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Pedagogical alternative to strengthen body awareness in children with Down syndrome from Physical Education.

Alternativa pedagógica para fortalecer la conciencia corporal en estudiantes con síndrome de Down, desde la Educación Física

Alternativa pedagógica para fortalecer a consciência corporal em crianças com Síndrome de Down a través da Educação Física.

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ABSTRACT

From children, the awareness bodily allows knowing body and its handling in different situations, the people with Down syndrome need supports and accompaniment for them to realize their bodies sensations, limits, functions and the movements and what they feel



about each motor experience. The work presented had the objective of developing a pedagogical alternative for the treatment of the body awareness in students of 11 - 12 years with Down syndrome, from the classes of Physical Education, and was contextualized in The Unit Educational Specialized Treasury missionary "Don "Bosco", from the city of Zaruma, Ecuador. The research was based on a quantitative-qualitative approach where theoretical level methods such as, historical-logical and analysis-synthesis and the empirical level ones, documentary analysis, observation and survey were used to interpret the derivations obtained in each stage of the research. The results demanded a pedagogical transformation, for the methodological treatment in the Physical Education classes with these students, so a pedagogical strategy was presented to guide them about the treatment of body awareness and its impact on modifying emotional and motor responses. The recognition by the students with Down syndrome of Down of their body position in the space allowed a correct connection with the mind, which gave them greater balance and stability.

Keywords: pedagogical alternative, body awareness, Physical Education, social inclusion, Down syndrome

RESUMEN

Desde niños, la conciencia corporal permite conocer el cuerpo y su manejo en diferentes situaciones, las personas con síndrome de Down necesitan apoyos y acompañamiento para darse cuenta de las sensaciones, los límites, las funciones y los movimientos de su cuerpo y lo que sienten respecto a cada experiencia motriz. El trabajo que se presenta tuvo como objetivo elaborar una alternativa pedagógica para el tratamiento de la conciencia corporal en estudiantes de 11- 12 años con síndrome de Down, desde las clases de Educación Física, y se contextualizó en la Unidad Educativa Especializada Fisco misional "Don Bosco", de la ciudad de Zaruma, Ecuador. La investigación se sustentó en un enfoque cuantitativo- cualitativo donde se emplearon métodos del nivel teórico como el histórico-lógico y el análisis-síntesis y del nivel empírico el análisis documental, la observación y la encuesta, para interpretar las derivaciones obtenidas en cada etapa de la investigación. Los resultados



demandaron una transformación pedagógica, para el tratamiento metodológico en las clases de Educación Física con estos estudiantes, por lo que se presentó una estrategia pedagógica para orientarlos acerca del tratamiento de la conciencia corporal y su incidencia para modificar las respuestas emocionales y motoras. El reconocimiento por parte de los estudiantes con síndrome de Down de la situación de su cuerpo en el espacio permitió una correcta conexión con la mente, ello le aportó mayor equilibrio y estabilidad.

Palabras claves: alternativa pedagógica, conciencia corporal, Educación Física, inclusión social, síndrome de Down

RESUMO

Desde a infância, a consciência corporal permite-nos conhecer o corpo e a sua gestão em diferentes situações. As pessoas com síndrome de Down necessitam de apoio e acompanhamento para perceberem as sensações, limites, funções e movimentos do seu corpo e o que sentem em relação a cada experiência motora. O objetivo do trabalho apresentado foi desenvolver uma alternativa pedagógica para o tratamento da consciência corporal em alunos de 11 a 12 anos com síndrome de Down, das aulas de Educação Física, e foi contextualizado na Unidade Educacional Especializada Missionário do Fisco "Dom Bosco", da cidade de Zaruma, Equador. A pesquisa baseou-se numa abordagem quantitativa onde foram utilizados métodos no nível teórico como histórico-lógico e análise-síntese e no nível empírico, análise documental, observação e levantamento, para interpretar as derivações obtidas em cada etapa do processo. Investigação. Os resultados exigiram uma transformação pedagógica para o tratamento metodológico nas aulas de Educação Física com esses alunos, por isso foi apresentada uma estratégia pedagógica para orientá-los sobre o tratamento da consciência corporal e seu impacto na modificação das respostas emocionais e motoras. O reconhecimento pelos alunos com síndrome de Down da situação do seu corpo no espaço permitiu uma correta ligação com a mente, o que proporcionou maior equilíbrio e estabilidade.



Palabras-chave: alternativa pedagógica, consciencia corporal, Educação Física, inclusão social, Síndrome de Down

INTRODUCTION

Nowadays, education must take on challenges that respond to the processes it faces with innovative resources and methodologies. In the information and knowledge society, schools must not only focus on working on content, but must adopt a global perspective that helps students in their development process (Martínez, 2020).

