

**ENHANCING PSYCHOMOTRICITY IN THE PROCESS OF WRITING
DEVELOPMENT**

***REVALORIZANDO A PSICOMOTRICIDADE NO PROCESSO DE
DESENVOLVIMENTO DA ESCRITA***

***REVALORIZANDO LA PSICOMOTRICIDAD EN EL PROCESO DE DESARROLLO
DE LA ESCRITA***

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ABSTRACT: The task of teaching literacy is still a challenge for the contemporary society and the search for effective literacy practices has been frequent among all responsible for this initial level of Elementary School. The constructivist researches have contributed considerably for the comprehension of the child's reading and writing acquisition process, but it is necessary to observe that the unconditional adoption of this perspective has left aside the importance of activities developed in pre-school and that were considered as a preparatory period for literacy. This article aims to break with this unilateral thought according to which, in the literacy process, only the cognition is a basic condition, disregarding the perspective of a practice that includes psychomotor skills as an important element in this process.

KEYWORDS: Psychomotricity. Literacy process. Movement.

RESUMO: *A tarefa de alfabetizar ainda é um desafio para a sociedade contemporânea e a busca por práticas efetivas de letramento tem sido frequente entre todos os responsáveis por esse nível inicial do Ensino Fundamental. As pesquisas construtivistas têm contribuído consideravelmente para a compreensão do processo de aquisição de leitura e escrita da criança, mas é necessário observar que a adoção incondicional dessa perspectiva deixou de lado a importância das atividades desenvolvidas na pré-escola e que foram consideradas preparatórias no período de alfabetização. Este artigo tem como objetivo romper com esse pensamento unilateral segundo o qual, no processo de alfabetização, apenas a cognição é uma condição básica, desconsiderando a perspectiva de uma prática que inclui habilidades psicomotoras como elemento importante nesse processo.*

PALAVRAS-CHAVE: *Psicomotricidade. Processo de alfabetização. Movimento.*

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RESUMEN: La tarea de alfabetizar es un desafío para la sociedad actual y la búsqueda por prácticas efectivas de letramento ha sido frecuente entre las personas responsables por este nivel iniciante de la enseñanza primaria. Las investigaciones constructivistas han contribuido para el entendimiento del proceso de adquisición de lectura y escritura del niño, pero es necesario observar que la adopción de esta perspectiva dejó de lado la importancia de las actividades desarrolladas en la escuela preescolar y que fueron consideradas preparatorias en el periodo de alfabetización. Este artículo tiene por objeto romper con este pensamiento unilateral según el cual, en el proceso de alfabetización, solo la cognición es una condición básica sin tomar en cuenta la perspectiva de una práctica que incluye habilidades psicomotoras como elemento importante en este proceso.

PALABRAS CLAVE: Psicomotricidad. Proceso de alfabetización. Movimiento.

Introduction

The task of literacy is still a challenge for today's society and the search for effective methods has been a constant among all those responsible for this fundamental stage of education, be they legislators, teachers or authors of textbooks.

The very concept of literacy has changed, bringing difficulties to the pedagogical practice of educators. Research by Emília Ferreiro (1985) and Ferreiro and Teberosky (1991) on how children learn to write were fundamental for proposing new literacy practices. According to these surveys, children play an active role in learning. They build their own knowledge; hence the origin of the term constructivism.

According to Ferreiro (1985), children go through well-defined stages in the literacy process, namely: pre-syllabic, syllabic (with or without sound value), syllabic-alphabetical stage, until reaching the alphabetic level.

It is by using these internal schemes, and not simply repeating what they hear, that children interpret the teaching received.

For constructivism, nothing is more revealing of the functioning of a student's mind than his supposed "mistakes", because they show how he "reread" the learned content. What children learn does not coincide with what they have been taught.

Based on these assumptions, Emilia Ferreiro criticizes traditional literacy, for measuring the readiness of children to learn to read and write through assessments of perception (ability to discriminate sounds and signs, for example) and motricity (coordination, orientation among others).

For Ferreiro, traditional literacy gives excessive weight to an external aspect of writing (knowing how to draw letters), leaving aside its conceptual characteristics, that is, understanding the nature of writing and its organization.

For constructivists, the learning of the first letters does not occur disconnected from the content of writing as traditional methods that insist on introducing students to the reading of isolated words do, disconnected from the text, postponing this contact until they are already able to read the words isolated, although the relations they establish with the entire texts have been enriching from the start. According to Emilia Ferreiro, literacy is also a way of appropriating the social functions of writing.

Soares (2004), in the same line as Ferreiro, proposes that the process of acquiring the alphabet be concomitant with that of contact with written texts present in social practices, defending a methodology based on “*alfabetizar letrando*”⁴.

