Evidence of the application of didactics in the classrooms, after training on fine psychomotricity provided to early childhood education teachers

Evidencia de la didáctica como resultado de un programa de formación docente en psicomotricidad fina

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Abstract: This article is the result of the convergence of three scientific visions, didactics, teacher training, and psychomotricity after analyzing the outcomes of the Participatory Action Research (PAR) carried out in the state of Carabobo-Venezuela, by using a sample formed by 12 teachers who designed 16 fine psychomotricity activities for various levels of early childhood education after being trained on this particular area. The design of these activities includes cognitive, sensory, and motor aspects, as well as the usage of stimulating and sensitive materials. Also, it attends children’s needs taking into consideration the syllabus and projects of each classroom. Teacher training not only provides learning to the teacher but also provides a sense of reflection and empathy with the global processes that favor the integral development of children being the didactic of training the trainers fundamental axis to be transmitted and evidenced in the present work. The 16 activities were validated through the expert judgment technique. The experts specialized in the early childhood education field have different performance profiles and years of experience. The reliability of expert judgment was determined by the degree of agreement between them applying the Kendall rank correlation coefficient.

Key words: Didactics, teacher training, psychomotricity, early childhood education.

Introduction

Early childhood education understood as the first stage of the educational system being crucial in the infant development, attending various facets that are part of child development as mentioned by Cardemil & Román (2014) which are self-knowledge, the natural environment, body development through sensoriality and coordination, affective, creative and socialization aspects. Early Childhood Education shares general principles with Psychomotor Education: the learning must be meaningful, providing information related to the student’s previous knowledge; it should be globalizer and multimodal by selecting various contents, objectives and methodologies.

The learning must be individualized, respecting the pace, needs, and interests of each student. It should use an active and playful methodology that relates physical and mental activity with the constructive through the action, the experimentation and above all the game (León 2012; Prieto et al., 2021; Tobias, 2007). One of the most important aspects that is evident in the development of the infant in the infant stage is its ability to manifest with facts the maturity of its neurological system, through psychomotor skills, evidencing a close relationship between the brain and psychomotor skills.
as stated by Segura et al. (2017) in their study; aspects such as laterality, observation capacity, spatial notion, the beginning of graphism are aspects that require countless neurological resources implemented by the learner and of course enhanced by the figure of the teacher, through fine psychomotor activities that require stimulation from neurodidactics as proposed by Luria in his model of imput, processing and out watching the environment using the words of Jiménez (2007). The stimulation of fine psychomotor skills is based on the selection of each of the materials to be used and the level of awareness of the sensory, cognitive, motor, experimentation and meaning processes implicit in each of the activities, with sensory inputs and experimentation through the senses being crucial in this process. Fine psychomotor skills are a transversal axis in the activities of the infant stage, the path to be followed to achieve graphism, being this according to Córdoba (2013) «movements that require greater precision. Generally, they are movements that require hand-eye coordination» (p.64), adding that they are movements that can be coordinated or uncoordinated that are performed with the distal part of the body, in the case of the upper limbs with the hands and fingers, such movements present an evolution until reaching precision, strength, pressure, and coordination, where not only the aspect of the corporeality is involved as the movement of muscles and bone structures, but it involves a neurological work where actions are involved as mentioned by the referenced author, hand-eye coordination, perception, attention and concentration, sensation, among others.

That is why it is necessary to adequately train educators using a flexible, personal and evolutionary process (Marcelo, 2014) as well as their constant update in didactic aspects necessary to carry out activities that meet the characteristics mentioned in the paragraphs above and following what is established in the initial education syllabus in a global way and based on the knowledge and implementation of innovative and inclusive teaching methodologies for the diversity of teaching and learning styles that reduce the possible obstacles presented in the classroom (Fernández & Espada, 2017). In tune with this context, pedagogical principles, supported by foundational theories of early childhood education (Peralta, 2008), and recent contributions related to development and learning (Berlinski & Schady, 2015; Heckman, 2011), have directly guided decision-making and pedagogical practices in various contexts of initial education, in addition to being considered in teacher training as a valid reference for a pedagogy based on a rights-based approach. That is why it is of vital importance to avoid models of passive practices where children perform activities with no real meaning, activities that are commonly performed only on cards, and static materials that do not give infant students the possibility to feel, process and interpret the information through the materials, this proposal is of crucial importance not only for teachers, This proposal is crucially important not only for the teachers, but also for the children at this stage, since having a level of awareness of the planning that responds to the interests and needs of the classroom population, using aspects of their real context, and internalizing the aspects to be worked on in each of the activities will make a relevant difference in the results and the fulfillment of the objectives at this stage.

