



THE LEARNING PROCESS OF PRESCHOOL CHILDREN

O Processo De Aprendizagem Da Criança Em Idade Pré-Escolar

RESUMO

O tema central do presente trabalho foi conhecer como acontece a construção dos conhecimentos de leitura e escrita, bem como o desenvolvimento do raciocínio lógico matemático pela criança em idade pré-escolar, a partir de uma abordagem pedagógica. Nessa direção, o principal objetivo da pesquisa foi investigar por meio de revisão bibliográfica, como as atividades lúdicas de alfabetização e letramento, desenvolvidas no contexto da educação infantil, podem favorecer o aprendizado da leitura, escrita e matemática pelas crianças nessa faixa etária da pré-escola. À vista disso, observou-se a importância da escolha de procedimentos de ensino e da organização de experiências de aprendizagem, onde o professor possa deixar que o aluno de educação infantil construa sua autonomia, mediando a descoberta dos signos linguísticos pelo educando e permitindo a evolução dos seus conhecimentos e habilidades de ler, escrever e calcular. De igual forma, possibilitando à criança interpretar o mundo letrado a seu modo, a fim de que reconstrua suas hipóteses acerca da realidade e se desenvolva em todos os aspectos. Nesta via, para elucidar essas questões, buscou-se o referencial teórico de Emilia Ferreiro e Magda Soares, entre outros estudiosos dessa temática.

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PALAVRAS-CHAVES: Aprendizagem; Criança; Educação Infantil

**ABSTRACT**

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The central theme of this work was to understand how the construction of reading and writing knowledge happens, as well as the development of logical mathematical reasoning by preschool children, based on a pedagogical approach. In this sense, the main objective of the research was to investigate, through a bibliographical review, how playful literacy activities, developed in the context of early childhood education, can favor the learning of reading, writing and mathematics by children in this pre-school age group. In view of this, the importance of choosing teaching procedures and organizing learning experiences was observed, where the teacher can allow the early childhood education student to build their autonomy, mediating the discovery of linguistic signs by the student and allowing evolution your knowledge and skills in reading, writing and calculating. Likewise, enabling children to interpret the literate world in their own way, so that they can reconstruct their hypotheses about reality and develop in all aspects. In this way, to elucidate these issues, we sought the theoretical framework of Emilia Ferreiro and Magda Soares, among other scholars on this topic.

KEYWORDS: Learning; Child; Early Childhood Education**INTRODUCTION**

First of all, it is important to emphasize that the central theme of this work is to deepen an investigation into the development of reading and writing, as well as the construction of logical mathematical reasoning by pre-school children, as a result of the development of playful



literacy and literacy activities in early childhood education. From this angle, the intention was to develop a study of this process of discovery by children, through activities that encourage playing, exploring, experimenting and social interaction.

In view of this, the methodological procedure was based on theoretical support, through a literature review and qualitative research techniques, which proved to be the most appropriate for the study. In view of the above, as this work does not intend to exhaust the possibilities for discussion on the subject, some points have been highlighted and aspects considered relevant to the learning process of pre-school children have been raised.

In line with the central theme presented here, it can be seen that children today live in a literate context, where from a very early age they are inserted into an intertextual world, with countless audiovisual, imagery, sensory and media stimuli. This means that a space where playful literacy activities prevail over bookish and encyclopedic content, before elementary school, is of the utmost importance, as it favors the learning and all-round development of young children, understanding early childhood education as a child's right and not as a luxury or a favor. For this reason, it should not have a merely preparatory conception, as if this period so rich in learning, discoveries, constructions and experiences were just a preparatory phase for the following years of formal schooling.

From this perspective, it is clear that it is important to immerse pre-school children in a literacy environment as early as kindergarten, where nothing is forced or imposed, but where they basically experience activities with a lot of playfulness, through various learning situations, so that they can experiment, take risks, create hypotheses, exercise and develop their abilities and potential. In this way, teaching practice plays a fundamental role in building each student's identity and autonomy. In this regard, this research highlights the construction of reading, writing and mathematics by the young child, without losing sight of the many other branches of human knowledge, which the child, as a global and biopsychosocial being, is capable of grasping.

Learning in Childhood: Revisiting a Concept

Learning is possibly an important process that all human beings go through, it could be said that practically everything men and women do needs to be understood by others. From this point of view, the act of learning is undoubtedly related to the social and cultural development



of humanity and is something complex. It is also important to consider that education aims to lead individuals to the full development of their capacities. Given the above, it is interesting to note that the aim of this work is to carry out a bibliographical study on the process of preschool children constructing knowledge of reading, writing and mathematics, thus highlighting the learning process of preschool children, without losing sight of the fact that the act of learning permeates the child's entire life and does not only manifest itself when they are in nursery school, as Nicolau (1987) points out.

The child learns a lot that is not within the scope and concerns of the school. As such, their knowledge goes far beyond what is intentionally offered to them in pre-school (NICOLAU, 1987, p. 73).

