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# PSYCHOMOTRICITY AS A PEDAGOGICAL PRACTICE: EFFECTS ON PSYCHOMOTOR AND SOCIO-AFFECTIVE DEVELOPMENT IN EARLY CHILDHOOD EDUCATION

# PSICOMOTRICIDADE COMO PRÁTICA PEDAGÓGICA: EFEITOS NO DESENVOLVIMENTO PSICOMOTOR E SOCIOAFETIVO NA EDUCAÇÃO INFANTIL

# PSICOMOTRICIDAD COMO PRÁCTICA PEDAGÓGICA: EFECTOS EN EL DESARROLLO PSICOMOTOR Y SOCIOAFECTIVO EN LA EDUCACIÓN

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## ABSTRACT

This article analyses the effects of a systematic psychomotor intervention, conducted by na educator, on 5-year-old children in early childhood education. The quantitative-qualitative, descriptive and comparative study involved an Intervention Group (IG) and a Control Group (CG). The results showed that, after 12 weeks of activities, the IG showed statistically significant improvements in all psychomotor elements evaluated, including overall coordination ($p < 0.001$), body schema ($p < 0.001$), laterality ($p = 0.03$), spatial structuring ($p = 0.02$) and temporal structuring ($p = 0.05$), while the CG remained stable. Additionally, the correlation analysis in the IG revealed a positive impact on the socio-affective domain, with a strong negative correlation between affectivity and aggressiveness ($r = -0.667$; $p = 0.005$), suggesting that the intervention promoted emotional regulation and conflict reduction. It is concluded that psychomotor activity, when integrated into pedagogical planning, is an effective and essential practice for comprehensive motor and socio-affective development in Early Childhood Education.

**Keywords:** Psychomotor Skills. Psychomotor Activities. Child Development. Early Childhood Education. Pedagogical Intervention.

## RESUMO

Este artigo analisa os efeitos de uma intervenção psicomotora sistemática, conduzida por um educador, em crianças de 5 anos da Educação Infantil. O estudo, de caráter quantitativo-qualitativo, descritivo e comparativo, envolveu um Grupo de Intervenção (GI) e um Grupo Controle (GC). Os resultados demonstraram que, após 12 semanas de

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atividades, o GI apresentou melhorias estatisticamente significativas em todos os elementos psicomotores avaliados, incluindo coordenação global (p < 0,001), esquema corporal (p < 0,001), lateralidade (p = 0,03), estruturação espacial (p = 0,02) e estruturação temporal (p = 0,05), enquanto o GC permaneceu estável. Adicionalmente, a análise de correlação no GI revelou um impacto positivo no domínio socioafetivo, com forte correlação negativa entre afetividade e agressividade (r = -0,667; p = 0,005), sugerindo que a intervenção promoveu regulação emocional e redução de conflitos. Conclui-se que a atividade psicomotora, quando integrada ao planejamento pedagógico, constitui uma prática eficaz e essencial para o desenvolvimento motor e socioafetivo integral na Educação Infantil.

**Palavras-chave:** Habilidades Psicomotoras. Atividades Psicomotoras. Desenvolvimento Infantil. Educação Infantil. Intervenção Pedagógica.

**RESUMEN**

Este artículo analiza los efectos de una intervención psicomotriz sistemática, realizada por un educador, en niños de 5 años de Educación Infantil. El estudio, de enfoque cuantitativo-cualitativo, descriptivo y comparativo, incluyó un Grupo de Intervención (GI) y un Grupo Control (GC). Los resultados mostraron que, tras 12 semanas de actividades, el GI presentó mejoras estadísticamente significativas en todos los elementos psicomotores evaluados, incluyendo coordinación global (p < 0,001), esquema corporal (p < 0,001), lateralidad (p = 0,03), estructuración espacial (p = 0,02) y estructuración temporal (p = 0,05), mientras que el GC se mantuvo estable. Además, el análisis de correlación en el GI reveló un impacto positivo en el dominio socioafectivo, con una fuerte correlación negativa entre afectividad y agresividad (r = -0,667; p = 0,005), lo que sugiere que la intervención promovió la regulación emocional y la reducción de conflictos. Se concluye que la actividad psicomotriz, cuando se integra en la planificación pedagógica, constituye una práctica eficaz y esencial para el desarrollo motor y socioafectivo integral en la Educación Infantil.