From this perspective, Izarra (2023) raises the need to advance in the training and transformation of human beings, who are capable of adapting to the changes that society demands and building a better world with highly qualified professionals, with the necessary skills to socialize, interact and face the labor field successfully.

Hence, Clavijo & Bautista (2020) reason that in the educational field all citizens must be guaranteed a quality education. Educational institutions are responsible of doing real the right to an education that deploy to the maximum the potential of each person, ensuring access to education on equal terms and learning opportunities as an aspiration and a commitment of all governments and public and private institutions, and supporting the process of inclusive education at all stages.

In this sense, Hernandez et al. (2019), when analyzing the inclusion, characterize it by the predominance of studies theorists, and note the need for advance toward transformative research with and for schools.

In the Latin American context, the deficiencies that come with an inadequate implementation of the inclusive education inclusive do not focus, exclusively, in the teaching work, but also extend to the use of incoherent educational policies, as well as to the sociocultural characteristics of the environment where the teaching duties are carried out (Vega and Rivera, 2023).



The educational field of the Physical Education (PE) facilitates the personal progress that, from an inclusive education, it enhances personal resources that provide self-knowledge and the expression of one's own emotions.

From this perspective, learning in students goes through various processes, which from their growth strengthen aspects of their organism that provide them with a correct posture, recognize parts of the body, understand coordination and movement exercises and personal aspects to create an appropriate identity. Therefore, Haverroth & Rohrbacher (2020) assert that the notion of body awareness in the individual interferes with the recognition of his or her own body, his or her proper posture and the position of each part.

Down syndrome (DS) is a congenital and irreversible genetic disorder caused by a trisomy on chromosome 21 (Picos, et al., 2023). People with it present a deficiency in the development of motor skills, related to the development of body alignment and movement (Fox et al., 2019), so as a delay of the acquisition of patterns motors and of the development of atypical patterns; in them there is a lack of postural control, associated with motor coordination and sensorimotor integration (Case et al., 2020).

The regular practice of physical activity helps to improve the balance, muscle strength and endurance, as well as postural control and physical condition for the performance of daily living activities (Gámez, et al., 2021).

The research presented has its genesis when detecting the disorganized movements exhibited by students with DS who attend the Unit Educational Specialized Treasury missionary "Don "Bosco", of the city of Zaruma. These show difficulties in the body awareness, since they do not cooperate for their well-being and enjoyment of the activity that are proposed them, restrict their listening and disrespect their needs, which prevents them from reconnecting with their feelings and sensations.

Such a problem can be solved by adapting the PE curriculum used for this purpose. In this sense, the Law Organic of Education Intercultural, in the Article 2 guarantees the right of people to a quality and warm education, pertinent, adequate, contextualized, updated and



articulated throughout the educational process, in its systems, levels, sub-levels or modalities that includes permanent evaluations. Likewise, it approves the conception of the student as the center of the educational process, with flexibility and appropriateness of content, processes and methodologies that adapt to the needs and main realities. This Law promotes appropriate conditions of respect, tolerance and affection, for trigger a school climate propitious in the learning process.

In Ecuador, the PE curriculum edited in 2023, for Basic General Education (EGB), specifically in its first three sub-levels, integrates daily life and the students' immediate environment in all areas; the central objective of the educational practice is the reaching of maximum development of their capabilities and not just acquire in isolation the skills with performance criteria proposed in each of the areas, since these are an element of the curriculum that serves as an instrument to facilitate learning.

In this document, a variety of cognitive processes are developed, where students must be able to put into practice a wide repertoire of processes, such as identifying, analyzing, recognizing, associating, reflecting, reasoning, deducing, inducing, deciding, explaining and creating, among others.

However, the study carried out makes clear the flexibility that the document allows from the educational inclusion in the curricular adaptations such as educational strategies, to give specific and adapted responses to special educational needs (SEN), associated or not with disabilities. In this case, adjustments are encouraged in one or several areas of the curriculum, to those students who have learning difficulties or different conditions, which make it difficult for them or prevents access to the curriculum that you correspond because of his age.

For Corredor (2016) the issue of curricular adjustments is very common in the field of special education, he states that the starting point of any inclusive proposal has to be the recognition of the diversity, as reality and dynamics of human communities.



According to the detected SENs in students, the adjustments are applied, which guarantees to provide an education of quality in an inclusive environment. As Rojas et al. (2020) state, when talking about SEN, it is referred to any boy or girl who need support regarding any need that present whether or not related to the disability.