One of the main consequences of the absorption of Emilia Ferreiro's work in literacy is the refusal to use booklets. According to her, the understanding of the social function of writing should be stimulated with the use of current texts, books, stories, newspapers, magazines. For the psycholinguist, the booklets, on the contrary, offer an artificial and uninteresting universe. On the other hand, in a constructivist teaching proposal, the classroom is totally transformed, creating what is called a literacy environment.

Although constructivism is present in official guidelines for teaching literacy in Brazil, the application of its assumptions in pedagogical practice has not always been successful. This statement can be confirmed by the results of official assessments applied in our country, such as the Basic Education Assessment System (SAEB, Portuguese initials) (2017), which revealed unsatisfactory rates for all levels of Basic Education.

It is not intended to deny the importance of constructivist research and its contribution to the teaching of literacy. However, what is perceived is that the unconditional adoption of the constructivist perspective relegated to the background the importance of activities, carried out in pre-school, which were considered a preparatory period for literacy.

This article aims to break with this unilateral thinking that, in the literacy process, only cognition is a basic condition for the acquisition of writing, valuing the perspective of a driving work as an important element in this process.

⁴ Translated to English both words mean literacy, but in Portuguese they have distinct meanings, as a translation resource the words will be used in Portuguese when appearing together, otherwise both will be translated to literacy, to maintain their meanings as briefly explained here: *Alfabetizar* is a learning process in which the individual develops the competence to read and write, while *letrar (letrando)* deals with the social function of reading and writing.

Thus, we turn to Psychomotricity as the science that studies man through and in relation to his internal and external world to defend the idea that the work of motricity based on the approach of psychomotricity is an integral part of the literacy process, specifically in the development and acquisition of writing by children in early childhood education, through the integrality of actions that make up the human movement.

In Brazil, psychomotricity was guided, initially, at the time of the first world war, by the French school. In the 70's, of the last century, different authors started to define psychomotricity as a motor of relationship, by not caring about the instrumentalist technique and by taking care of the "body of a subject", progressively giving greater importance to the relationship, affectivity and the emotional.

The motor gesture can be translated as the meaning and/or the way of expressing your feeling, your emotions and your desires. It is in this context that psychomotricity, as a pedagogical practice, contributes to the integral development of the child, both physically, mentally, emotionally and socially and culturally.

This perspective is established in the speech of Le Boulch (2001, p. 89), who argues that Psychomotricity “occurs through educational actions on spontaneous movements and body attitudes of the child”⁵. This set of actions provides the child with an image of his own body, as well as his limits and potential.

Therefore, Psychomotricity can be understood as being a process of improvement in the child's psychophysical behavior, observing its psychobiological development, helping the child to reach the domain of his/her motor and sensory motor commands.

Psychomotricity, in this sense, is a term used for a conception of organized and integrated movement, in function of the experiences lived by the subject, whose action is the result of his/her individuality, language and socialization.

In childhood, psychomotricity aims to improve and maximize the child's learning potential and psychosocial adaptability. Through concrete experiences, it allows the brain to be transformed into an organ with a greater capacity to capture, integrate, store, elaborate and express information.

In this way, it presents itself as an important resource for the harmonious development of the child, because it is through movement that the child relates to the world, objects and others and through which he/she develops intelligence and pacifies their emotional states.

⁵ “se dá por meio de ações educativas de movimentos espontâneos e atitudes corporais da criança”

Highlighting the importance of psychomotricity as an important element in the literacy process and which should be addressed since early childhood education, information on legislation and curriculum guidelines for this level of education were selected to verify whether psychomotor skills are mentioned in these documents.

Legal guidelines for early childhood education

The Law of Guidelines and Bases of National Education, Law 9,394/96 (BRASIL, 1996), in its article 29, thus describes what is expected of Early Childhood Education.

Early childhood education, the first stage of basic education, aims at the integral development of children up to 5 (five) years, in its physical, psychological, intellectual and social aspects, complementing the action of the family and the community (BRASIL, 1996).⁶

This level of education is necessary from a social context that has two important aspects: the greater insertion of women in the labor market and the intensification of human development in relation to the first stages of life. This child population is divided into two age groups: children aged zero to three in daycare centers and nurseries, and children aged four to six years in preschools.

In dealing with the motor, social and affective development of these children, there must be strategies focused on a series of specific academic knowledge in Psychology, Pedagogy, Art, Physical Education, among others.

The National Curriculum Reference for Early Childhood Education (RCNEI) (BRASIL, 1998) is the main document that guides Early Childhood Education in Brazil and was written in compliance with the provisions of the Law of Guidelines and Bases of National Education (BRASIL, 1996).

This document outlines the necessary quality goals for children to have an integral development of their identities, to be able to grow as citizens whose rights to children are recognized.

It also aims to contribute so that the socializing objective of this educational stage can be realized in institutions, in environments that provide access and expansion, by children, of knowledge of social and cultural reality.