**Palabras clave:** Habilidades Psicomotrices. Actividades Psicomotrices. Desarrollo Infantil. Educación Infantil. Intervención Pedagógica.

## 1 INTRODUCTION

Psychomotor skills have gained prominence in discussions about child development by recognising movements as the basic foundation of learning and the relationships that children establish with the world, in their relationship with their bodies, emotions, actions and thoughts, forming an integrated whole that supports the construction of knowledge and the maturation of motor, affective and cognitive functions[1].

This debate reinforces what Le Boulch[2] points out, attributing to the educator a particularly relevant role in everyday school life, based on monitoring children's development, leading the teacher to identify needs, recognise potential and plan interventions with intention.

According to Oliveira[3], when incorporated into planning and carried out regularly, systematised psychomotor activities contribute to increasing autonomy, strengthening socio-affective bonds and building body awareness, as well as promoting the organisation of cognitive skills that emerge from action.

In this sense, the National Common Core Curriculum (BNCC), a document that guides Brazilian education, reinforces this understanding by highlighting the body as the structuring axis of experiences in Early Childhood Education, emphasising that movement is a form of expression, communication, and interaction, directly linked to learning rights: living together, playing, participating, exploring, expressing oneself and getting to know oneself, in dialogue with the curriculum proposal, by promoting experiences that value the exploration of space, the construction of identity and the development of socio-emotional skills[4].

From a theoretical point of view, Wallon[5] draws attention to the inseparability between movement and affectivity, indicating that motor action represents one of the first forms of a child's relationship with the environment. This understanding reinforces the importance of psychomotor skills for the development of positive socio-affective attitudes, strengthening self-esteem and establishing more secure and cooperative relationships in the school environment.

Given this set of elements, the present study analysed the effects of psychomotor activities planned and conducted by a pedagogue in 5-year-old children in Early Childhood Education, considering motor and socio-affective indicators, in order to understand how systematised interventions, integrated into pedagogical planning, can impact children's body organisation, social interactions and autonomy. In addition, it aimed to highlight how psychomotor practice, combined with everyday school life, contributes to more meaningful

educational experiences and the consolidation of comprehensive development that respects the time, pace, and needs of childhood.

## 2 METHODOLOGY

This is an observational, cross-sectional study, supported by a quantitative-qualitative and descriptive approach, which was initiated after approval by the Research Ethics Committee No. 4.124.742. The study had a population of 536 (five hundred and thirty-six) children belonging to two Early Childhood Education schools in the municipality of Anápolis, prioritising children aged between five and six years old, considering that they tend to present more explicitly the skills that are more or less developed.

The sample consisted of 50 children from Infant V, all enrolled in the morning shift. The choice was intentional, observing the pedagogical routine and the specific rhythm of each class, which were divided into two groups: Control Group (CG) and Intervention Group (IG). Each group belongs to a different school unit, which enabled a systematic comparison of the effects of psychomotor assessment.

Initially, psychomotor assessments were carried out in March 2025, using the Venâncio Psychomotor Battery (BPV-2023), currently undergoing validation, extracted from the three most widely used motor batteries in Brazil. Developed based on consolidated principles of psychomotricity, the battery consists of brief tests assessing tone, balance, gross and fine coordination, body schema, laterality, spatial structuring, and temporal structuring, generating indicators that allow the identification of difficulties that impact learning. The battery also includes an assessment of the child's socio-affective aspect from the perspective of parents/guardians, consisting of 12 questions addressing rules, self-confidence, integration with people, transgression, affectivity, and aggressiveness.

For the application of the tests, appropriate conditions were observed, with a well-lit environment, free space for movement, and all necessary materials. Initially, a welcoming moment was held with the aim of conveying security and tranquillity to each child, maintaining a stable tone of voice, a careful pace in the instructions and a neutral posture, avoiding interference in performance and preserving the children's spontaneity, recording the behaviours on an individual form for each child, ensuring accuracy, consistency and quality in the psychomotor analysis.

