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Impact of Motor Storytelling on Psychomotor Development in Children Aged 3 to 4 Years

Impacto del cuento motor en el desarrollo psicomotor en niños de 3 a 4 años

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ABSTRACT

The objective of this study was to analyze the influence of motor stories on the development of psychomotor skills in 3- to 4-year-old children at the Miguel Riofrío Elementary School. A quantitative approach was used, with a descriptive scope and a quasi-experimental design, employing inductive-deductive and analytical-synthetic methods. To assess psychomotor profile, the Preschool Psychomotor Assessment Scale (EPP) was administered to twenty-three children. The initial assessment showed that 74% had a low level, 22% a normal level, and 4% a good level, with greater difficulties in balance, body schema, and coordination of legs, arms, and hands. Based on these findings, the “Movement with Imagination” activity guide—based on motor storytelling—was designed and implemented. The final assessment revealed significant improvements: 17% at a good level, 70% at a normal level, and 13% at a low level. It is concluded that motor storytelling constitutes an effective teaching strategy that promotes children’s psychomotor development by integrating movement and storytelling in a playful, active, and meaningful way.

Descriptors: developmental psychology; body expression; early childhood education. (Source: UNESCO Thesaurus).

RESUMEN

La investigación tuvo como objetivo analizar la influencia del cuento motor en el desarrollo de la psicomotricidad en niños de 3 a 4 años de la Escuela de Educación Básica Miguel Riofrío. Se empleó un enfoque cuantitativo, alcance descriptivo y diseño cuasi experimental, con métodos inductivo-deductivo y analítico-sintético. Para evaluar el perfil psicomotor se aplicó la Escala de Evaluación de la Psicomotricidad en nivel Preescolar (EPP) a veintitrés niños. El diagnóstico inicial mostró que el 74 % presentaba un nivel bajo, el 22 % normal y el 4 % bueno, con mayores dificultades en equilibrio, esquema corporal y coordinación de piernas, brazos y manos. A partir de ello se diseñó y aplicó la guía de actividades "Movimiento con Fantasía", basada en el cuento motor. El diagnóstico final evidenció mejoras significativas: 17 % nivel bueno, 70 % normal y 13 % bajo. Se concluye que el cuento motor constituye una estrategia didáctica eficaz que favorece el desarrollo psicomotor infantil al integrar movimiento y narración de forma lúdica, activa y significativa.

Descriptores: psicología del desarrollo; expresión corporal; educación de la primera infancia. (Fuente: Tesauro UNESCO).

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Research Articles

INTRODUCTION

Psychomotor development is a fundamental pillar of children's holistic development, as it integrates motor, cognitive, emotional, and social aspects, enabling them to explore and interact with their environment in an active and meaningful way; through movement, children not only strengthen their physical abilities but also construct knowledge, express emotions, and develop their body schema, coordination, and balance; At this stage of early childhood education, psychomotor stimulation is indispensable, as it lays the foundation for the acquisition of future knowledge; for this reason, it must be promoted through appropriate pedagogical strategies. In this context, the "motor story" emerges as an innovative teaching strategy that combines storytelling with motor activity, fostering playful and participatory experiences that stimulate psychomotor development in a holistic way, especially in early childhood education, where learning is consolidated through play and bodily experience; this tool allows children to actively participate in the story by demonstrating psychomotor skills.

In this regard, it is important to observe how psychomotor skills develop in the school setting; by analyzing the educational reality, we can identify difficulties that affect children's holistic development and that require the application of appropriate pedagogical strategies. For example, at the Miguel Riofrío Elementary School in the city of Loja, it has been shown that children aged 3 to 4 have difficulties in psychomotor development due to the following issues: poor coordination of arms, hands, and legs; lack of balance; and body awareness, etc. These issues prevented them from developing holistically, so a critical and analytical strategy is sought to resolve the problem.