Children during early childhood education find in their body and their movements the way to come into direct contact with the reality that surrounds them, building the first knowledge about the world in which they are growing and developing. Studies like the one conducted by the Suggate et al. (2019) mention how the activities performed during the Early Childhood Education related to the development of fine psychomotor have an essential influence, not only in spatial cognitive skills but in language and reading.

In this study it is corroborated how graphomotor stimulation with scriptural elements has an impact on the academic development during Early Childhood Education using the motor processes; another study that corroborates said information is the one by authors Martzog & Suggate (2019). If it is taken into account that children in the Early Childhood stage internalize through pleasure and the senses, we can support the didactic and pedagogical proposal of this research with significant and experimental activities to prepare the children in the acquisition of skills during the first stage of the education.

The continuous exploration of the body as a source of sensations, the search for the options of action, and functions that the body fulfills, will develop the necessary experiences that will support the cognitive processing of children. Likewise, affective interactions linked to motor activities and the play will be the basis for the children’s emotional growth. As mentioned by Rodríguez et al. (2017), on the conclusions of their study, it is highlighted that training of motor skills in a globalized way benefits, without doubt, the social and emotional development of the children, including their communicative, cognitive, and motor aspects.
The progress of motor skills in the early childhood education stage must have a comprehensive, globalizing, and interdisciplinary vision since the fact of developing motor skills through several areas is justified in the foundation of globality and interdependence, both of them crucial in the advancement of this stage (Vaca, 1996; Ruiz, 2003). The relationship between motor performance and cognitive functioning is increasingly recognized. The result of the study conducted by Houwen et al., in 2019, shows that the intra and the inter-individual variability characterize skills that are especially important when evaluating children in preschool age. This conclusion addresses the fact that activities related to fine motor skills must respond to the interests of the students, which at this crucial stage are experimentation, sensory stimulation, and the pleasure of acting; the activities proposed in this research meet said interests after a process of training and updating by teachers.

Based on the above, the intention is to influence all areas of children's behavior through the interrelation with the motor, sensory, and cognitive aspects included in the contents by contributing to the improvement of their comprehensive and global education as a human being. Said aspects are corroborated in the study by De Lourdes Cró & Pinho (2016), where affectivity and emotionality are worked through the psychomotricity oriented to the acquisition of a series of skills through experimentation and meaning in the activities performed. McClelland & Cameron, in 2019, classified these types of activities as pre-academic tasks, relating them positively to literacy and mathematics results.

The activities designed by the teachers aim to demonstrate the structure and intentionality of the fine psychomotor activities that entail the benefit of optimization of cognitive development in children, converging in these, motor processes such as: observation capacity, laterality, concept of spatial notion, pincer grasp, grip, pressure, among others, with superior intellectual processes and executive functions, such as: attention and concentration, reasoning, observation capacity, analysis, deduction, among others, being corroborated by the study carried out by Cameron et al., in 2012. Said study yielded that stimulation of executive functions and fine motor skills predicted a higher achievement in several subtests when the children of the referred study started the kindergarten. That study is closely related to the fine motor activities approach of the current study and the development of affectivity and social skills through playfulness and the sensation of pleasure generated by the use of sensitive materials, which of course, merit didactic actions by part of the teachers.

Currently, early learning theories state that space and materials by themselves, provoke motivation in children, becoming mobile or static objects significant stimuli capable of exciting and directing specifically child behavior (Medrano, 1994).

After the training process of the teachers that participated in this research, the importance of using sensitive materials with tactile, gustatory, and olfactory characteristics as activators of a pleasant experience in children was evident; learning by the pleasure of acting and thinking, and thus reaching their maximum cognitive potential. The study conducted by Oberer et al. (2017) confirms that gross and fine motor skills are significantly correlated with the executive functions.

The activities designed by the teachers can be done inside and outside the classroom. The sensitive inputs are of vital importance in the promotion of the cognitive aspect; therefore, the teachers who participated in the research used their didactic competencies to achieve maximum participation and optimal development of the said activities. It is then validated that the educational field becomes the first promoter of strategic, technical, and material applications used in the teaching and learning processes that constitute the actions that teachers apply promoting, developing, and promoting the construction of the notion and knowledge. Another study argues that the involvement of pedagogical processes in fine motor skills has an impact on attention, fine motor skills and general knowledge, which in turn are predictors of skills in mathematics, reading and science in primary education (Grissmer et al., 2010).