In this line of interpretation, based on the understanding that children are naturally creative, creating for them is as natural as walking and running and they need to make continuous use of their energy and imagination. From this point of view, according to Nicolau (1987), nursery and pre-school are of the utmost importance, considering that the first years of life are fundamental to the child's subsequent development (p.272). Early childhood education is a period of school life that caters for very young children and involves the participation of the family and the society around them. It should start from the children's reality and knowledge, expanding it with activities that have concrete meaning for their lives, enabling them to build a vision of the world and of themselves as social subjects.

The process of children building up their knowledge of the world, as a transforming element in the teaching-learning dynamic, takes place through the achievements made in the search for new challenges in this age group, and serves as a basis for new knowledge, using the most different languages. So in pre-school, as well as providing physical care for children, encouraging them to develop free or guided activities contributes to their development and creates conditions for them to build their own knowledge, as well as valuing their expressions and interests.

From this angle, it is up to the early childhood education teacher to be concerned with organizing and applying activities that are valid for the students. It is also up to them to be prepared to provide children with contextualized learning, in other words, taking into account the singularities and characteristics of the little ones. In this respect, Kuhmann (1998) states that Early Childhood Education encompasses all forms of education for children, i.e. it takes



place in the family, the community, society and the culture in which they live, as well as in their own school institutions.

In view of the above, given the importance of providing a physical space that values freedom, spontaneity and non-commitment in childhood, as reinforced by Freitas (1997), toys and other materials need to be arranged in a way that is accessible to children, allowing for their autonomous use, visibility, as well as organization that makes it possible to identify sorting criteria. Knowing that using, enjoying, caring for and maintaining materials are important skills for this age group, the maintenance and replacement of these materials should therefore be part of the nursery school's routine.

In view of this, early childhood education institutions are educational facilities and not just care facilities, in an integrated concept of the functions of education and care. It is one of the contexts for the motor, social, symbolic, emotional and cognitive development of young children. The important thing is that the institution is seen as another environment for the socialization of children and not merely as a substitute for the family. Thus, according to Craidy (2001), pre-school complements and integrates the family and the community by offering children what they need to develop in all aspects. In other words, according to Falcão (1986, p. 109) "the person is actually a cognitive-affective-motor whole, and a change in one aspect affects the others. That is why it is often said that learning is global".

The pre-school will be a valuable resource - complementing the action carried out by the family or institutions that are responsible for providing educational services to the child - for their integral formation, in intellectual, affective-social and psychomotor aspects. (NICOLAU, 1987, p.13)

Based on the National Curriculum Framework for Early Childhood Education (1998), early childhood education professionals need to be attentive to these children, understanding and recognizing their particular way of being and being in the world, identifying their desires, needs and particularities. In early childhood education, work should encourage children to expand on the experiences they have already had, enabling them to learn and build new ways of thinking, since in their experiences they formulate hypotheses, explore and reconstruct concepts. In this respect, Pedro Demo (1993) emphasizes that in the teacher-student, adult-child relationship, there should be no vertical hierarchy, which divides roles in the form of authoritarianism, but, on the contrary, the teacher and student should relate to each other in an autonomous way, as full social subjects, in other words, as concrete human beings, opening up the chance in the largest possible dimension to form critical, creative men and women who are



up-to-date and competent to face the challenges that the world poses and early childhood education, in fact, also shares this formative task.

For a better understanding of the study, this text is methodologically divided into two parts, which highlight the process of building reading and writing skills, as well as the development of logical mathematical reasoning by pre-school children, as already mentioned. In this respect, children in early childhood education should be introduced to a process of developing their knowledge of reading, writing and mathematics through a playful literacy environment, as they read a multitude of stimuli in their surroundings from a very early age, i.e. they are already reading the world even before they enter the school environment. According to Queiroz (2003), the learning process should be understood as a continuous and dynamic process of building knowledge, in which students are active subjects and what matters most in this process is the possibility of continuing to learn and developing a representation that is particular to them about a content or object of reality. Therefore, learning is building.

Building knowledge of reading and writing

It is important to consider that all knowledge is a construction resulting from the child's actions, so access to written language is not just about learning to read and write, but about making use of it, recognizing the function of writing and also making social use of it. To this extent, according to Soares (2009, p. 1) "initial access to written language is not reduced to learning to read and write in the sense of spelling and decoding, but rather to learning to make use of reading." According to Freire (1990), learning to read and write is, first and foremost, learning to read the world, to understand its context, not in a mechanical way, but in a dynamic relationship that connects language and reality. In this sense, given the importance of creating a space for access to reading and writing from early childhood education onwards, Rego's (1990) contribution is valid when he states that pre-school is of fundamental importance in enabling children to begin to experience reading and writing.

We see the pre-school years as an ideal time to initiate children, regardless of their social class, into meaningful contact with reading and writing through a use of written language specifically aimed at the world of children's imagination (REGO, 1990, p.78).

In view of the above, it is important that the habit of reading is encouraged in childhood, from nursery school onwards, so that children learn from an early age that this practice can be pleasurable, not least because reading is present from the moment children begin to



"understand" the world around them, i.e. from a very early age. Reading stories to children stimulates their imagination, it encourages them to draw and play, storytelling is important in a child's education, listening to stories is the beginning of learning to be a reader and being a reader is a whole path of discovery and understanding of the world. Along these lines, according to Rego (1990, p. 69) "the stimulus to reading can begin with books containing short texts whose stories are already known to the children". In such a way that the child's imagination can be worked on and valued as a result of these reading activities.