After the assessments, only the (GI) participated in the psychomotor activities designed and applied by the teacher over 12 consecutive weeks, which included guided games and activities aimed at developing motor coordination, body schema, laterality, and spatial and temporal organisation. During this period, the control group (CG) continued with their usual educational activities, without any additional intervention related to the study.

The psychomotor activities developed over the 12 weeks were presented in advance to the teacher, who received detailed guidance on the objectives, psychomotor skills worked on, articulation with the fields of experience of the National Common Core Curriculum (BNCC) and a complete description of the sequence of activities, as well as the necessary materials and instructions for application, using the resources provided by the researcher, as well as those already available at the school.

Each psychomotor activity explored movement situations that included motor courses, balance challenges, games with hula hoops, paths guided by shapes and colours, rhythm activities with music, body imitation actions, throwing exercises, and various movements in structured circuits. The children participated collectively in all experiences, exploring different movement possibilities and expanding their motor skills while interacting with the group. The activities were selected t ly promote autonomy, creativity, and active participation, while maintaining safety, organisation, and pedagogical intentionality, as presented in the table below.

**Table 1**

*Activities developed in the interventi*

| **Name of Activity** | **Fields of Experience – Common Core Curriculum** | **Psychomotor Skill** | **Materials** | **References** |
|---|---|---|---|---|
| **Magic Hula Hoop** | The self, the other and the us, Body, gestures and movements, Spaces, times, quantities, relationships and transformations | Overall coordination, eye-body coordination, spatial organisation, dynamic balance. | Hula hoops and cones. | Book: Children's Physical Education Interrelationships Mauro Gomes and Marcos Garcia Neira |
| **Lightning Exchange** | Body, gestures and movements, The self, the other and the us, Listening, speaking, thinking and imagination | Agility, reaction speed, spatial orientation, focused attention, general coordination | Chairs/media | Learning Physical Education From preschool to 8th grade From technique applied to free movement. Maria Cristina Gonçalves Roberto Costacurta Alves |

| | | | | |
|---|---|---|---|---|
| | | | | Pinto Silvia Pessoa Teuber - 1998 |
| **Juggling Penguin** | Body, gestures and movements, The self, the other and the us; Traits, Sounds, Colours and Shapes | Dynamic balance, gross motor coordination, foot control, spatial orientation. | Hula hoops, cones, ropes or markers | Teaching sports games: from small to large sports games. Alberti, Heer/Rothentere, Ludwig. Rio de Janeiro/RJ Ao Livro Técnico S/A, 1994. |
| **Body on Stage with Emotions** | Body, gestures and movements, Traits, sounds, colours and shapes, Listening, speaking, thinking and imagination; The self, the other and the us | Static balance, overall coordination, body expression, postural control. | Sound system, music and illustrative data with body poses. | Book: Children's Physical Education Interrelationships Mauro Gomes and Marcos Garcia Neira Mattos. |
| **Champion's Jump** | Body, gestures and movements, The self, the other and the us | Gross motor coordination, jumping, dynamic balance, upper and lower limb strength, spatial organisation. | Hula hoops and ball | One Hundred and Fifty Motor Activity Proposals for Early Childhood Education (ages 3 to 6) - ARIMED-Editora 2004 |
| **Fast Chain** | Body, gestures and movements; The self, the other and the us | Overall coordination, spatial organisation, motor music cooperation, fine motor control when passing objects. | Ball or balloon, stereo and music | Proposed Activities for Education Through Movement Motor Activities for the Developing Child Jack Capon Manole Publishing House 1989 LTDA |
| **Path of Enchanted** | Body, gestures and movements; | Spatial orientation, dynamic balance, | Lar geometric shapes made of: | One Hundred and |