When the teaching includes fine psychomotricity elements in the curriculum of early childhood education, it accompanies the child development of all his cognitive or instrumental, affective, and relational aspects. The school contributes to searching well-being in childhood, by prioritizing the design and the start of an exciting personal project in that child’s life, taking into consideration further options and stipulations of the near future. From here, it lies the commitment of early childhood education by favoring the beginning of the journey’s population with the best conditions, basing pedagogical praxis on responding to the population’s concerns with a vast and assorted repertoire of experiences where they can learn more and more and with greater pleasure.

The didactic proposal of this research, after analysis and reflection by the teachers, are the significant and
experimental activities with a variety of materials that benefit the child, using comprehensive, interactive, and dynamic stimulations with their environment. Mérida-Serrano et al., (2018), confirm the usage of above stimulations stating on their research that exploration, interaction, discovery, diversification, and adequate use of time and space, in activities performed within a teaching framework by projects, would be more meaningful and enjoyable for children, enabling close, everyday and family learning contexts in the construction of their knowledge.

The primary condition for including such characteristics in teaching is to allow the teachers to determine their needs and requirements in aspects that favor psychomotor programs, as presented in this research. Another study that supports the role of the teacher in promoting didactics is the presented by the author Kocer (2012), his work through qualitative research aims to strengthen fine motor skills. It is the objective of this investigation to evaluate the creative and didactic processes of a group of early childhood teachers after the fine psychomotor training process using as training materials experimentation with sensitive elements, video projections, a bibliographic dossier, practical activities, design of new plans, conversations, conceptual and mental maps and, analysis and synthesis of theoretical material. The method selected for the study is the participatory action research (PAR) endorsed by the following authors Anderson (2009), Greenwood et al. (2000), Latorre (2013), Lewin et al. (1946), Martínez (2007) and Sandín (2003), allowing the teachers to build their knowledge, analyzing from prior knowledge to a new practice enriched through their processes, following the needs of the students and the demand of the center at the same time that it values the understanding of professional work as an attitude of research to improve practice, analyzing group situations and daily experiences, and thus contributing to problem solving (Molina, 2002).

Assigning to each activity values from 1 to 5 and, after the application of the expert judgment technique Cabero (2013) the result are the 16 activities with fine psychomotoric with an average rating between 4.4 and 4.7; being the rates of the learning activities that promote very high levels of stimulation between 4.4 and 4.6. The teachers managed to incorporate innovative didactic activities with a high degree of sensory, cognitive, creative, motor and, experimental stimulation with planning related to the syllabus and the classroom project, discriminating each immersed process. Teacher training offers the possibility of guiding the practice in the knowledge of oneself, the environment for teaching, the subject, as well as the development of the syllabus and instructions, contributing with the enrichment of educational processes immersed in the activities providing the student with meaningful and constructivist learning which not only responds to an objective or dimension of the curriculum but also becomes a comprehensive and global stimulation for the child, responding correctly with the needs of an active, dynamic and multimodal educational model including the bases of psychomotoricity and that also leads to think of a didactics of psychomotor skills based on an empathetic attitude (Toro, 2006), receptive and conducive to interactions without limiting the autonomous action of children (Álvarez, 2011), in favor of a personal formation, that allows a different view of the child’s own body image and motor expression, and that also merits the daily incorporation of learning experiences contrary to the conventional practices that have been in force in the existential and school memory of scarce valuation of their needs and interests (Rodríguez & Fuensanta, 2018).

| Topics covered in the training sessions | Sources used in the training | Evidence of sources used |
|----------------------------------------|-----------------------------|-------------------------|
| Evolutionary Development of children between 0 and 6 years-old. | Projection of videos | |
| Psychomotor behaviors of children between 0 and 6 years-old. | Bibliographic Dossier | |
| Theories of the evolutionary development of children between 0 and 6 years-old. | Videos | |
| Theories of the development of psychomotor behaviors. Dra. Carmen Viloria. | Practical activities | |
| Theories of meaningful and experimental learning | Design of new plans | |
| Multisensory stimulation. | Conversations | |
| Review of the National Bolivarian syllabus for early childhood education. | Conceptual and mental maps | |
| Cognitive aspects immersed in fine motor skills activities. | Analysis and synthesis of theoretical material | |
Materials and Methods

The method used for the development of this work is the participatory action research endorsed by the following authors Anderson (2009), Greenwood et al. (2000), Latorre (2013), Lewin et al. (1946), Martínez (2007) and Sandín (2003), that evaluated the center in a participatory way, allowing a conscious, reflective and critical process of the teachers being the protagonists of their change in practice. This type of research transforms and changes the physical, social, and cultural reality of a center, turning teachers into actors in the construction of their knowledge, discovering changes in their pedagogical practice. The training period was carried out for (15) days, in (6) sessions.