⁶ A educação infantil, primeira etapa da educação básica, tem como finalidade o desenvolvimento integral da criança de até 5 (cinco) anos, em seus aspectos físico, psicológico, intelectual e social, complementando a ação da família e da comunidade (BRASIL, 1996).

RCNEI was created to serve as an educational reflection guide on objectives, contents and didactic guidelines for professionals who work directly with children from zero to six years old, respecting their pedagogical styles and Brazilian cultural diversity:

Therefore, education means providing situations of care, play and learning that are guided in an integrated way and that can contribute to the development of interpersonal skills to be and be with others in a basic attitude of acceptance, respect and trust, and access, by children, to broad knowledge of social and cultural reality (BRASIL, 1998, p. 23).⁷

The RCNEI is divided into three volumes, the first of which is an introductory document, which presents a reflection on daycare centers and preschools in Brazil, situating and supporting concepts of children, education, institutions and professionals, which were used to define the general objectives of early childhood education and guided the organization of the work axis documents that are grouped into two volumes related to the following areas of experience: personal and social formation and knowledge of the world.

The second volume is related to the scope of personal and social formation experience that contains the work axis that favors, primarily, the processes of building the children's identity and autonomy.

The third volume of RCNEI focuses on the scope of experience and knowledge of the world and contains six documents referring to the axes of work oriented to the construction of different languages by children and to the relations they establish with objects of knowledge: Movement, Music, Visual Arts, Oral and Written Language, Nature and Society and Mathematics.

According to RCNEI (BRASIL, 1998), **movement** is an important dimension of human development and culture. Children move around since they are born, gaining more and more control over their own bodies and increasingly appropriating the possibilities of interaction with the world. They crawl, walk, handle objects, run, jump, play alone or in groups, with objects or toys, always experimenting with new ways of using their body and movement. When moving, they express feelings, emotions and thoughts, expanding the possibilities of meaningful use of gestures and body postures.

⁷ Educar significa, portanto, propiciar situações de cuidados, brincadeiras e aprendizagens orientadas de forma integrada e que possam contribuir para o desenvolvimento das capacidades interpessoais de ser e estar com os outros em uma atitude básica de aceitação, respeito e confiança, e o acesso, pelas crianças, aos conhecimentos amplos da realidade social e cultural (BRASIL, 1998, p. 23).

The National Curriculum Guidelines for Early Childhood Education (DCNEI, Portuguese initials) (BRASIL, 2010), another important official document with guidance on this level of education, considers the child as:

Historical and rights subject who, in the interactions, relations and daily practices experiences, builds his/her personal and collective identity, plays, imagines, fantasies, wishes, learns, observes, experiences, narrates, questions and constructs meanings about nature and society, producing culture (BRASIL, 2010, p. 12).⁸

Human movement, therefore, is more than just displacement of the body in space, constituting a language that allows children to act on the physical environment and act on the human environment, mobilizing people through its expressive content as pointed out at RECNEI (BRASIL, 1998, vol. 3).

The ways of walking, running, throwing, jumping result from social interactions and the relation between men and the environment; they are movements whose meanings have been built according to the different needs, interests and human bodily possibilities present in different cultures at different times in history. These movements are incorporated into the behavior of men, thus constituting a body culture.

Thus, different manifestations of this language have emerged, such as dance, games, plays, sports practices, etc., in which different gestures, postures and body expressions are used with intentionality.

When playing, imitating and creating rhythms and movements, children also appropriate the repertoire of body culture in which they are inserted (RCNEI, 1998).

Complementing the information on the official guidelines, it is necessary to mention the National Common Curricular Base (BNCC, Portuguese initials) (BRASIL, 2017) which brings the current curricular guidelines for the various levels of education and which is being implemented from 2018. The section dedicated to Early Childhood Education takes into consideration the curricular guidelines and references previously approved, RECNEI (1998) and DCNEI (2010), proposing two guidelines: caring and educating. Based on these two guidelines and the two structuring axes of the curricular proposals for Early Childhood Education - interactions and games - "the curricular organization of Early Childhood Education

⁸ Sujeito histórico e de direitos que, nas interações, relações e práticas cotidianas que vivencia, constrói sua identidade pessoal e coletiva, brinca, imagina, fantasia, deseja, aprende, observa, experimenta, narra, questiona e constrói sentidos sobre a natureza e a sociedade, produzindo cultura (BRASIL, 2010, p. 12).

at BNCC is structured in five **fields of experience**, within which the objectives of learning and development”⁹ (BRASIL, 2017), namely:

- a) the self, the other and the us;
- b) body, gestures and movement;
- c) strokes, sounds, colors and shapes;
- d) listening, speaking, thinking and imagination;
- e) spaces, times, quantities, relations and transformations.