| | | | | |
|---|---|---|---|---|
| **Forms** | Spaces, times, quantities, relationships and transformations: | overall coordination, visual and motor perception | Cardboard, EVA foam or coloured card Adhesive tape Visual cards with the shape and its respective colour drawn on them Stereo with music | Fifty Motor Activity Proposals for Early Childhood Education (ages 3 to 6) - Tereza Godall ARIMED-Publisher 2004 |
| **Knock Down Numbers** | Body, gestures and movements; Spaces, times, quantities, relationships and transformations | Eye-hand coordination, controlled strength, throwing accuracy, spatial orientation. | PET bottles, large numbers, light balls (rubber, cloth or foam), adhesive tape, lively music. | Proposed Activities for Education Through Movement Motor Activities for Developing Children Jack Capon Manole Publishing House 1989 LTDA |
| **The Path of Colours** | Body, Gestures and Movements Lines, Sounds, Colours and Shapes | Dynamic balance, postural control, gross motor coordination, attention and focus. | Coloured adhesive tap or ordinary masking tape, rope or string, lively music (optional, to make the activity more playful). | One Hundred and Fifty Motor Activity Proposals for Ea rly Childhood Education (ages 3 to 6) - Tereza Godall ARIMED-Publisher 2004 |
| **Balance Race** | Body, gestures and movements | Static and dynamic balance, hand-eye coordination, concentration, fine motor control | Plastic spoons (one per child); Chocolate eggs (or small plastic or aluminium foil balls); Cones, ropes or ribbons for marking obstacles (optional) | One Hundred and Fifty Motor Activity Proposals for Early Childhood Education (ages 3 to 6) - Tereza Godall ARIMED-Publisher 2004 |
| **Living Mirror** | Body, gestures and movements; Listening, speaking, thinking | Overall coordination, body control, body awareness, | None specific, just space for movement. | Games and activities involving symbolic representation. One Hundred and Fifty |

| | | | | |
|---|---|---|---|---|
| | and imagination; The self, the other and the us | rhythm, attention and motor imitation. Field of Experience: | | Proposals for Motor Activities for Early Childhood Education (ages 3 to 6) - Tereza Godall ARIMED-Publisher 2004. |
| **Alternating Walk** | Body, gestures and movements; Spaces, times, quantities, relationships and transformations; Listening, speaking, thinking and imagination | Overall coordination, alternating coordination, dynamic balance, laterality, spatial orientation. | Mats, rugs or masking tape on the floor, rope, secure chairs and tables (no exposed edges), cones, hula hoops or cushions (optional),stereo with children's songs (optional). | One Hundred and Fifty Motor Activit Proposals for Early Childhood Education (ages 3 to 6) - Tereza Godall ARIMED-Publisher 2004 |

After the period of psychomotor activities applied by the teacher, in June 2025, the second Psychomotor Assessment was carried out in both groups to compare the results obtained before and after the 12 weeks of intervention. The entire process followed the same pattern adopted in the initial stage to ensure methodological consistency. After the intervention ended, the same activities were offered to the control group.

The Shapiro-Wilk test was used to verify the normality of the data. To compare the measurements, the independent *one-way* t-test was used for independent measurements, and as a *post-hoc* test, Tukey's test was applied to compare between genders and between the control and intervention groups. A paired t-test was performed to compare the two moments (pre- and post-intervention). A Spearman correlation was performed between the psychomotor elements and the socio-affective aspects with the control group and intervention group, using SPSS 23.0 *software*, adopting a significance level of p=0.05.

## 3 RESULTS

Table 1 shows the mean socio-affective aspects. There was an increase in the children's affectivity after the psychomotor sessions from 8.65 to 29.28 and a decrease in aggressiveness from 9.87 to 3.75. There was no change in the control group in the emotional aspects from the first moment before the intervention to the second assessment when the research was completed.

**Table 2**

*Average scores for socio-affective aspects*

| Variable | Pre-intervention ∑(sd) | Post-intervention ∑(sd) |
|---|---|---|
| Socio-effective | 24.46±3.40 | 29,28±5,23 |
| Affectivity | 8.65 ±3.25 | 7,18±2,46 |
| Aggressiveness | 9.87±1.51 | 3,75±2,24 |

Source: own work.

Table 2 shows the results of the comparison of pre- and post-intervention psychomotor elements of the two groups (control and intervention). The analysis of the results showed significant differences only in the experimental group. The experimental group showed significant improvements in all elements: overall coordination ($p < 0.001$), body schema ($p < 0.001$), laterality ($p = 0.03$), spatial structuring ($p = 0.02$) and temporal structuring ($p = 0.05$).