The adjustment of the educational offer to the characteristics and needs of each student, is carried out with the purpose of attending to the individual differences and it constitutes an educational support that is provided to those who need it. For this reason, in the this study, it was proposed to make a pedagogical alternative for the treatment of the body awareness in students of 11 - 12 years with DS, from the PE classes, in the Unit Educational Specialized missionary tax "Don Bosco", from the city of Zaruma.

MATERIALS AND METHODS

For this study, a population of 70 students with special educational needs from the EGB was considered, in the Unit Specialized Educational School "Don Bosco" in the city of Zaruma, and as an example, four students from the A-level, two of whom are in the 6th grade (one female and one male), and two male students in the 7th grade. All of them were diagnosed with moderate DS with physical and cognitive characteristics, that is, with reasoning and learning problems, physical abnormalities and motor difficulties.

According to the aim, it was classified as an applied research since the study was carried out in order to find a solution to the SEN for body consciousness of the students with SD. In that same order, the depth of the research was descriptive and was developed through of the inquiry and analysis of the reality that was studied.

Its temporality was transversal, with studies around the student with DS, in the second period of the school year. The research combined scientific methods, such as the historical-logical theoretical method that was used to understand the progress of body awareness in students with special educational needs and their educational inclusion as a studied process, its fundamental historical links, general and main laws of its functioning and development, as well as the determination of trends.



The analysis-synthesis method allowed breaking down in their parts and qualities the body awareness in students with DS and perceive the way to identify the parts of their bodies, the way in which acquired motors basic habits and the elements that characterized it, revealed the fundamental relationships to establish the background and trends that determined the behavior of said process and the theoretical foundation of the research.

In the analysis of documents, it was taken into account the report on progress in the teaching-learning process of students with special educational needs associated or not with a disability, in the context where the research is carried out, in the 2023-2024 school year. The curriculum of PE, for 6th and 7th years of EGB was considered, it was analyzed the progression matrix of integrated goals of sublevel 2.8, formulated to build habits of organization in their everyday tasks and activities and propose logical and critical reasoning.

Taking into account the criteria of Hernández & Mendoza (2018), the research presented was systematically integrated, assuming a quantitative and qualitative approach for a single study, it facilitated the joint analysis of the data obtained, and its inference based on the mixed information allowed for a better understanding of the topic studied.

Therefore, observation, surveys and methodological triangulation were used as instruments and techniques for collecting information. In this sense, direct observation was applied for the personalized acquisition of information about students with DS and the educational inclusion process in the context of the PE class. The objective and scenarios were defined and the way in which the data were recorded was determined, as well as the observation form with the dimensions, indicators and evaluative parameters that were taken into account (Table 1).



Table 1. Dimensions, indicators, parameters and evaluation criteria for observation

Dimensions	Indicators	Parameters	Evaluation Criteria		
			B	R	M
Tonic control	Imitation of movements	Walk in a straight line			
		Jump over obstacles drawn on the ground			
		Throw objects, vary distances			
Space- time structuring	Staging motor body	Relate the movements from the tonicity			
		Relate the movements from the balance			
		Relate the movements from the laterality			
		Relate the movements from the notion of the body			
Perceptual organization	Mental interpretation of objects and the outside world	Correspondence between emotions			
		Correspondence between cognitive experiences			
		Correspondence between the final interpretation of the stimulus			
		Correspondence between your perception			

In both cases, the evaluative reasoning was organized as follows:

- I
 Indicator **B:** Fluency and coordination in he motion.
 R: He performs the movement with some lack of coordination.
 M: No achieves carry out he motion.
- II
 Indicator **B:** Achieve relate of manner integrated of the tonicity, of the balance, of the laterality and of the notion of the body.
 R: Achieve relate to the less balance, laterality and in some extent the notion of the body.
 M: No achieves relate sayings items.
- III
 Indicator **B:** Manages to relate emotions with cognitive experiences, with the final interpretation of the stimulus, its perception.
 R: It relates emotions and other cognitive experiences, but does not achieve the final interpretation of the stimulus, its perception.
 M: No achieves the relations.



Table 2. Legend of the rating scales

Values	Assessment of indicators	Categories
5- 4	Good	B
3- 2	Average	R
1-0	Poor	M

It was also necessary to apply a survey to teachers that allowed checking the perception about body awareness in students with DS and the methodological treatment provided from the PE class, with a total of six questions (Table 3).

