional games using motor challenges in cooperative work groups.

TYPE OF EDUCATIONAL NEED OR DISABILITY	CONTENTS	HELP LEVELS					MATERIALS	ADAPTATIONS	
		VERBAL	AUDITOR	VISUAL	PHYSICAL	TOUCH PSYCHOLOGICAL, CLINICAL, EDUCATIONAL		TASK OR RULES	ASSESSMENT
Autism Spectrum Disorder Grade 2	Traditional and popular games -Bagged	Explain clearly and sequencing the activities to be carried out. Example: 1.- We are going to form groups of 6 students. 2.-Explain the process to perform the jump in the bagging game.	Demonstrate with example all of the activities to be carried through out.	Delimitation of the space to be used to be carried through lines and cones		Motivation and support in participation.	Big and wide bag. Cones. Marked lines. Basketball court	-Formation of 2 cooperative groups of 6 students. Bagged: -Challenge students to play bagging as a relay. Condition of the rule: Each student in the group must move in space jumping with the bag on without stopping. time conditioner: The group will be able to practice for 10 minutes prior to the group presentation. Adapted motor conditioning: 2 students from each group must combine jumping with movement like a walk with the bag on.	-Direct observation -Checklist -Evaluation rubric -Actively participates in cooperative work. -Achieve the combination of jumping and walking in the bagging game safely when participating.

Table 6
Example of curricular adaptation(continuation)

TYPE OF EDUCATIONAL NEED OR DISABILITY	CONTENTS	HELP LEVELS						ADAPTATIONS		
		VERBAL	AUDITORY	VISUAL	PHYSICAL	TOUCH	PSYCHOLOGICAL, CLINICAL, EDUCATIONAL	MATERIALS	TASK OR RULES	ASSESSMENT
Autism Spectrum Disorder Grade 2	Traditional and popular games									
	-3 leg race	Explain clearly and sequenced the activities to be carried out. Example: 1.- We are going to form pairs within the cooperative group made up of 6 students. 2.-Explain the correct way to tie your left leg with your partner's right leg. 3.- Explain the coordinated movement for displacement.	Demonstrate with example all of the activities to be carried through out.	Delimitation of the space to be used lines and cones			Motivation and support in participation.	Handkerchiefs. Cones. Marked lines.	3 leg race -Challenge students to participate in the 3-legged race with the objective of transporting 6 balls to the finish line. Condition of the rule: All the students in the group will join in pairs and must tie their left leg next to the right leg of their partner and achieve the transfer of the ball to the goal. time conditioner: The group will be able to practice for 15 minutes prior to the group presentation. Adapted motor conditioning: To carry out the transfer they must do so counting in sequence 1,2... 1,2...	-Direct observation -Checklist -Evaluation rubric. -Demonstrates coordination in the movement of movement in the 3-legged race. -Actively participate in cooperative play.

Conclusions

In conclusion, the following points are considered:

- It is possible to present a system of curricular adaptations to be made within the Physical Education class for students with ASD. It was prepared based on the results obtained in the initial diagnosis, which evidenced the need to create a system of curricular adaptations that would favor the process of inclusion and attention to the diversity of students with ASD within the Education class. Physical; considering the integration of all the blocks that make up the current Physical Education curriculum in Ecuador; by adapting the content systems and

the different levels of help that can be offered according to the needs of each student, which range from verbal, physical, auditory, visual, tactile and psychological aids and supports, together with the adaptations of the materials and rules, methodologies and forms of evaluation that are applied. All of this significantly favors the process of including students with ASD in the Physical Education class and in turn allows the teaching strategy developed by the teacher to focus on the individual needs of each case; favoring the development of motor, social, behavioral and communication skills in the cases studied.

- Its high feasibility, scientific novelty and relevance were confirmed through the action research process, the socialization workshop carried out and the pedagogical experience developed through the implementation in 6 classes of the proposal; corroborating the contribution that the proposal presented has to the solution of a problem necessary to solve in the current context of Inclusive Physical Education in Ecuador. All of which supports its implementation and extension in broader and similar pedagogical contexts.

Conflict of interests

The authors declare that they have no conflict of interest in the article presented.