Participants

The study carried out at a private early childhood education center in Venezuela. It has a competitive staff in early education with professionals who are pre-school teachers, psychopedagogues, and professionals from other areas with a teaching component; with many years in the institution.

With respect to the educational and political context that schools in Venezuela are going through, although private schools in Venezuela are autonomous, they go through a series of transformations in terms of their pedagogical curricula, lacking stability to meet all the requirements established by educational policies, which are sometimes improvised to comply with government plans. In 2007, a reform was submitted to a national referendum under a popular consultation; however, it was rejected in the referendum. As a result, months later the president implemented a change in the curriculum system through an enabling law. However, this created confusion in the institution between carrying out programs that benefit children and take into account staff training or complying with established educational policies. Psychomotor skills is one of the areas eliminated in the new curriculum design. In the reform, the initial teacher must handle all learning areas and specialties: computer science, foreign language, special education and physical education. With respect to the educational levels taught, there are three equidistant, but individual structures in the same area, with the levels of Initial Education, Basic Education and High School. Ten early education teachers were part of this study, who are regular classroom teachers with training in early childhood education and psychopedagogy, and two physical education teachers who worked as teachers in the psychomotority room. Permission was obtained from the center’s management, as well as the consent of the participants to voluntarily participate in the training sessions and in the observation sessions.

Tools

In order to know the content validity of the activities prepared by the teachers, expert judgment was used as an evaluation procedure. «The judgment of experts is defined as the informed opinion of people with a background in the subject, who are recognized by others as qualified experts in this, and who can give information, evidence, judgments, and evaluations» (Escobar-Pérez & Cuervo-Martínez, 2008, p.29). The use of expert judgment is a method that allowed to assess if the activities transmitted the information for which they were created.

The experts must be related to early childhood education and fine psychomotority skills to evaluate the activities subject of their judgment properly. They also should have relevant professional experience and expertise Barroso & Cabero (2013). The selection of ten experts is a reliable estimate for the validity of the content of the designed activities Hyrkäs et al. (2003).

Procedure

The psychomotority training sessions took place over two weeks through theoretical and practical seminars. They were carried out after a process of observation and evaluation of the planned activities in the area of fine and gross psychomotority of 12 classrooms, ranging from level 0 to 3 of infant education. Next, the scheme of those activities was modified, taking into account essential aspects of significant and experimental psychomotority through 4 objectives: (1) experimentation, (2) motor, (3) sensory, and (4) intellectual. Subsequently and during the following two months, a follow-up, advisory, and accompaniment tasks were carried out on such activities jointly with the teachers. Finally, experiential psychomotority workshops were implemented in the school once a month, where teachers, including those from the psychomotority room and students, actively participated in activities with sensitive material.

Analysis of data

The experts evaluated the activities proposed by the teachers taking into account that they were appropriate for this study, verifying the promotion of learning in a meaningful, experimental, creative, and
sensory way for the student. The evaluation scored each activity with values between 1 and 5, where one corresponds to the lowest level and five to the highest level of stimulation. The analyzes carried out with the SPSS program show that the experts believe that the activities proposed by the teachers promote very high levels of stimulation since the range of scores obtained is between 4.4 and 4.6. To select the experts, their academic background and experience were taken into consideration. Hyrkäs et al. (2002) state that ten experts would provide a reliable estimate of the content validity of an instrument (cited in Escobar-Pérez & Cuervo-Martínez, 2008). In the case of the research, the following experts participated: 4 preschool teachers (with 2m 10, 5 and 34 years of experience), 2 early education teachers (with 10 and 6 years of experience), 2 specialists in special education (30 and 25 years of experience), and two evaluators who also work in educational management (30 and 7 years of experience).

Results

The design of each activity is shown below, along with the aspects highlighted by the experts (the sheets are at the end of the article).