**Table 3**

Comparison of pre- and post-intervention psychomotor elements in the control and experimental groups

| **Control group** | Pre-intervention | Post-intervention | **p** |
|---|---|---|---|
| Coordination | 11,13±3,79 | 11,75±3,25 | 0,22 |
| Body schema | 9,6±3,87 | 10,38±3,46 | 0,39 |
| Laterality | 8,63±2,65 | 9,38±2,91 | 0,28 |
| Spatial structuring | 6,50±2,47 | 6,31±2,18 | 0,73 |
| Temporal Structuring | 7,56±3,11 | 8,06±2,64 | 0,21 |
| **Experimental Group** | Pre-intervention | Post-intervention | |
| Coordination | 11,75±3,55 | 13,69±2,98 | 0,00 |
| Body schema | 11,88±2,65 | 13,75±2,40 | 0,00 |
| Laterality | 8,69±2,93 | 10,56±2,44 | 0,03 |
| Spatial structuring | 8,00±2,89 | 9,25±2,97 | 0,02 |
| Temporal Structuring | 8,38±3,82 | 9,38±3,99 | 0,05 |

Source: own work.

Table 3 shows the correlation between psychomotor aspects and socio-affective aspects, highlighting the statistically significant relationships found. In the Control Group, a strong positive correlation was observed between Space and the socio-affective aspect ($r = 0.743$), indicating that better spatial organisation is associated with better socio-affective indicators, even without specific intervention. In the Intervention Group, psychomotor

intervention revealed important correlations: A moderate positive correlation between Body Scheme and the socio-affective aspect (r = 0.525), suggesting that better body awareness acquired through activities is linked to better social and emotional performance. A moderate negative correlation between Laterality and Affectivity (r = -0.516), which may indicate that children with more defined or rigid laterality may show less expression of affectivity, or that the intervention impacted affectivity in a complex way. A strong negative correlation between Affectivity and Aggressiveness (r = -0.667), demonstrating that increased affectivity is strongly associated with reduced aggressiveness after the intervention, an important result for the school environment.

**Table 4**

*Correlation of the variables studied*

| **Control Group** | r | p |
|---|---|---|
| Socio-affective space | 0,743** | 0,001 |
| **Experimental group** | | |
| Body schema X socio-affective | 0,525* | 0,037 |
| Laterality X Affectivity | -0,516* | 0,041 |
| Affectivity X Aggressiveness | -0,667** | 0,005 |

Source: own work.

## 4 DISCUSSION

The results identified in this study show that children who participated in psychomotor activities showed consistent progress in all assessed skills: gross motor coordination, body schema, laterality, spatial organisation, and temporal organisation. In the control group, on the other hand, performance remained stable between assessments. These findings reinforce the effectiveness of systematic psychomotor intervention, conducted by an educator, as a factor promoting motor and cognitive development in early childhood education.

The intervention not only improved motor skills but also had a positive impact on the socio-affective domain, as evidenced by the negative correlation between affectivity and aggression in the Intervention Group. This data suggests that psychomotor practice, by providing an environment of cooperation, bodily expression, and overcoming challenges, acts as a mediator in emotional regulation, promoting a reduction in impulsivity and conflicts.

The evidence produced directly dialogues with the understanding that psychomotor activity, when integrated into pedagogical planning in a continuous and intentional manner, avours the integral development of the child. This widely discussed perspective corroborates

Fonseca[1] and Le Boulch[2], highlighting that systematised bodily experiences expand learning possibilities and strengthen motor, emotional and relational aspects, which was observed in this study.

In the motor sphere, the advances identified in this study in relation to global coordination, balance, spatial-temporal organisation and body schema are similar to the propositions of Rosa Neto and Bianco[6] and Oliveira[7] , who emphasise the importance of diverse bodily experiences to consolidate psychomotor bases in early childhood and that interventions focused on movement not only expand the motor repertoire but also prevent possible delays, an aspect clearly reflected in the superior performance of the intervention group.