Bibliographic references

- Aponte García, CR (2021). Curricular adaptations for the learning of students with special educational needs [Master's thesis, Guayaquil: ULVR, 2021.].
<http://repositorio.ulvr.edu.ec/handle/44000/4448>
- Arraez Martínez, JM (1998). Theory and praxis of curricular adaptations in Physical Education: A motor intervention program applied in Primary Education. Archidona (Málaga): Aljibe, 1998.
<https://redined.educacion.gob.es/xmlui/handle/11162/66840>
- Artigas-Pallares, J., & Paula, I. (2012a). Autism 70 years after Leo Kanner and Hans Asperger. *Journal of the Spanish Association of Neuropsychiatry*, 32(115), 567-587. <https://doi.org/10.4321/S0211-57352012000300008>
- Artigas-Pallares, J., & Paula, I. (2012b). Autism 70 years after Leo Kanner and Hans Asperger. *Journal of the Spanish Association of Neuropsychiatry*, 32(115), 567-587. <https://doi.org/10.4321/S0211-57352012000300008>
- Asperger, H. (1944). Die „Autistischen psychopathen“ im kindesalter. *Archiv für psychiatrie und nervenkrankheiten*, 117(1), 76-136.

- Balbuena, F. (2015). Etiology of autism: The idiopathic-syndromic continuum as an explanatory attempt. *Chilean Journal of Neuro-Psychiatry*, 53(4), 269-276.
- Bleuder, E. D. (1960). *The schizophrenia group*. Buenos Aires: Hormé.
- Diagnostic and statistical manual of mental disorders (DSM-5). (2013). Arlington, VA: American Psychiatric Association.
<http://archive.org/details/diagnosticstatis0005unse>
- Echeverría, O., Posso, M., Galárraga, A., Gordón, J., & Acosta, N. (2017). Inclusive curricular adaptation in regular education. *Ecos de la Academia Magazine*, 3(05), Article 05.
- Figueredo Frutos, LL, Figueredo Fonseca, EL, & Jiménez García, RY (2019). Book: *Physical activities for autistic children. A methodology for your care (Original)*. Olimpia: Scientific publication of the Faculty of Physical Culture of the University of Granma, 16(54), 229-239.
- García Alcívar, ME, Vegas Meléndez, H., García Alcívar, ME, & Vegas Meléndez, H. (2019). The importance of comprehensive training in the inclusion processes of students with cognitive disabilities. *Journal of Humanistic and Social Sciences (ReHuSo)*, 4(2), 53-65. <https://doi.org/10.33936/rehuso.v4i2.2132>
- Gómez Valdés, A., Planes Rivera, D. de la C., Gómez Ledesma, Y., Gómez Valdés, A., Planes Rivera, D. de la C., & Gómez Ledesma, Y. (2019). Methodological actions to contribute to the Inclusive Physical Education process: An approach to the topic. *Mendive. Journal of Education*, 17(1), 84-96.
- Granda, J.J. (2020). Curricular adaptations for students with special needs. *Science Portal*, 1(1), Article 1. <https://doi.org/10.51247/pdlc.v1i1.286>
- Guevara, NGM, López, LEV, & López, PV (2017). Curricular Adaptations for Educational Inclusion in the Benjamín Araujo Educational Unit. *Digital Science*, 1(2), Article 2. <https://doi.org/10.33262/cienciadigital.v1i2.58>
- Irrazabal-Bohorquez, A., Correa-Zuloaga, M., & Looor-Zamora, MJ (2022). Multiple Intelligences and their importance in curricular adaptations in the common classroom. *Knowledge Pole*, 7(5), Article 5.
<https://doi.org/10.23857/pc.v%vi%i.4000>
- Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child*, 2, 217-250.