Sheet 01: In this planning model, which was based on experimental learning, through elements that stimulated the senses, touch and sight; it can be seen that the children have a sheet of paper with a circle and a glass full of cereals of different colors and sizes, the intention in this planning was to work on spatial notions (inside-outside), classification (by shape, size and color), as well as the results of sensory experimentation and reasoning. The experts gave it an average score of 4.7, with the most highly valued aspects being sensory stimulation and creativity in its design. Reaching reasoning at an early age on the resolution and decision making through the elements.

Sheet 02: The planning shows how the concrete elements correlate with the abstraction of the drawing and symbolic thought through the image, aspects such as fine psychomotor skills and basic mathematical notions were presented in the planning. The children had to decide, through a drawing showing a hen with eggs, whether to color the eggs or, on the contrary, to experiment with the boiled eggs laid out on the table, trying to find a solution to integrate the element corresponding to the image and incorporate it into the

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drawing; some of them were able to find a solution by removing the shell and incorporating it into the image. The aspects most highly valued by the experts were experimentation and sensory stimulation (Mean = 4.6).

Sheet 03: The teacher bases this planning not only on motor aspects, but also on cognitive, experimental and pre-calculation aspects, focusing on the mixture of elements that lead the child to experimentation and socialisation, seeking resolution in each of the stations; that lead the child not only to the pleasure of acting but also to think with the elements and how they can be classified, matched and serialised. The experts rated the level of cognitive stimulation, sensory stimulation, adaptation to development and creativity as the most valued aspects with an average of 4.8.

| Sheet 01 | ACTIVITY: CLASSIFICATION OF ELEMENTS |
|-----------|--------------------------------------|
| **Materials** | Painted egg cartons, painted bottle lids, colored plastic bottles, colored pencils and clothespins. |
| **Description of the activity** | Using the clothing, the children have to put the lid on the egg cartons according to the corresponding color, then screw the lid onto the plastic bottles of the same color. Place the colored pencils inside the plastic bottles of the same color. Group colored pencils, bottle lids, egg cartons, and plastic bottles by color. |
| **Instruction** | Mix elements and colors. |
| **Motor objectives intended to work in the activity** | Spatial notion: inside and outside. |
| **Intellectual Objectives intended to work in the activity** | Observation ability. |

Sheet 04: In this planning, the teacher designed it on the basis of sensory experimentation and the search for reasoning on the part of the infant, transferring not only motor aspects, but also mathematical aspects, such as the correspondence term to term, in which the children were presented with a sheet of paper with a drawing of a banana, the element banana was placed on the table, and the children had to choose and select which elements they wanted to work with and discover how to match the visual element with the concrete element. As a result, the children experimented, worked with the banana peel, mashed it and matched the terms. The aspects most valued by the experts are cognitive and sensory stimulation (Mean = 4.7).

Sheet 05: In the activity World of plants, plant and fruit elements are arranged on a surface in the form of contextual structures such as buildings, houses, sun, clouds, trees, etc. The first year infants move into the space, the teacher shows the space with the intention that the children experiment, carry out a process of observation, discrimination and sensory stimulation, through this planning the children discovered the various elements, found the similarities of the landscapes giving a meaning to the same elements, and discovering what...
each element corresponded to through the senses. The most highly valued by the experts was the sensory stimulation with a mean of 4.8.

Sheet 06: In the planning model of colouring with vegetables, the teacher designs an activity in which sensory stimulation, fine psychomotor skills, substitution of a writing element and reasoning are highlighted. The children had to colour with the vegetable elements in the case of the carrot they had carrot puree and carrot sticks, and in the case of the tomato, the whole vegetable, and they had to discover how they wanted to colour it, with the tomato colouring being the most experimental. The most valued aspects were the level of cognitive stimulation and development with a mean of 4.8.

The aspects with high scores were creativity and sensory stimulation (Average = 4.6)

| Sheet 06 | ACTIVITY: COLOURING WITH VEGETABLES |
|----------|-------------------------------------|
| Developed by: M. G. | |
| Age: from 2 to 3 years-old | |
| **Materials** | Carrots, tomatoes, plastic bags to cover the floor, protection and A0 white sheets. |
| **Description of the activity** | Fill the shapes drawn on the paper with the replacement of the regular painting tool and verify their experimentations. |
| **Instruction** | Paint the drawing with the tomato and the carrot. |
| **Experimentation phase** | Identify the phases of experimentation that present the creative pedagogical activity by coloring, identifying the elements, and touching the elements. |
| **Sensitive factors integrated into the activity** | Visual: colors, dimensionality, and shape. 
Touch: Surface, shape, dimension, and temperature. 
Taste: Flavor. 
Smell: Smell. |
| **Motor objectives to work in the activity** | Spacial motion. 
Pincer grasp - Manual dexterity. 
Dimensionality. 
Pressure. 
Grip. |
| **Intellectual Objectives to work in the activity** | Observation ability. 
Attention and concentration. 
Visual discrimination. 
Tactile discrimination. 
Significant learning. 
One-to-One correspondence. 
Selection. 
Decision making. 
Sensations. |