Given this reality, there is a need to develop a pedagogical proposal that allows for the timely addressing of the difficulties identified in children's psychomotor development. In this context, the purpose of this research is to provide theoretical and scientific foundations that contribute to strengthening pedagogical practice in

early childhood education, focusing on children's psychomotor development; based on an analysis of this variable, the study seeks to address the issue in a practical way by applying the "motor story" as a teaching strategy, thereby promoting playful and meaningful learning experiences. Furthermore, the study aims to foster children's holistic development through activities that integrate movement, body expression, and imagination, enabling them to acquire age-appropriate psychomotor skills and abilities. The primary beneficiaries are children aged 3 to 4 at the Miguel Riofrio Elementary School.

Psychomotor Skills

Psychomotor development is a discipline that studies the connection and integration between mental processes and bodily movements; its earliest conceptual foundations emerged in Germany in the mid-19th century, thanks to the contributions of Wilhelm Griesinger, considered the founder of neuropsychiatry (Andreu & Romero, 2021). Building on this history, psychomotor development has evolved into a fundamental field within child development and education.

Today, psychomotor education is viewed as an essential strategy for addressing various needs in human development. According to Hernández Fernández (2023), its experiential, holistic, and personalized nature stimulates natural growth processes while fostering autonomous learning, the development of personal identity, and a positive, functional, and flexible perception of reality; all of which contribute to the individual's well-being, health, and self-determination.

Along the same lines, De-Juanas Oliva et al. (2023) describe psychomotor development as an educational and scientific field that connects physical, cognitive, emotional, and social aspects through conscious movement. From this holistic perspective, the individual is viewed as a part of a whole—the body and mind coexisting through interaction—and as a matter of both mind and body. Psychomotor development not only explains the mind and movement but actually helps improve the holistic development of the human being; through the body and

action, one has the ability to work on this and to learn, adapt, interact, and grow in various educational and social settings.

It is worth noting that psychomotor development is at the heart of childhood development, as it directly contributes to a child's growth; when approached in an integrated manner between home and school, the child feels secure and can become more independent and emotionally mature. In this process, movement and exploration of their own bodies help children learn about themselves and the world around them; through these experiences, they become more independent, with greater self-esteem and improved social skills.

In this regard, Flores and Sánchez (2024) explain that such an integrated approach not only supports harmonious development but also helps prevent future learning and behavioral difficulties. As León Reyes et al. (2024) also point out, psychomotor development in childhood is important because it is a coherent way to connect the motor, cognitive, emotional, and social aspects of child development, allowing children to discover, express, and develop knowledge through movement. Thus, it promotes physical and mental health, creativity, and concentration, and is also beneficial for communication and interaction with others.

Likewise, Monelo (2023) states that psychomotor skills are essential in the early stages of life, when neuromotor development is most sensitive and critical. In line with this, a lack of motor skills will also negatively affect physical and cognitive functioning and result in children being unable to function well in their environment, according to Correa (2021).

Consequently, psychomotor skills in early childhood education are a vital asset that children acquire through movement, which not only promotes physical control and motor coordination but also brain development (cognitive, communicative, emotional, and social), helping them explore knowledge and connect with the world around them; therefore, psychomotor education should be promoted in the early years of life.

Consequently, psychomotor learning is closely linked to child development (Basilio Panchana and Yagual Rivera, 2023): improved body awareness; better movement patterns; greater control over the body, laterality, and balance; and it fosters learning habits and social interaction. Likewise, Mamani Apaza (2023) recognizes psychomotor skills in early childhood education as an essential element for children's holistic growth. She also emphasizes that effective stimulation of psychomotor skills provides various benefits for a child's development:

Holistic motor development. It promotes coordination of both gross and fine motor skills, enhances postural control, balance, and muscle tone—elements crucial for a child's independence and effective mobility.

Cognitive stimulation. It fosters executive functions such as attention, memory, concentration, and problem-solving through tasks involving organization, sequencing, and following rules.

Emotional well-being and self-esteem. By overcoming motor challenges, children build their self-esteem. Additionally, they express and regulate their emotions through their bodies, improving their emotional health.

Social development. Group activities promote collaboration, taking turns, empathy, and social interaction skills—all essential for healthy social interaction.

Sensory stimulation and body awareness. Through touch, sight, proprioception, and balance, children develop a clear sense of their bodies and enhance their lateralization, as well as their spatial and temporal perception.