Encuesta a docentes encargados de la inclusión	
Objetivo: obtener información acerca de la percepción de los docentes sobre la conciencia corporal en niños con (SD) y el tratamiento metodológico que se le brinda desde la clase de (EF)	
Llamado de cooperación: Estimado profesor(a), estamos realizando un estudio relacionado con la conciencia corporal en escolares con Síndrome de Down durante las clases de Educación Física. Teniendo en cuenta la incidencia que usted, como profesor, tiene en la problemática abordada, se necesita de su valiosa colaboración. Se confía en su seriedad y alto sentido profesional. Gracias por la ayuda prestada.	
1.	Nivel profesional - Años de experiencia como profesor en la actividad docente. a) Titulado en Educación Física () b) Titulado en Primaria () c) Años de experiencia en atención en NEE ()
2.	¿Cómo valora usted el tratamiento de la inclusión en las clases de Educación Física? a) Buenos () b) Regular () c) Malo ()
3.	¿Conoce usted la flexibilidad que ofrece el currículo de (EF) y los beneficios que desde las clases confiere para la motivación, la coordinación y la disposición de los movimientos corporales que se pueden trabajar desde los diferentes bloques curriculares diseñados para la organización y secuenciación de los contenidos previstos para esta asignatura? Argumente.
4.	¿Cómo docente tiene conocimientos en mención a la posibilidad de las adecuaciones curriculares para la inclusión de estudiantes con (SD)? a) Currículo Nacional de Educación Física () b) Adaptaciones Curriculares o Currículo Ecológico Funcional ()
5.	¿Cómo docente tiene conocimientos sobre los elementos relacionados con la educación física inclusiva? Si () No ()
6.	¿Tienen conocimiento los docentes sobre la conciencia corporal en niños con (SD) y el tratamiento metodológico que se puede dar desde la clase de (EF)? Si () No ()

Figure 1. Survey of Physical Education teachers. Source: Own elaboration



RESULTS

The correspondence between theoretical methods articulated that inclusive PE favors the quality of life of all participants, through the development of physical, motor and spatial skills that allow them to improve their health, safety and personal autonomy; it is a space where one shares with others, limitations are respected, it allows all students to cooperate and show respect for differences, it serves as support for daily life activities and personal independence.

The documentary analysis facilitated the research into the Report on progress in the teaching-learning process of students with special educational needs associated with and not with disability. The Educational Unit's record of the students sampled in this study is unquestionable. Thus, 100% of them had mild intellectual disability, 33.3% had laterality and 16.6% had balance. However, 66.6% were correctly positioned in time and space and 33.3% had limitations in locomotion and stiffness in the lower limbs.

Although in all cases progress was reported in the records analyzed, training in functional life skills was recommended, and in only one student, impulse control training, since these are situations that can be treated in PE classes.

The curriculum of PE for GBE school level was assessed, this document is designed in six blocks, made up of skills with performance criteria that bring together a series of knowledge, procedures and attitudes considered basic to be taught, where block five takes effect for this study: construction of the body identity, where references to everyday life and the students' immediate environment are integrated into all areas.

In this order, learning must develop a variety of cognitive processes, where students must be able to put into practice a wide repertoire of processes such as identifying, analyzing, recognizing, associating, reflecting, reasoning, deducing, inducing, deciding, explaining and creating, among others, this prevents situations of learning focus only on development of some of them.



Of the blocks that are stated, the five and six encompass the construction of the body identity and the relations between corporal practices and health, and operate transversely because the knowledge in which they emphasis is considered in all the proposals. The contents contemplated in the different blocks are tightly related, so it is important for students to learn, in order to exercise full and autonomous citizenship.

It should be noted that, as in other disciplines, the contents acquire greater depth when advancing through the levels of the educational system; therefore, it must be ensured that this complexity is facilitated in accordance with the starting points, contexts and progressions; however, there is no evidence of curricular adjustments that follow up on to the needs, possibilities and opportunities that from the inclusive education is provided to students with special educational needs, with emphasis on those with DS.

The observation played an essential role for the assessment of the body awareness. A first element was that in he 100% of students with DS do not participate in an active way in PE; observation was applied in three classes and it was possible to reflect on each aspect evaluated, separately and as a whole, such as tonic control (Fig. 2).