Sheet 07: In the planning model of decorating the fish tank, the teacher develops a planning, with the resource of the card, but with innovative elements, through eye-catching concrete materials, which allow visual stimulation, and work a little more rigorous in terms of the manipulation of the elements through fine psychomotor skills. The aspects most highlighted by the experts were creativity and sensory stimulation with an average of 4.6.

The aspects with high scores were creativity and sensory stimulation (Average = 4.8)

| Sheet 07 | ACTIVITY: DECORATING THE FISHBOWL |
|----------|----------------------------------|
| Developed by: L.P | |
| Age: from 3 to 5 years-old | |
| **Materials** | Sequins, the activity book, paintbrush, markers, jelly and colored pencils. |
| **Description of the activity** | Select from the activity book the image, corresponding to a fishbowl with fishes. Fill it with eye-catching and motivational elements like the color and the shine of the sequins. |
| **Instruction** | Color the fishbowl. |
| **Experimentation phase** | Observe children’s choices when selecting various elements presented, such as colors, sequins, jelly, and textures that simulate algae when doing the activity. |
| **Sensitive factors integrated into the activity** | Visual colors and shape. 
Auditory: The activity was accompanied with sounds from the sea. |
| **Motor objectives to work in the activity** | Spatial motion: up, down, in, and out. 
Pincer grasp. 
Directional control. |
| **Intellectual Objectives to work in the activity** | Observation ability. 
Attention and concentration. 
Visual discrimination. 
Tactile discrimination. 
Experimentation. 
Classification by color and size. |

Sheet 08: The activity corresponding to this planning was the elaboration of a tree with disposable material, using hands, plastic bottles, among other elements, not only working on the motor aspects, but it also included an adequate adaptation to the level of functioning of the youngest children, as they not only had to paint the elements using a variety of materials, but they could select according to their manual dexterity. The most important aspect highlighted by the experts was the adaptation to the level of development with an average of 4.5.

The aspects with high scores were creativity and sensory stimulation (Average = 4.8)

| Sheet 08 | ACTIVITY: DRAWING THE TREE |
|----------|-----------------------------|
| Developed by: M.H. | |
| Age: from 4 to 5 years-old | |
| **Materials** | A3 white sheets, finger paints, plastic bottles, and paint brushes. |
| **Description of the activity** | Paint a tree using recycled elements associated with the figure of the tree. |
| **Instruction** | Draw a tree with flowers. |
| **Experimentation phase** | Identify which recycling element is associated with the flower. |
| **Sensitive factors integrated into the activity** | Visual: colors and shape. 
Touch: Feeling the dimension and texture of the elements. |
| **Motor objectives to work in the activity** | Spatial motion: up, down, in, and out. 
Pincer grasp. 
Directional control. 
Shape of the brush. 
Eye-hand coordination. |
| **Intellectual Objectives to work in the activity** | Observation ability. 
Attention and concentration. 
Visual discrimination. 
Tactile discrimination. 
Experimentation. 
Classification by color and size. |

Sheet 09: In the planning of the Natural World activity, the teacher worked with stereotypes of the urban world to make fillings with elements of the natu-
nal world, which allowed the children to experiment with different materials, and to be able to organise them appropriately in order to carry out the activity. The most valued aspect was the cognitive stimulation with an average of 4.9.

Sheet 10: The design of the planning of the fruit trolley, shows the design of an activity, which contemplates the elaboration of a trolley using bananas and strawberries as main materials, the children had not only to put into practice their motor skills, but also their reasoning skills to reach the organisation of the elements that will provide them with such a resolution, to create a fruit trolley. Except for the level of significance, the rest of the aspects were evaluated with a mean score of 4.7.

Sheet 11: The activity, painting with threads, seeks to work on psychomotor skills through creativity. The girls had a sheet of paper and had to use different threads with different colours to make a production; it should be noted that the manipulation of such a fine element allowed for greater effort at the level of fine tweezers. The most valued aspects were the sensory and cognitive stimulation with an average of 4.5.