Enhancement of creativity and imagination. Psychomotor games encourage storytelling, role-playing, and symbolic exploration of the body, fostering divergent thinking and creativity.

Prevention of learning difficulties. Early practice helps prevent difficulties with coordination, attention, motor skills, or cognition, laying a solid foundation for academic learning.

Psychomotor development in early childhood education offers a variety of benefits: it promotes body control and mastery, optimizes coordination, balance, and spatial orientation, and enables children to move with greater confidence. Psychomotor activities help children increase their autonomy, improve their self-confidence, and develop the skills necessary for learning in school. For this reason, psychomotor skills are considered an essential pedagogical resource in children's education, as they contribute to harmonious development and the gradual acquisition of basic motor skills.

The laws of psychomotor development are universal principles that explain how a child's physical, neurological, and functional growth progresses. These laws are closely linked to brain function and, therefore, directly influence learning processes and the acquisition of motor skills. According to Bueno Pérez (2025), the main laws of development are as follows:

The law of directionality describes the pattern followed by physical development, which occurs in a progressive and organized manner; it is divided into two fundamental orientations that explain how children acquire control of their bodies over time. These orientations help us understand that development does not occur randomly but follows a logical sequence that moves from the most general parts to the most specific, as follows:

Cephalocaudal. Growth and motor control progress from the head toward the feet. This explains why children first gain control of head and trunk movements before mastering skills such as standing or walking.

Proximal-distal. Motor development occurs from the areas closest to the body's center of gravity toward those furthest away. In other words, children first gain control over the trunk and then over the arms, hands, and fingers.

The principle of development from flexor to extensor muscles: Children first gain control over the flexor muscles, which are responsible for actions such as grasping, holding, or bending different parts of the body. This initial mastery is

part of a maturation process of the nervous system that favors simpler, reflexive movements in the early stages of development. Subsequently, children develop control over the extensor muscles, which allow them to stretch, release, or extend body segments—a process that involves a higher level of coordination and voluntary control. This sequence explains why, initially, children can pick up objects more easily than they can release them precisely, since the action of releasing requires more complex control.

The law of general to specific states that motor development begins with global movements involving large muscle groups (gross motor skills) and then progresses toward finer, more specific movements that require precision and coordination (fine motor skills). This is due to the development of the nervous system and neuromuscular connections as the child grows and motor skills become more refined. At first, broad, undifferentiated actions predominate, and later they evolve into more controlled movements directed at specific objects; thus, running, jumping, or climbing come before buttoning, cutting, and drawing. For this to happen, it is important for a child to have visuomotor coordination and manual control.

Motor Story

According to Labhalla (2025), these are stories designed to encourage motor activity, known as “playful stories” or “stories that move,” in which children not only listen to the story but also physically act it out; every gesture, movement, or motor action thus becomes a way to interpret and bring to life the events narrated by the teacher. Similarly, Ferrer-Trenor and Valencia-Peris (2024) define it as an innovative pedagogical tool that combines storytelling and body movement as inseparable parts of the learning process; it is not limited to mere storytelling but encourages children to actively participate in the story through physical actions (such as running, jumping, moving, and imitating characters’ gestures) that are directly linked to the development of the plot and the story’s setting. Furthermore, it integrates physical actions, fostering imagination, coordination, body

expression, concentration, and teamwork. In this sense, movement stories blend play, creativity, and movement, becoming a comprehensive resource for children's motor and cognitive development (García, 2022).

Motor stories have gained prominence in the educational field due to their ability to integrate physical movement with verbal and emotional expression, making them a tool that fosters learning from a holistic perspective. As Zagalaz Sánchez (2001) points out, the first motor stories emerged in the field of physical education around the 1930s, based on so-called "gymnastic stories" or " r exercise stories," whose purpose was to accompany physical activities with a narrative that would encourage children's active participation.