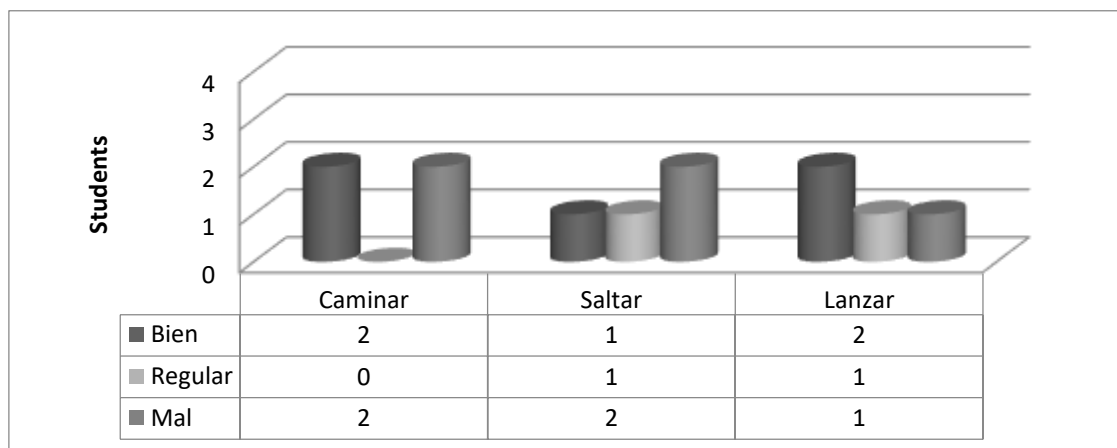


Figure 2. Behavior of tonic control indicators in students with (DS). Source: own elaboration

As shown, the imitations of the movements with the greatest difficulty were jumping and throwing, and slowness to perceive the movement and to accept the information and executed was fundamentally manifested since they were carried out with some lack of coordination and even in the case of the jump, two students failed to do it.



The same thing happened with space-time structuring. This condition emerged from motor skills, from the relationship with objects located in space, from the relative position that the body occupied, and of the multiple relations integrated of tonicity, balance, laterality and body awareness, so the indicator was rated as average.

Figure 3 shows the stimuli received, valued, integrated and interpreted that give rise to the perception and mental interpretation of information, manifested in the emotions and others cognitive experiences received, what facilitated the adjustment and modified the final interpretation of the stimulus and the perception of the task-oriented, and made it possible to detect deficiencies in the relations among the affected parts of the space-time structuring of the students assessed; this showed difficulties in laterality, lack of orientation of the hemispheres and body control, from the information that receives from outside, in this case the PE teacher guidance.

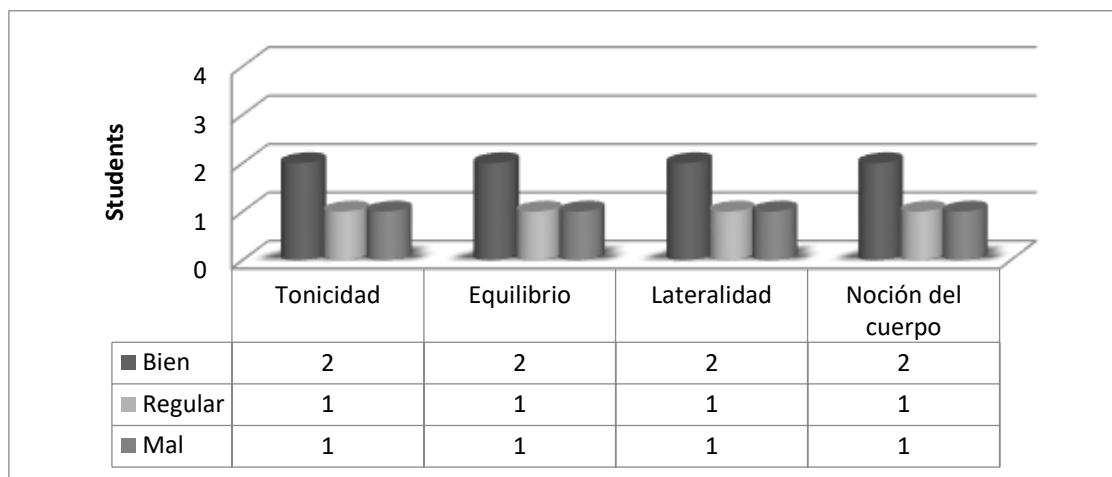


Figure 3. Performance of the Spatio-temporal structuring indicator in the (DS). Source: own elaboration

In the perceptual organization indicator, the perceptive skills were evaluated to give a meaning to sensory stimulus that is received and it was found that the students do not closely related to the PE teacher, which had an unfavorable impact. In this environment, students needed to hear and understand the perceptual skills that guided the senses, in order to be able to execute the orientations (Figure 4).