Sheet 12: In the planning of the activity of collecting balls, it can be seen how the teacher works with gross and fine psychomotor skills, seeking discrimination and classification through socialised work with the children, in a large space, where perception and movement play a fundamental role. It is a simple activity but involves various sensory, motor, cognitive and emotional processes. The aspects least valued by the experts were the levels of sensory stimulation and experimentation, achieving an average of 4.5.

Sheet 13: In the planning of the activity scribbling with chocolate, motor work is evident, with a high impact on multisensory stimulation, the children had to make various figures with cocoa powder, but also deduce what the material they were working with was, experimentation through the senses to reach the conclusion has been of vital importance in the design of...
notion, fine psychomotor skills and sensory stimulation, but also made it possible to work on concepts of spatial
this activity. The experts’ evaluation gave this planning a rating of 4.7 on average, with the aspects having a high
level of development at a significant, creative and
cognitive level.

The aspects with high scores were the level of creativity, adaptation to development and, sensory stimulation (Average = 4.8).

Sheet 14: In the design of the planning of the minichef activity, the teacher developed an idea that not only aroused the motivation of the families and pupils, but also made it possible to work on concepts of spatial notion, fine psychomotor skills and sensory stimulation, based on meaningful and experimental learning. The most highly valued aspects were the level of creativity and adaptation to development and sensory stimulation with an average of 4.8.

The aspects with high scores were the level of creativity, adaptation to development and, sensory stimulation (Average = 4.8).

Sheet 15: In the planning of free colouring, we see the design of an activity that seeks sensory stimulation, creativity and fine psychomotor skills. Being able to paint on large expanses and without limits allows the children to express their skills on the surface. The most valued aspect was cognitive stimulation with an average of 4.5.

The aspects with high scores were cognitive stimulation (Average = 4.5).

Sheet 16: In the design of the sensory circuit planning, the teacher shapes a planning aimed at nursery school
children, who deserve to awaken their sensory inputs and discover each of the elements exposed in the circuit, gross motor skills, fine psychomotor skills and experimentation of the elements nourish this planning through free movement through each station. The most valued aspect was the level of significance with an average of 4.8.

| Short 18 | ACTIVITY: SENSATIONS CIRCUIT |
|----------|-----------------------------|
| Developed by: M. C. | Age: From 6 months to 1 year-old |
| Materials | Jelly, cocoa, cream, and fruit puree. |
| Description of the activity | Build a sensorimotor circuit with elements and substances that stimulate the senses, achieving the discovery of the elements by the experimentation of the children when passing through various surfaces. |
| Instruction | "Crawl on the surface." |
| Description of the activity | Observe which children enter the sensory circuit and who enjoys being there. |
| Sensitive factors integrated into the activity | - Visual: substance colors. |
| - Touch: texture and temperature of substances. |
| Motor objectives to work in the activity | - Crawling. |
| - Balance. |
| - March. |
| Intellectual Objectives to work in the activity | - Observation ability. |
| - Attention and concentration. |
| - Visual discrimination. |
| - Memory. |
| - Reasoning. |
| - Follow up instructions. |
| PHOTOGRAPHIC EVIDENCE | |

The aspect with high score was the level of significance (Average = 4.8).

After observing in detail each of the plans that are the result of the psychomotor teacher training programme. Most of the activities obtained high scores with lower values in the development of significant learning. The activities were considered creative and adapted to the classroom project, being mostly designed by the teachers or creatively adapted through their workbooks, finding the middle ground between creativity and the need to respond to the levels and aspects necessary to stimulate the group. They were rated by the experts with an average of 4.56. Regarding the level of experimentation, the experts valued the use of experimentation through the senses. The majority of the activities designed offer the child the possibility of discovering and identifying various factors, aspects that we wish to highlight in this article, since planning at the infant stage is generally aimed at fulfilling educational programmes and content through the infant curriculum, but the interesting thing about this proposal is to understand that planning should also be oriented towards responding to the needs of the class group, with transversal objectives, but focused on stimulation and attention to neurological and perceptive processes that allow the infant to learn from its capacity, from its inner world; leaving aside for a moment the slogans, the criteria, and enduring a teaching practice committed to empathy, observation and accompaniment so that the learner manages to make an effort to reason and reach conclusions through experimentation without underestimating the potential at an early age.