- Lopez Rodríguez, MMJ (2000). Readings: Physical Education and Sports, Digital Magazine. <http://www.efdeportes.com/efd19/integr.htm>
- Maqueira Caraballo, G. de la C. (2005). Study of psychomotor development, social-family climate and curricular adaptations in physical education of minors with strabismus and amblyopia, before their inclusion in general education. <https://digibug.ugr.es/handle/10481/744>
- Maqueira Caraballo, Giceya, Arraéz Martínez, Juan, Cruz Francisco, & López Rodríguez, Alejandro. (2006). Curricular adaptations in the physical education class of minors who present strabismus and amblyopia. <https://efdeportes.com/efd92/clase.htm>
- Maqueira Carabayo, G., Recalde Ayona, A., Bonifaz Arias, I., Aguilar Chasipanta, W., Álvarez Zambonino, E., & Sánchez Espinoza, O. (2017). Diversity, integration and inclusion to pedagogically improve Physical Education classes. <https://efdeportes.com/efd225/diversidad-integracion-e-inclusion-para-educacion-fisica.htm>
- Maqueira Caraballo, G., Guerra Iglesias, S., Martínez Isaac, R., & Velastegui López, LE (2023). Inclusive education: Challenges and opportunities for school institutions. *Journal of Science and Research: Science and Research Magazine*, 8(3), 210-228.
- Ministry of Education of Ecuador. (2016). National Physical Education Curriculum of Ecuador. <https://educacion.gob.ec/educacion-educacion-fisica/>
- Ministry of Education of Ecuador. (2023). Guide to Curricular Adaptations for Special and Inclusive Education. Work guide. <https://oei.int/oficinas/ecuador/publicaciones/guia-de-trabajo-adaptaciones-curriculares-para-la-educacion-especial-e-inclusiva>
- Ministry of Public Health (MSP). (2017). Clinical Practice Guideline (CPG). Spectrum Disorders in children and adolescents: Detection, diagnosis, rehabilitation and follow-up. https://www.salud.gob.ec/wp-content/uploads/2014/05/GPC_Trastornos_del_espectro_autista_en_ninos_y_adolescentes-1.pdf
- Moncayo, P. (2023, July 29). Organic Law of Intercultural Education (LOEI) 2023. Government Wiki. <https://gob.wiki/ley-organica-de-educacion-intercultural-loei-2023/>

- World Health Organization [WHO]. (2019). International Classification of Diseases (ICD)-11. <https://www.who.int/es/standards/classifications/classification-of-diseases>
- World Health Organization [WHO]. (2023). Autism. <https://www.who.int/es/news-room/fact-sheets/detail/autism-spectrum-disorders>
- Ramírez Vargas, A., Sánchez Prieto, JM, & Quirola Ayala, V. (2019). New diagnostic categories in Autism Spectrum Disorder (ASD). Evolution towards DSM 5 and CIE 11. XX. <https://psiquiatria.com/bibliopsiquis/nuevas-categorias-diagnosticas-en-trastorno-del-espectro-del-autismo-tea-evolucion-hacia-dsm-5-y-cie-11>
- Reyes Cevallos, A. (2016). Guide to curricular adaptations for teaching swimming to children with autism spectrum disorders of the ISAAC Psychoeducational Center. [bachelorThesis, University of Guayaquil. Faculty of Physical Education, Sports and Recreation.]. <http://repositorio.ug.edu.ec/handle/redug/27734>
- Rivas Torres, RM, López Gómez, S., & Taboada Ares, EM (2009). Etiology of Autism: A Topic for Debate. *Journal of Educational Psychology*, 15(2), 107-121. <https://doi.org/10.5093/ed2009v15n2a3>
- Sabarrós, R. (2017). Curricular adaptations. <https://core.ac.uk/download/pdf/235858043.pdf>
- Valdez-Maguiña, G., & Cartolin-Príncipe, R. (2019). Challenges of school inclusion of children with autism. *Revista Medica Herediana*, 30(1), 60. <https://doi.org/10.20453/rmh.v30i1.3477>
- Varela-González, DM, Ruiz-García, M., Vela-Amieva, M., Munive-Báez, L., & Hernández-Antúnez, BG (2011). Current concepts on the etiology of autism. *Pediatric Act of Mexico*, 32(4), 213-222.
- Wing, L. (1998). Autism in children and adults: A guide for the family. <https://dialnet.unirioja.es/servlet/libro?codigo=219335>

The article that is published is the exclusive responsibility of the authors and does not necessarily reflect the thoughts of the Revista Ciencia Digital.



The article remains the property of the magazine and, therefore, its partial and/or total publication in another medium must be authorized by the director of the Revista Ciencia Digital.



Indexaciones