It is in the field “body, gestures and movements” that psychomotricity is contemplated:

Through different languages, such as music, dance, theater, make-believe games, they communicate and express themselves in the intertwining between body, emotion and language. Children know and recognize the sensations and functions of their body and, with their gestures and movements, identify their potential and their limits, while developing awareness of what is safe and what can be a risk to their physical integrity. In Early Childhood Education, the body of children gains centrality, as it is the privileged participant in the pedagogical practices of physical care, oriented towards emancipation and freedom, and not towards submission. Thus, the school institution needs to promote rich opportunities so that children can, always animated by the playful spirit and in interaction with their peers, explore and experience a wide repertoire of movements, gestures, looks, sounds and mimics with the body, to discover varied modes of occupation and use of space with the body (such as sitting with support, crawling, proning, slipping, walking on cradles, tables and ropes, jumping, climbing, balancing, running, somersaulting, stretching etc.) (BNCC, 2017, s / p).¹⁰

In this sense, early childhood education institutions should favor a physical and social environment where children feel protected and welcomed and, at the same time, safe to take risks and overcome challenges. The richer and more challenging this environment is, the greater

⁹ “a organização curricular da Educação Infantil na BNCC está estruturada em cinco **campos de experiências**, no âmbito dos quais são definidos os objetivos de aprendizagem e desenvolvimento”

¹⁰ Por meio das diferentes linguagens, como a música, a dança, o teatro, as brincadeiras de faz de conta, elas se comunicam e se expressam no entrelaçamento entre corpo, emoção e linguagem. As crianças conhecem e reconhecem as sensações e funções de seu corpo e, com seus gestos e movimentos, identificam suas potencialidades e seus limites, desenvolvendo, ao mesmo tempo, a consciência sobre o que é seguro e o que pode ser um risco à sua integridade física. Na Educação Infantil, o corpo das crianças ganha centralidade, pois ele é o participante privilegiado das práticas pedagógicas de cuidado físico, orientadas para a emancipação e a liberdade, e não para a submissão. Assim, a instituição escolar precisa promover oportunidades ricas para que as crianças possam, sempre animadas pelo espírito lúdico e na interação com seus pares, explorar e vivenciar um amplo repertório de movimentos, gestos, olhares, sons e mímicas com o corpo, para descobrir variados modos de ocupação e uso do espaço com o corpo (tais como sentar com apoio, rastejar, engatinhar, escorregar, caminhar apoiando-se em berços, mesas e cordas, saltar, escalar, equilibrar-se, correr, dar cambalhotas, alongar-se etc.) (BNCC, 2017, s/p).

the possibility of expanding knowledge about themselves, others and the environment in which they live.

The work with movement contemplates the multiplicity of functions and manifestations of the motor act, providing a broad development of specific aspects of the children's motor skills, including a reflection on the body postures involved in daily activities, as well as activities aimed at expanding the body culture of each child.

Characteristics of children aged five to six years according to RCNEI (1998)

In the children belonging to the age group of five and six years, there is an expansion of the repertoire of instrumental gestures, which have progressive precision.

Acts that require coordination of various motor segments and adjustment to specific objects, such as cutting, pasting, fitting small pieces, among others, become sophisticated.

Alongside this, the playful tendency of motricity remains, being very common that children, during the performance of an activity, deviate the direction of their gesture; this is the case, for example, of the child who is cutting and who suddenly starts to play with the scissors, transforming it into an airplane or a sword.

Gradually, the movement begins to submit to voluntary control, which is reflected in the ability to plan and anticipate actions - that is, to think before acting - and in the growing development of motor containment resources.

The possibility of planning your own movement is shown, for example, in conversations between children in which one tells the other what and how he/she will do to perform a certain action.

The prevailing cultural practices and the possibilities of exploration offered by the environment in which the child lives allow him/her to develop capacities and build his/her own repertoires. Thus, for example, a child raised in a neighborhood where football is a common practice may be interested in the sport and learn to play from an early age. A child who lives on the edge of a river used as a form of leisure by the community will probably learn to swim without having to enter a swimming school, as may be the case with a child from an urban environment. Abilities to climb trees, climb heights, jump distances, will certainly be easier for children raised in places close to nature, or who have access to parks or squares.

The games that make up the children's repertoire, which vary according to the regional culture, present themselves as privileged opportunities to develop motor skills, such as flying kites, playing marbles, shooting with slingshot, jumping hopscotch, etc.

Motor development

In order to be able to intervene and stimulate a child's development process, first, it is necessary to know at what stage of his/her development he/she is in order to select skills consistent with his/her level of motor, affective and cognitive maturity.

Among the theories that define the stages of human development, we adopt “the developmental theory of motor development”, as it puts us in contact with specific age groups and their respective motor maturity, describing their characteristics.

The process of motor development is shown by changes in motor behavior. Thus, a primary means by which the motor development process can be observed is the study of changes in motor behavior over the life cycle, as stated by Gallahue, Ozmun and Goodway (2013), pointing out that the individual's real observable motor behavior provides a window into the motor development process, as well as indications for the underlying motor processes.