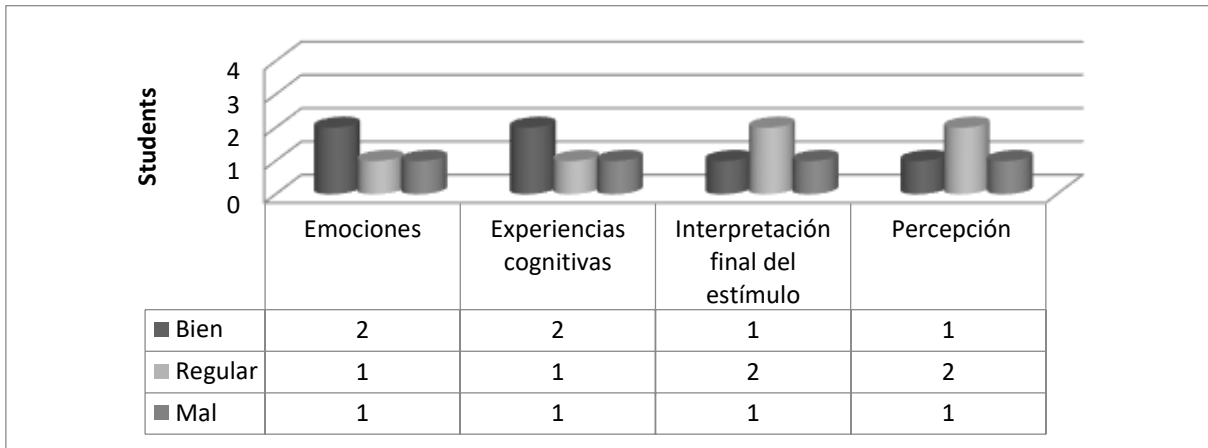


Figure 4. Assessment of the perceptual organization indicator in the (DS). Source: own elaboration

Significant results were obtained when correlating the parameters of this indicator, since the values showed a directly proportional relationship between emotions and cognitive experiences, as well as between interpretation and perception, revealing a significant correlation at the 0.01 level (2 tails); this indicated that the values of both parameters increased in a related manner, and it was corroborated when evaluating the 11 parameters established for the study that, if the perception and interpretation of the information issued by the PE teacher is favorable, the rest of the quantifications improve their values considerably (Figure 5).

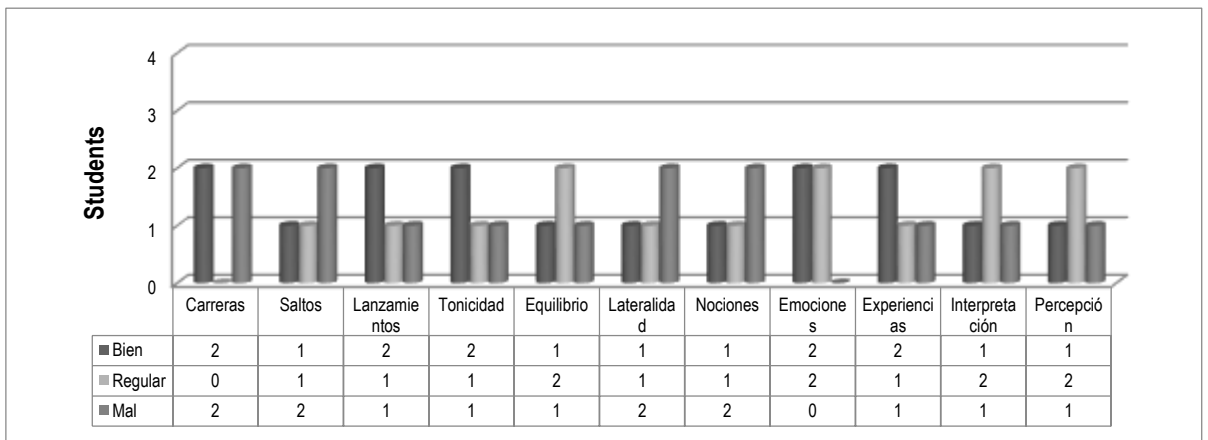


Figure 5. Quality analysis of the established parameters. Own elaboration



When comparing the results achieved in the three indicators determined for body behavior, it was clearly defined that all of them demanded an urgent pedagogical transformation, for the methodological treatment in PE classes, in students with DS (Figure 6).