Similarly, Marín (2023) notes that this development took place against the backdrop of the establishment of physical education and early childhood education as scientific and professional fields throughout the 20th century. Educators and pedagogues, such as Célestin Freinet, Decroly, and Víctor García Hoz, incorporated stories, games, and motor activities into their teaching methods during the first half of that century, recognizing that these practices were beneficial for fostering learning, motivation, creativity, and student participation. Later, in the second half of the 20th century and at the beginning of the 21st, figures such as Andrée Pochat—who introduced the term "motor story" in the 1980s—and Víctor Arufe Giráldez, who developed a pedagogical classification of motor stories, helped this approach spread and become established as a methodological tool in physical education and early childhood education.

Four main types of motor stories can be identified, distinguished by the use of materials and supporting resources. In this regard, Venegas (2020) proposes a classification into four types:

The movement story without props. It primarily fosters children's imagination and creativity, since—without props—children must use their own bodies to act out and communicate various actions or emotions; in this type of story, the teacher acts as a guide and facilitator of the expressive process, encouraging

spontaneity, exploration of space, and the development of original solutions to the challenges posed by the narrative. This type of story also fosters autonomy and the ability to make decisions during play.

Motor-based storytelling with materials. It stimulates active participation, care for and respect toward the materials, and collaboration among peers. The materials allow children to practice basic motor skills such as grasping, throwing, or coordination, while fostering creativity and collective participation. It also promotes social values such as respect for peers and for the objects used, as well as group cooperation, integrating cognitive, social, and motor skills simultaneously.

Motor-skill storytelling with musical materials. Instruments or sounds become educational resources that promote coordination, rhythm, and physical expression. Furthermore, it contributes to the development of auditory and rhythmic skills, temporal coordination, and musical sensitivity, integrating motor, cognitive, and artistic aspects into a comprehensive, playful experience.

Motor-based storytelling with alternative or recycled materials. This involves creating the resources themselves, thereby fostering environmental awareness, reuse, and creativity during the creation process; children actively participate not only in the performance of the story but also in the creation of the resources they will use, strengthening their skills in planning, cooperation, innovation, and environmental responsibility. This multidimensional approach contributes to holistic development by meaningfully integrating motor, cognitive, social, and emotional aspects.

These types of movement stories allow teachers to choose the most appropriate one based on educational objectives and the characteristics of the group. Furthermore, the varied use of materials not only enriches the movement experience but also enhances creative thinking, collaborative work, and sensitivity toward the environment—aspects that are essential for a child's holistic development.

Movement stories and psychomotor skills integrate bodily movement, promoting the development of children aged 3 to 4. Paredes Meléndez and Pérez Olortegui (2022) suggest that the use of movement stories in education promotes significant improvements in psychomotor skills, such as coordination, balance, and spatial orientation. Children become active protagonists in the story, which links cognitive understanding with motor action, stimulating creativity and imagination. The motor story adapts to each child's abilities, making it an important tool for improving the cognitive, emotional, and physical aspects of early development.

This approach—which is more of a tool for psychomotor development in the early years of life than merely storytelling—has been studied in children aged 3 to 4. The children participated in motor stories, and their impact on various aspects of psychomotor skills was assessed using observation tools and specialized scales. These studies show that when children participate in motor activities related to storytelling, they achieve significant improvements in their motor skills. This demonstrates the usefulness of this approach and how it can impact psychomotor development in early childhood (Guillén and Marcelo, 2022).

METHOD

The research was conducted using a quasi-experimental design, as the independent variable (motor storytelling) was manipulated to analyze its influence on the dependent variable (psychomotor skills); furthermore, the study had a descriptive scope, as it described the qualities, benefits, types, and characteristics related to the variable under study.

Furthermore, the research was conducted using a quantitative approach, which allowed for the objective and precise measurement of the variables under study through the collection and analysis of numerical data; this approach facilitated the obtaining of verifiable results and the systematic evaluation of the effects of the intervention to be implemented.

Regarding the methods, the inductive method was used, which allowed for the analysis of specific situations to reach general conclusions; the deductive method, on the other hand, allowed for reasoning from general to specific concepts and was employed in the interpretation of data and the formulation of final conclusions through logical reasoning.

Furthermore, the analytical-synthetic method was applied throughout the research process to understand the difficulties related to the problem, allowing for the breakdown of each of its components and the selection of the most relevant information.

As for research techniques, observation was the primary method used, allowing for the systematic and objective recording of each child's performance on psychomotor tasks.