It is then a gradual process of acquisition of motor gestures that are increasingly complex and efficient in their intentionalities. This observable movement can be grouped, according to the developmental model, into three categories: stabilizing movements, locomotor movements and manipulative movements.

According to Gallahue, Ozmun and Goodway (2013), the category of stability movements refers to any movement that occurs as a factor in gaining or maintaining the person's balance in relation to the force of gravity.

The category of locomotion refers to movements that involve a change in the location of the body in relation to a fixed point on the surface. Getting from point A to point B, walking, running, jumping or skipping is a task of locomotion.

The manipulation category refers to both broad and fine motor manipulation. Wide motor manipulation involves giving strength to, or receiving strength from, objects. The tasks of throwing, catching, kicking and hitting an object, as well as dribbling and volleying, are movements classified in this type.

Fine motor manipulation involves the intricate use of the hand and wrist muscles. Picking up a pencil, sewing, cutting with scissors and typing are fine motor manipulation movements.

A large number of movements involve the combination of the categories of stability, locomotion and/or manipulation. Skipping rope, for example, involves locomotion (jumping), manipulation (turning the rope) and stability (maintaining balance).

Similarly, playing football involves skills of locomotion (running and jumping), manipulation (dribbling, passing, kicking and heading) and stability (dodging, reaching, turning, turning).

Movement competence

The acquisition of competence in the movement is an extensive process, which begins with the newborn's initial reflex movements and continues throughout life. The process by which the individual goes through the phases of reflex, rudimentary and fundamental movements, until finally reaching the phase of the skills of the specialized movement that is influenced by factors of the task, the individual and the environment.

The reflexes and skills of the rudimentary movement are largely based on maturation. The reflexes appear and disappear in a very rigid sequence. Rudimentary movements form an important basis for the development of fundamental movement skills.

Fundamental movement skills are basic movement patterns that begin to develop around the time when the child is able to walk independently and move freely in his environment.

These basic skills of locomotion, manipulation and stability go through an observable process defined from immaturity to maturity. The stages of this phase include: the initial, the emerging elementary and the proficient.

The reach of the maturity stage is greatly influenced by opportunities for practice, encouragement and instruction, in an environment that promotes learning (GALLAHUE; OZMUN; GOODWAY, 2013).

Under suitable circumstances, children are able to perform, in the mature stage, the vast majority of fundamental movement patterns around the age of six. The fundamental movement skills of the child who starts attending school are often incomplete.

Therefore, the early school years offer an excellent opportunity for the development of skills from the fundamental movement down to proficiency levels. These same fundamental skills will be enhanced and refined to form the specialized movement skills, so valuable for the tasks of recreation, competition and daily life.

Functional characteristics of the brain for coordinated movements

In this subsection, some superficial aspects of brain functioning that are responsible for the execution of coordinated movements and praxis as a mechanism of intentionality of motor movement will be addressed.

Functional units of the human brain

The brain is a broad and complete human organ in terms of its architecture and structure, even if, superficially, only its morphological aspect appears to us. In order to have a more complete view, it is necessary to deepen this knowledge seeking to address some elements that may present us with their functional characteristics.

According to Luria (1988), there are three main functional brain units that work together, in the course of whatever mental activity.

The first one, the Tone or Vigilance Regulatory Unit, is the one that is responsible for maintaining the state of alert, so that the mental processes of the human being follow a correct path, in the sense of being able to receive, analyze and store the information that they are brought to your mind, and it is possible to treat them in the same way in a state of sleep.

Responsible for Receiving, Analyzing and Storing Information, the second Unit, as observed by Luria (1988), is located in the posterior divisions of the cerebral hemispheres, incorporating the general visual, auditory and sensory regions that are formed by isolated neurons located in the parts of the cortex above mentioned.

This system is subdivided, according to the functions it performs, into three areas that are organized hierarchically as: primary areas, responsible for receiving the information and analyzing it in its basic components; secondary areas, responsible for the synthesis of the components, converting the information into functional organization and the tertiary or overlapping areas that carry out the production of symbolic schemes that are the basis of knowledge.

The third unit, Activity Programming and Regulatory Unit, is located in the frontal and prefrontal areas of the brain, and is responsible for regulating our conscious and complex activity. This means that, upon receiving the information that comes to us, we create intentions, plans and programs for its realization, verifying its effects, with the original intentions, trying to correct any type of error. Its outlet is the motor cortex.

These three main functional brain units operate together, each offering its own specific

contribution. Thus, the systems of the first unit offer the necessary muscle tone to enable coordinated movements, those of the second, the synthesis of analysis, and those of the third subordinate the movements and actions to realization plans.

For Wallon, whose observations are brought by Dantas (1992, p. 35), the main axis is motricity, that is, he considers that the brain muscles and structures are responsible for the organization of movement.