Discussion

In this research, when using a Participatory Action Research (PAR) methodology, the process of reflection and evaluation does not end a cycle, but rather it is in constant construction. The results are considered promising to open spaces that invite to reflect on the role that training skills should play in the new educational agenda (Hershkovitz, Merceron & Shamaly, 2019). In the process of training classroom teachers, they were able to recognize their needs within their pedagogical practice regarding the lack of information they had in the area of fine psychomotor skills. The findings obtained challenge us to review the curricular designs that guide teacher training to identify contributions that foster the development of their skills and promote the evolution of educational communities (Muñoz & Valenzuela, 2019) and that definitively contribute to the development of a teaching profile with the capacity to transform itself from its practice, to reach a closer approach to the object of learning, thus achieving to propitiate significant and current learning to face the daily life of infants throughout their life.

In the course of teacher training, a participatory constructivist design was used carrying out various practical activities considering empathy with children’s didactics. Through the activities, the teachers experienced an emotional and altering experience, through the doing and being of the child, fundamental elements to activate the reflection process of the teachers themselves, being able to incorporate changes in their practice from a more empathetic and respectful vision regarding the rhythms in the experimentation and the response time manifested through the analysis of the children’s sensations.

Investigations such as those developed by Hu et al. (2018), Ornaghi et al. (2019), and Schachter (2015) suggest the need to include in the education and continuing professional development of teachers more attention to teachers awareness of their ideas and the representation of the inner world of children, to promote an educational approach based on an emotional training style.

Another key finding in this research was the design of activities related to fine psychomotoricity where the
systematization of factors and their identification concerning the evolutionary stage and the needs of the classroom are vital in achieving comprehensive development in infants, being a consistent process with educational inspection procedures, in tune with the curriculum and classroom projects (Lerkkanen et al., 2012; Mortensen & Barnett, 2015; Wen et al., 2011).

The main strengths of the present study were:
- Educational center involvement and openness of teachers with the training, reflection, and implementation of changes based on their needs and those of their students;
- The vision of the institution, being a center that stands out for its educational innovation and its commitment to updating its teaching staff;
- As a result of this involvement, the development and design of fine motor activities that respond to a reality of the center’s child population, with planning models that expressly express the cognitive, motor, and sensory relationships involved in each activity.

Related to limitations, when this research and training process started back in 2013, it also did it the exodus of professionals in Venezuela, resulting in the replacement of members of the research by personnel, which required training to understand the genesis and development of the psychomotor program within the school.

Conclusions

After training and updating processes, the teachers designed significant fine psychomotor activities, enriched with innovative elements that support adequate sensory stimulation for children. Also, they managed their rationing and times through experimentation, with the various elements becoming observers of cognitive and social results through the resolution of conflicts present in each of the activities.

Didactics became a dynamic and transcendental process in activities related to classroom projects and the early childhood curriculum. It also turned psychomotor into a motor skill activity in favor of the comprehensive development of children in line with the established syllabus, in addition to the incorporation of innovative strategies that were assimilated by the teachers during the previous training process.

Fine motor skills is a process that leads to increased maturation in children. Through meaning and experimentation, the intellect and the corresponding cognitive processes are developed, closely related to the pleasure of the sensations stimulated with the execution of the activities proposed in this investigation.

The didactic activities were considered creative and adapted to the classroom project, being these mostly designed by the teachers or making creative adaptations through their workbooks, finding a balance between creativity and the need to respond to levels and aspects necessary to stimulate the students. The experts rated the activities with an average of 4.56.

In this investigation, certain limitations such as the change of personnel in the institution, the continuity of some advisors, and evaluation programs would allow corroborating the motor and cognitive development of the children after the application of the program in psychomotor programs.

Regarding the video projections, further researchers are invited to use the activities developed in fine psychomotor and to verify the changes in children, as well as to carry out cooperative analyses among specialists in the field of psychology, pediatrics, and neuroscience where the importance of the neuropsychological approach is established between the benefit of sensory input, cognitive processing, and response through motor expression with cognitive abilities.

In the present research we found certain limitations, such as the change of personnel in the institution and the continuity with some consultants and evaluation programs that would have allowed us to corroborate the scope with the motor and cognitive development of children after the application of the program in psychomotor skills.

As for projections, we invite future research to use the planning models in fine psychomotor skills and to be applied in the evaluation to verify the changes in children and in the planning process of teachers in other educational institutions, as well as to perform cooperative analysis between specialists in the field of psychology, pediatrics, and neuroscience where the importance of the neuropsychological approach between the benefit of sensory inputs, cognitive processing and response through motor expression with cognitive skills is established.

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