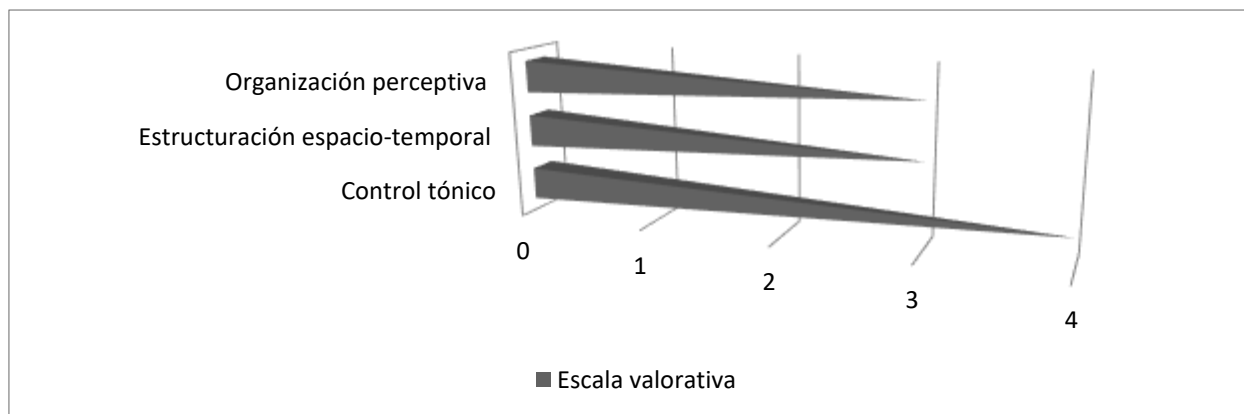


Figure 6. Characterization of bodily behavior in children (DS). Source: own elaboration

The information showed that students with DS had a slow assimilation for carrying out the programmed activities, they showed problems in attending to several orders at the same time, as well as difficulties in discriminating the general from the concrete. associate colors, forms and sizes of the objects used in PE classes.

The survey allowed to find out the perception of the three teachers about the body awareness and the methodological treatment provided, with a total of six questions that had as a starting point the characterization of the teachers, where the 100 % are graduates, with an average of 7 years of experience in the teaching activity they perform.

In the question two, criteria about from assessments to treatment of the inclusion in PE classes were taken into account, which revealed that 100% of teachers have meager knowledge to face the challenges of the inclusion of students with DS, since they were not received during their academic training.

Question three was directed towards the knowledge of the flexibility offered by the PE curriculum and the benefits that are conferred from the classes for motivation, coordination



and disposition of body movements, worked on in the different curricular blocks designed for the organization and sequencing of the contents planned for this subject. Only 30% stated that they had studied this document in its entirety, while the rest consulted the objectives for the pedagogical development of the classes.

Another derivation provided in the fourth question was that 30% mentioned the possibility of curricular adjustments for the inclusion of students with DS. The results achieved revealed the lack of knowledge about the vital procedures for inclusive education at an international level and in the Ecuadorian context.

In question five, 30% referred to elements related to inclusive education, the rest expressed ignorance. The question six, regarding the body awareness in students with DS and the methodological treatment that can be given from the PE class, 100% issued criteria on the need for guiding materials to contribute to the issue in question, as they lack information and guidance.

The results achieved call for an immediate solution to the problem existing, hence, it is proposed a pedagogical alternative to the PE classes, for the attention of students with DS, with the aim of promoting body awareness, from the inclusion educational, that respond to SEN.

The pedagogical alternative, directed to the teachers were implemented in the academic period established for the year 2023, and focused in the settings of the objectives and its inclusive nature, competencies, skills and procedures for the inclusion as well as methodological recommendations. It had as objective to instruct to the teachers about of the methodological treatment in the PE class, for students with DS, and as procedures, the following were proposed:

- Conduct an objective diagnosis that states the needs, possibilities and preferences of students with DS.
- Conceive activities that can be carried out safely, based on their abilities, and feel confident in their execution.



- Explain, demonstrate and carry out the activity with them, so that they understand exactly what is demanding from them, since visual perception for understanding in these students is greater than auditory perception.
- Invite that do it, for guaranteeing trust, independence and support among them.
- Implement from the simple to complex, until that the student considers that is able to do it alone and trust yourself.
- Motivate the class, the group and the activities, as it plays an important role for the success of the task. The student should feel accompanied by he teacher and by his classmates.
- Repeat the activity until they can show some skill in doing it, it is important to entertain them so that they feel stimulated.
- Define their role within the game so that they feel stimulated and get the rest of the group to respect their role.
- Provide brief, illustrated and demonstrated rules in games.
- Use games-exercises to correct psychomotor skills, awareness bodily and he balance (marches, balances, changes of direction, and with geometric objects, among others).
- Obtain ratings of the performance of students in the classes, hence, it is recommended to use the rubric for appreciating the body awareness, established in this study.

The recommendations were in line with the objectives of the subject and the adjustments were carried out according to the goals of the degree, according to the result of the diagnosis performed.

It was important for the comprehensive development of the student with DS to establish the interdisciplinarity between PE and body expression as subjects of the academic curriculum.