To identify the children's psychomotor profile, the Preschool Psychomotor Assessment Scale (EPP), developed by Victoria de la Cruz and Carmen Mazaría, was used as the instrument. It is designed for children aged 3 to 6 years and consists of 40 items organized into dimensions such as locomotion, balance, upper and lower limb coordination, and body schema. The study population consisted of 80 children aged 3 to 5 years; a sample of 23 children aged 3 to 4 years was selected.

RESULTS

To illustrate the results obtained after implementing the program, a comparative table is presented to verify the progress made before and after carrying out the activity guide shown in Table 1.

Table 1. *Initial assessment of psychomotor skills in children aged 3 to 4 years.*

	Good		Normal		Low		Total	
	f	%	f	%	f	%	f	%
Locomotion	1	4 %	5	21%	17	74%	23	100%
Positions	1	4 %	5	21%	17	74%	23	100%
Balance	1	4 %	4	17%	18	78%	23	100%
Leg Coordination	2	8%	7	29%	14	61%	23	100%

Arm Coordination	2	8%	6	25%	15	65%	23	100%
Hand-eye coordination	0	0%	5	21%	18	78%	23	100%
Body image itself	1	4 %	5	21%	17	74%	23	100%
Body image in others	1	4 %	5	21%	17	74%	23	100%
Average	**1**	**4 %**	**5**	**22%**	**17**	**74%**	**23**	**100%**

Note: Data obtained from the initial assessment using the psychomotor skills evaluation scale for 3- to 4-year-olds at the Miguel Riofrío Elementary School.

Table 2. *Final psychomotor assessment of children aged 3 to 4 years.*

	Good		Normal		Low		Total	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Locomotion	7	30%	12	52%	4	17%	23	100%
Positions	7	30%	14	61%	2	9%	23	100%
Balance	4	17%	16	70%	3	13%	23	100%
Leg coordination	3	13%	18	78%	2	9%	23	100%
Arm Coordination	3	13%	16	70%	4	17%	23	100%
Hand-Eye Coordination	3	13%	17	74%	3	13%	23	100%
Body image itself	3	13%	16	70%	4	17%	23	100%
Body image in others	4	17%	16	70%	3	13%	23	100%
Average	**4**	**17%**	**16**	**70%**	**3**	**13%**	**23**	**100%**

Note: Data obtained from the final assessment using the psychomotor skills evaluation scale for children ages 3 to 4 at the Miguel Riofrío Elementary School, following the implementation of the "Movements with Imagination" guide.

According to the data in Table 1, there is evidence of significant progress in the children's psychomotor development; at the "Good" level, students increased their development from 4% recorded in the initial assessment to 17% in the final assessment. Similarly, at the "Normal" level, a considerable increase was observed, rising from 22% in the initial assessment to 70% in the final assessment. In contrast, the "Low" level showed a notable decrease, dropping from 74% to 13%, which reflects a significant reduction in motor difficulties. These results demonstrate that the implementation of the "Movements with Imagination" guide significantly strengthened psychomotor skills, contributing to improved physical coordination and mastery of basic movements in children aged 3 to 4 years.

According to Vera et al. (2024), motor stories are a highly effective pedagogical resource for psychomotor development in early childhood education because they stimulate body expression, coordination, and children's active participation

during activities. The authors note that their use promotes the strengthening of basic motor skills—both gross and fine motor skills—which directly contributes to children's holistic development.

CONCLUSIONS

The pretest identified the psychomotor profile of children aged 3 to 4 years, showing that their psychomotor development is consistent with their stage of developmental growth, although age-appropriate individual differences were observed in skills such as coordination, balance, and body control.

An activity guide titled "Movements with Imagination" was implemented, consisting of 25 activities based on motor stories, which proved to be an effective playful and pedagogical strategy for stimulating psychomotor development in children aged 3 to 4 years, promoting the strengthening of skills such as motor coordination, balance, body control, and active participation.

The post-test confirmed that the activity guide based on motor stories contributed to the strengthening of psychomotor skills in children aged 3 to 4, with evident improvements in coordination, balance, and body control.

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CONFLICT OF INTEREST

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