Regarding muscle activity, he identifies two functions: kinetic and postural. The first corresponds to the visible movement, to the change of body position, while the second, to the maintenance of the attitude assumed, for example, by mime.

Praxis as intentionality of coordinated movements

For Fonseca (2008, p. 216), “praxis is a movement whose general objective is to reach an end, following an intentional space-time sequence, assuming a complex neurological organization”¹¹.

In this context, praxis can be understood as a system of movements coordinated according to an intention, previously conceived, being associated with the symbolic function of the exploration of objects and the relation with others.

According to Camus (1981), praxis is born in thought, because it is internalized before being produced or expressed in actual and observable actions.

It is a functional system that integrates complex processes, on the one hand figurative, representational and perceptual, and on the other hand, operative, sequential and motor, which fix information and serve to support cognition.

Therefore, praxis would be the result of the systemic integration of motor processes, affective-emotional processes and also cognitive processes.

The distance from animal motricity to human motricity has a lot to do with what is meant by praxis, something that transcends pure motor execution and constitutes an increase in brain volume, resulting in knowledge and cognition, a neomotricity that added nature to civilization itself, without which the process of hominization would not be feasible (FONSECA, 2008, p. 67).¹²

¹¹ “a praxia é um movimento cujo objetivo geral é atingir um fim, seguindo uma sequência espaço-temporal intencional, pressupondo uma organização neurológica complexa”

¹² A distância que vai da motricidade animal à motricidade humana tem muito a ver com o que se entende por praxia, algo que transcende a pura execução motora e se constitui como aumento do volume do cérebro, do qual resultam o conhecimento e a cognição, uma neomotricidade que acrescentou à natureza a própria civilização, sem a qual o processo de hominização não seria realizável (FONSECA, 2008, p. 67).

Fonseca (2008) states that praxis, global and fine, emerged in the evolution of the species as a powerful problem-solving instrument, which allowed not only the execution of the action from the acquisition of posture, from the release of hands and of the face, but the planning and prediction of its effects, foreseeing and anticipating the circumstances in which it must be regulated with the objective of reaching ends of survival, pleasure and social utility.

The notion of praxis is associated with the notion of learning, experience, varied repetition, training to gain automatisms and flexibility, as we can only become pianists playing the piano assiduously. Such learning, of course, does not only involve the activation of the muscles of the hands and fingers and the extraordinary flexibility of the joints.

In reality, all these structures are only accessory, inasmuch as the fundamental role is in the creation of neuronal networks that harmonize sensations and actions, that is, neuronal circuits or functional systems that involve the cooperation of several areas of the brain, which go allow "recording" such connections by repetition and psychomotor improvement.

Basically, this whole process of praxis reflects the culture in which the individual is inserted, adding up all his characteristics, and this is certainly one of the advantages of the human species, in comparison with the others. Each gesture, therefore, presupposes, therefore, a personal and cultural intentionality and not just a set of muscle contractions.

In anthropological terms, intelligence is nothing but the synthesis of thought in action. Thus, once again, the evolution of motricity and the evolution of intelligence are interconnected processes.

Numerous studies and investigations have reported that the delays in motor evolution lead to problems of intelligence, and this is not surprising since the motor sphere is, in short, the stage of intelligence, in the representation of the respective nervous maturity.

Psychomotricity and psychomotor development

In this subsection, the child's psychomotor development will be approached, weaving theoretical and practical reflections on the understanding of psychomotricity, its historical path and its contributions to the field of pedagogical action, citing the studies of Jean Le Boulche (2001) as a reference in the area of Education Physics for the development of a psychomotor education.

Constituent elements of Psychomotricity

Within the study of psychomotricity, the body schema, body organization in space, lateral dominance, balance, laterospatial organization and dynamic coordination are the constituent elements.

Body scheme

The body scheme can be defined as “an intuition as a whole or an immediate knowledge that we have of our static or moving body, in the relation of its different parts to each other and, above all, in the relations with space and with the objects that surround it” (FONSECA, 2009, p. 78).

We can say that the body scheme is an essential basic element for the formation of the child's personality, since it is the representation of the child's image of his own body. The child will feel good to the extent that his body obeys him, that he knows it well, that he can use it not only to move, but also to act.

It is clear for the teacher to diagnose the child who is with his ill-constituted body scheme, as he/she does not coordinate movements well, his/her writing is “ugly”, in reading he/she does not show harmony, which means to say that he/she does not follow the rhythm of reading or simply stop in the middle of a word.

According to De Meur and Staes (1991), a child who dominates his/her body feels comfortable exploring his/her potential, as he/she demonstrates resourcefulness and efficiency to perform the tasks offered to him/her, which provides him/her with well-being, making it easy and balanced your contacts with others. For Le Boulche (2001), the image of the body represents a form of balance between psychomotor functions and its maturity, not just corresponding to a function, but to a functional set with the purpose of favoring the child's development.