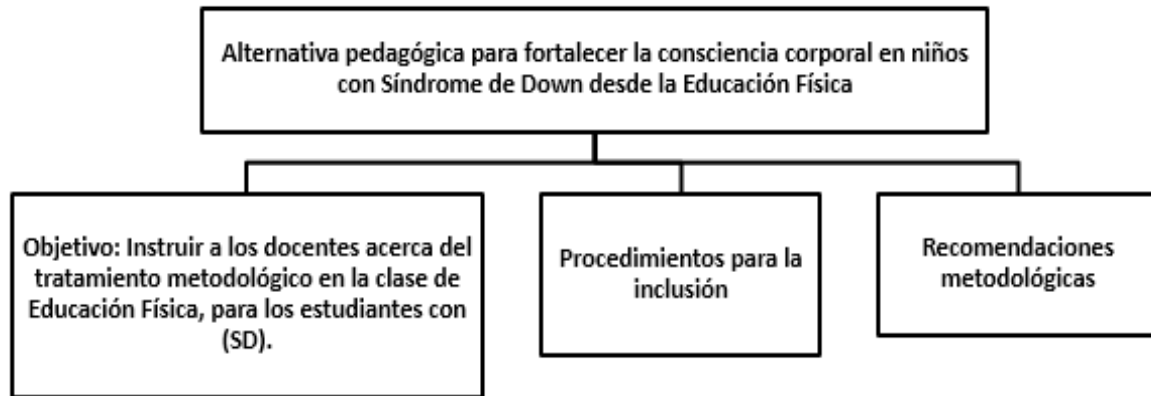


Figure 7. Graphic representation of the proposal structure. Source: own elaboration

For the theoretical assessment of the pedagogical alternative in classes of PE for providing attention to students with DS, criteria of specialists were used, and a consensus of informed opinions were obtained on all elements. Five specialists were selected based on their willingness to participate in the evaluation of the proposal, their professional prestige, their self-criticism, their analytical capacity and more than six years of experience; all of them came from the educational level studied, were graduates and had a KC knowledge coefficient between 0.90.

A guide was applied for the evaluation of the proposal by specialists, with the aim of knowing the opinions on the proposed pedagogical alternative and, at first, assessing the level of Kendall's agreement (W), whose result was $W=0.83$ with significance $p=0.0001$, revealing the acceptance of the alternative presented.

DISCUSSION

For Alonzo and Aguilar (2020), as for many interested in the theme, it is necessary to clearly define that today education for people with disabilities is recognized as a right; it aims to make PE professionals aware of the need to research and design projects that help inclusion in different physical and sports activities and to socialize the improvement of the quality of



life of people with the syndrome of Asperger. This reflection is interesting because its called to the scientific-academic guild inspire all the attention that must be taken into account regarding the educational inclusion of people with disabilities in PE.

The PE in students with DS provides a comprehensive training for coexistence, it promotes values such as teamwork, honesty, overcoming one's own physical limitations, following rules and creating habits; in this way, children socialize and improve their relationship skills, increase their motor skills, and promote their physical development and body awareness.

In this sense, Fernández (2017) believes that PE is essential in the student's development, it takes advantage of the neuronal plasticity of the first years, provides visual stimuli if the auditory ones are less well perceived, provides support and help needed for maintaining a good attitude towards learning that is clearly more complex for these students.

To think the teaching work for students with special educational needs and in special with DS generates different concerns in relationship to the ways in which the professional of the education create, organize, implement and reflect their teaching work (Picos, et al., 2023). Among the theoretical references valued in this study, theme about of the SD is found, from different areas, but always it is recognized the role of physical activity to stimulate processes in this disability.

Such is the case of Naula and Jarrín (2021) who revealed that the application of techniques ludomotor in children with DS at early age contributes significantly to motor development, for which the role played by health personnel in early intervention is also important. Something similar occurs with recreational activities, these can enhance various variables for teaching various elements in children with DS that improve their quality of life, through the scientific application of appropriate physical stimuli adapted to the context (Véliz and Mateo, 2022) .

Paredes et al., (2024) address the diversity of students with DS within the PE class and formulate a pedagogical proposal for the development of the teaching-learning process and



inclusion in this context, considering the analysis of perception variables (knowledge and skills), practices and methodologies and the perception of movements, distances, objects and interactions that occur in the body and its environment.

CONCLUSIONS

In the research, results achieved in the current state of body awareness in students with DS and its inclusion in PE classes were highlighted and the need for treatment of the subject was declared in the saying context, so it is proposed a pedagogical alternative in the class of PE and teachers were guided about the treatment of body awareness and its impact, to modify emotional and motor responses in these students, from the recognition of the position of their body in space and the correct connection with the mind, for greater balance and stability.

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The author declares that there are no conflicts of interest.

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The author is responsible for writing the work and analyzing the documents.



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