In contemporary studies, such as those by Souza, Silva and Silva[8], Silva Luz et al.[9], Venâncio et al.[10], Fernandes, Tolentino and Venâncio[11], affirm that well- structured psychomotor interventions produce lasting effects on motor and socio-emotional development, corroborating and strengthening the relevance of the results obtained in the present study, which showed that the regularity of psychomotor activities tends to have a particular impact on body confidence, initiative and attention, elements also identified in this study, which showed the importance of the teacher's role as the driver of the intervention process.

From a theoretical point of view, the results reinforce the understanding that psychomotor skills constitute a structuring axis of integral development, acting decisively in the articulation between body, affectivity and learning. However, in the practical field, the results indicate that the systematic inclusion of psychomotor activities, led by the educator, can enrich the Early Childhood Education curriculum and expand learning opportunities, as guided by the BNCC[4].

The effectiveness of psychomotor intervention observed in this study is strongly supported by recent literature. A systematic review conducted by Queiroz et al.[12] corroborates the conclusion that psychomotor activity acts as a vector for the integral development of children, encompassing the motor, cognitive, affective, and social spheres. The authors highlight that psychomotor practice is not limited to physical improvement, but translates into significant improvements in learning and the prevention of school difficulties. This perspective is reinforced by Mota[13], who also emphasises the essential nature of psychomotor activity for full development, highlighting the interconnection between motor skills and socio-affective competences.

The success of the intervention, applied by the teacher, underlines the importance of the role of the educator in the implementation of systematised psychomotor practices. The

integration of these activities into pedagogical planning, as suggested by Queiroz et al.[12], enhances the educational process, going beyond traditional approaches. Massa[14] complements this view by analysing how psychomotor skills, when integrated into pedagogical practices, favour motor development and, consequently, learning. The study demonstrates that teachers, when receiving guidance and using available resources, are able to promote a richer and more intentional learning environment, transforming movement into an effective pedagogical tool.

The improvement in elements such as global coordination, body schema, and spatial structuring in the Intervention Group is a crucial finding, as these skills are the basis for the development of higher cognitive functions. Siqueira[15] reinforces the direct influence of psychomotor skills on child development, arguing that mastery of the body and space is a prerequisite for the acquisition of abstract concepts and academic success. The ability to situate oneself in space and time, for example, is fundamental to the organisation of logical-mathematical thinking and literacy, validating the relevance of the results obtained in this study.

The socio-affective dimension, evidenced by the negative correlation between affectivity and aggressiveness in the GI, is one of the most relevant results. Relational psychomotricity, even when indirectly applied through group activities, contributes significantly to the quality of socio-affective relationships, as demonstrated by Batista et al.[16,17]. The playful and cooperative environment of psychomotor activities allows children to experience and regulate their emotions, reducing aggressive and impulsive behaviours and strengthening self-esteem and social interaction skills.

Finally, although the results of this study are robust and in line with the most recent literature, it is imperative that there be greater investment in longitudinal research and continuing education for teachers. Queiroz et al.[12,18] conclude that the enhancement of the educational process depends on teacher training to effectively integrate psychomotor practices. The replication of studies such as this, in different contexts and with larger samples, is essential to consolidate psychomotor skills as an indispensable component of the Early Childhood Education curriculum.

## 5 CONCLUSION

This study demonstrated the effectiveness of systematic psychomotor intervention, conducted by an educator, in the integral development of 5-year-old children in Early Childhood Education. The quantitative results showed significant improvements in all psychomotor elements evaluated (global coordination, body schema, laterality, spatial and

temporal structuring) in the Intervention Group, in contrast to the stability of the Control Group. Additionally, the correlation analysis revealed a positive impact on the socio-affective domain, notably due to the strong association between increased affectivity and reduced aggression. These findings reinforce the premise that movement is a fundamental pillar for body organisation and emotional regulation in early childhood.

It is concluded that the inclusion of psychomotor activity as an intentional and continuous pedagogical practice is indispensable for enhancing motor, cognitive, and socio-affective development, preparing children more fully for the challenges of school learning. We suggest replicating this intervention model and conducting longitudinal studies to monitor the long-term effects on academic performance.

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