The organization of the body in space

We refer here to the ability to move one's body in an integrated manner, within an environment containing obstacles, deflecting, moving or passing through them. Simple movements such as proning, crawling and walking provide the child with the development of the first spatial notions: near, far, inside, outside. Discovering and having the notion of above, below, above, for the child, implies that he is presenting an integral development of his actions.

For De Meur and Staes (1991), the problems related to temporal and spatial orientation, such as, for example, with the notion “before-after”, mainly cause confusion in the ordering of the elements of a syllable. The child finds it difficult to reconstruct a sentence whose words are mixed, and grammatical analysis is a puzzle for him/her.

Faced with problems of spatial perception, a child is unable to distinguish, for example, a "b" from a "d", a "p" from a "q", "21" from "12", if he/she does not notice the difference between left and right. If the high and the low are not clearly distinguished, confuse the “b” and the “p”, the “n” and the “u”, the “or” and the “on”, that is, you cannot perceive, in the abstract, the questions that were not addressed in the concrete.

According to Krech and Crutchfield (1973, p. 416), for there to be no losses, the child needs to be stimulated to develop in the period in which he/she is predisposed. Otherwise, the psychomotor, functional, postural benefits, habits and coordination will be impaired and their possible recoveries will never be achieved with the same use.

Therefore, to work with the organization of the body in space, we must consider the spatial structuring, which is nothing more than orientation, the structuring of the external world referring to the referential self, then to other objects or people in a static or moving position .

Lateral dominance

Lateral dominance is a characteristic that we seek to perceive from an early age, but it means much more than choosing the hand (right or left) to write or eat; it refers to the individual's internal space scheme, which enables him/her to use one side of the body with better ease than the other, in activities that require skill, characterized by functional asymmetry.

The definition of laterality occurs as the child develops and, therefore, laterality in the child should not be stimulated until it has been defined, that is, when the child is forced to use one side of the body it becomes harmful to the child laterality.

According to De Meur and Staes (1991), the child realizes that he/she works naturally with one hand, he/she will easily keep that “that hand” is the left or the right.

Likewise, in case of cross laterality, the child will easily confuse the terms “left” and “right”, as it is sometimes stronger on the right side (for example, the foot), sometimes stronger on the left side (the hand).

Who has never heard stories of fathers and mothers, or even teachers who forced the child to hold the pencil or the cup with the right hand, because they thought it was wrong, perhaps due to cultural factors, to write with the left hand. Parents and teachers should favor

the choice made by children in relation to their laterality, only assisting them in the development of their skills.

Balance

We are referring here to the function in which individuals maintain their body stability during movements and when in a state of immobility.

For Fonseca (2009), obtaining a good balance is essential for the achievement of locomotion and the independence of the upper limbs. The difficulty in balancing oneself produces states of anxiety and insecurity, since the child is unable to maintain a static or movement state and this disturbs the relation between physical and psychological balance.

Socially, the child may show a tendency to inhibition or a desire to hide and a lack of self-confidence. In this sense, we can say that the balance is not limited, exclusively, to an attitude related to muscle tone, but that psychologically affects the child in his/her social relationships.

Latterospatial organization

During growth, of course, a lateral dominance is defined in the child, resulting in a tendency to have greater skills and abilities on one side of the body in relation to the other. This is because, even if laterality corresponds to neurological data, it is also influenced by certain social habits.

The "left-right" knowledge stems from the notion of lateral dominance. It is understood as being the generalization, of the perception of the corporal axis, to everything that surrounds the child. This knowledge will be more easily learned the more accentuated and homogeneous the child's laterality is.

For this reason, it is not enough to tie a bow or ribbon to the child's hand and tell him/her that this is the right hand, if it is not really worked, stimulated. He/she needs to know the terminology as well as to dominate and distinguish right from left, remembering that, around the age of six, when the process of literacy begins systematically, the child has knowledge of the right and left side of her body. Considering the orientation of the spelling in the Portuguese language, from left to right, the domain of laterality is fundamental in the initial phase of acquisition of reading and writing.

Dynamic coordination

The general dynamic coordination of the child, a good control of the body supplying habitual anxiety, reduces tensions bringing satisfactory control and confidence in the body itself.

With regard to dynamic hand coordination, Le Boulch (2001) says that manual skill or dexterity is a particular aspect of global coordination. It invests a lot of importance in the praxis, in the graphics, which should be given particular attention.

The child, when he/she has some disturbance in the development of coordination (both global and hand dynamics), may have school difficulties, such as dysgraphia that goes beyond lines and margins of the notebook, he/she may have difficulties in grasping fingers and gestures.

Psychomotor skills and the literacy process

Psychomotor skills are essential to good performance in the literacy process. Learning to read and write requires skills such as:

- Manual dominance already established (laterality area);
- Sufficient numerical knowledge to know, for example, how many turns there are in the letters "m" and "n", or how many syllables make up a word (area of conceptual skills);
- Movement of the eyes from left to right, mastery of delicate movements suitable for writing, monitoring the lines of a page with the eyes or fingers, adequate grip to hold pencil and paper and to leaf (visual and manual coordination area);
- Discrimination of sounds (auditory perception area);
- Adequacy of writing to the dimensions of the paper, recognition of differences between pairs b/d, q/d, p/q etc., reading and writing orientation from left to right, maintaining the proportion of height and width of the letters, maintaining space between words and writing guided by guidelines (areas of visual perception, spatial orientation, laterality, conceptual skills);
- Proper pronunciation of vowels, consonants, syllables, words (communication and expression area);
- Notion of linearity of the successive arrangement of letters, syllables and words (temporal-spatial orientation area);
- Ability to decompose words into syllables and letters (analysis);
- Possibility to combine letters and syllables to form new words (synthesis).

For the acquisition of these abilities to happen, great diversities of motor experiences will be necessary, with attention to qualitative aspects, such as rhythm, coordination and relaxation.

In this sense, for Molinari and Sens (2002-2003), the movement is an expressive and intentional meaning, in addition to being a vital manifestation of the human person. It is through movement that involvement reaches the thought, giving the movement a content of consciousness.

With that, the corporal development depends on the situations that the individual experiences in his/her life process and all his/her experience has to add something to the corporal scheme.

Oliveira (2005) considers that it is through vision and motor skills that children discover the world of objects, and it is by manipulating them that they rediscover the world. However, this discovery through objects will only be positive when the child is able to hold and let go, when he/she has acquired the notion of distance between him/her and the object he/she manipulates.

Thus, psychomotor education must be considered as basic education in the first years of teaching. It conditions the literacy process because it leads the child to become aware of his/her body, of laterality, to situate himself in space, to dominate his/her time, to habitually acquire the coordination of his/her gestures and movements.

Therefore, to start the literacy process, Fonseca considers the first need

[...] Literate the body language and just walk towards trivial learning that is nothing more than perceptual-motor investments linked by space-time coordinates and correlated by rhythmic melodies of integration and responses (FONSECA, 1996, p. 142).¹³

According to Oliveira (2005), there are some prerequisites related to psychomotor development that allow the child to have meaningful learning in the classroom.

And for that it is necessary that, as a minimum condition, the child has a good command of the gesture and the instrument. This means that you will need to use your hands to write and therefore you should have good fine coordination. The child will have more ability to manipulate classroom objects, such as pencil, eraser, ruler, if he/she is aware of his/her hands

¹³ [...] alfabetizar a linguagem do corpo e só caminhar para as aprendizagens triviais que mais não são que investimentos perceptivo-motores ligados por coordenadas espaços-temporais e correlacionados por melodias rítmicas de integração e respostas (FONSECA, 1996, p. 142).

as part of his/her body and has developed specific movement patterns, learning to control his/her muscle tone is paramount, also, to dominate your gestures.

Psychomotor exercises in early childhood education

In the school environment, psychomotor exercises should be a constant, as they contribute to the effectiveness of the pedagogical practice to become a significant practice, resulting in an important learning for the child.

In this sense, some games that work with crawling, rolling, swinging, somersaulting, balancing on one foot, walking sideways, balancing and walking on a line on the floor and various materials (outdoor walks), allow that psychomotor skills are developed, supporting, at the same time, the cognitive issues so essential to school tasks.

Another possibility refers to recreational activities, through which we can develop the affective factors in line with the psychomotor and which are expressed in the interaction between the spirit and the body, the affectivity and the energy, the individual and the group, promoting the totality of the human being.

As pre-writing exercises, the child needs to master the gesture, spatial structuring and temporal orientation, which are the basic foundations for the skillful acquisition of writing. Since, in order to present a legible and skillful writing, it is not enough to do "handwriting", it is necessary that we have our fine motor coordination, and other psychomotor domains for the performance to be performed satisfactorily.

Therefore, for writing, we need: graphic direction, as we write horizontally from left to right (laterality); basic topological notions (top and bottom (n and u), left and right, oblique and curved (g and q)); notion of before and after, without which the child does not start his/her gesture in the right place (mirrored writing, floating between the lines).

The pre-writing and spelling exercises are necessary for the learning of letters and numbers, its purpose is to make the child reach the domain of gesture and instrument, the perception and understanding of the image to be reproduced. These exercises can be divided into purely motor exercises or exercises of "spelling", preparatory exercises for writing on the blackboard and on paper.

Final considerations

In this article, we seek, without disregarding the contributions that constructivism has brought to the understanding of the reading and writing acquisition process, to defend the reevaluation of a practice specifically focused on psychomotricity in early childhood education, helping children in the process of reading acquisition and writing, the focus of the early years of elementary school.

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