Imagination gives variety to children's language. Children like stories in which animals get up to mischief. (...) Enriching experiences, giving wings to the imagination is to provide intrinsic motivation for teaching reading. (...) Reading, as in the child's spontaneous language, should repeat words without repeating ideas. (MARINHO, 1981, p.70).

This time is rich because children are curious and inquisitive, and it's up to the teacher to stimulate attitudes of curiosity. For this reason, every opportunity should be taken in pre-school to enrich children's vocabulary, such as: talking to them a lot, asking questions, encouraging more and more complete answers, telling stories, creating opportunities for children to take the floor in a group, to listen to others, to respond to them, to make up stories, giving free rein to their imagination, to describe their activities, for example. According to Nicolau (1987), the relevance and role of pre-school education in the integral formation of the child for a society that is continually changing is evident (p. 19).

In this respect, Soares (2001) states that it is necessary to incorporate the practice of reading and writing into the activities that require these practices. This means that literacy, with activities to introduce children to the alphabetic system and its conventions, and literacy, with practices for the social use of reading and writing, should already be present in early childhood education. Given the above, the aforementioned author calls learning to read and write a tool. It is therefore necessary for children, in the context of early childhood education, to take ownership of this tool, through the actions of the teacher, as well as the actions of the students, since they are determinants of the teaching-learning relationship, as an interactive process. According to Fernández (1991), in order to learn, two characters are needed: a teacher and a learner and a bond is established between the two (p. 47). In addition, according to Freire (1996), every educational practice requires the existence of subjects, one who, by teaching, learns and another who, by learning, teaches (p.25).

It is necessary to expose children to various written materials such as newspapers, product labels, song lyrics, comic strips, parliaments, poems or narratives, by way of



illustration. They help children to understand the form of writing and to understand what is being read, where it is being read and what it is being read about. They should be read by exploring the content with the children, i.e. interpreting what has been read. It is therefore the primary role of the nursery school teacher to work with a variety of incentives, in terms of different text types and also using exercises to interpret and understand different types of texts, stories, anecdotes and tales, in which various types of tools can be used.

Colored books, invitations, stories dictated by the children and written by the teacher demonstrate the usefulness of writing in preserving and transmitting thought, and serve to awaken in the class the desire to read. (...) As the class matures, the teacher adds directed reading and writing instruction to the free choice activities: among all the words, the child's own name stands out for its personal interest. (MARINHO, 1981, p.17)

Above all, through printed texts, containing pictures, reports, images, photographs, didactic content, exploring and piquing children's curiosity through various means of verbal and non-verbal language, children develop their reading of the world and their knowledge of the literate world. From this perspective, Sandroni and Machado (1991) state that children, as well as devoting a great deal of attention to the story, feel encouraged to read the books themselves, or to look for others on the same subject.

When children read, they are positioning themselves in relation to the world, which is why the development of autonomy, independence and the student's positioning in relation to the literary text should be privileged. Enabling the reading of stories and anecdotes as a possibility of a pleasurable encounter between the student and literature. Building meaningful text reading practices for early childhood education students, while at the same time developing reflective listening, stimulating imagination and organizing thought. According to Rego (1990, p. 77), children's literature can be "an extremely relevant pedagogical instrument throughout the period preceding a formal process of literacy itself". Along these lines,

the story is a valuable teaching resource (...) the story allows the child to recreate it, to grasp the central and secondary ideas, to capture the affective tone of the characters, to know their own emotionality, to perceive the reaction of their classmates, to expand their vocabulary. (NICOLAU, 1987, p.226)

In this sense, familiarizing children with writing through stories enriches their vocabulary and the development of text comprehension skills, enabling them to read independently through oral interpretation of stories. It helps children make connections between sounds that are repeated in many words. Reading activities must be used in a planned and systematic way, and nursery schools must be immersed in a literate context, a literacy



environment. In fact, in early childhood education, children receive information about writing when they play with the sound of words, recognizing similarities and differences between terms; handle all kinds of written materials, such as magazines, comics, books, issues, etc.; and when the teacher reads to the class. In this sense, through activities such as poetry, songs and music, children improve their phonological awareness, perceiving the sounds that delimit speech.

According to the National Curriculum Framework for Early Childhood Education (1998), the development of reading skills is directly linked to the development of oral and written communication skills. In this respect, it should be emphasized that pre-school children build their knowledge of written and oral language when, for example, they take part in various social exchange situations, telling and listening to other people's experiences, asking and answering questions, choosing and handling books and magazines and other texts in various situations, or even when constructing interrogative and negative sentences, noticing children's interest in reading, valuing it as a source of information, as well as writing their own names, fully understanding the phonetic system, using symbols and giving them the meaning of writing, narrating text by memorizing stories, parliaments, verses, being careful with the use of books and other written materials and understanding how writing works.

In line with Ferreiro (2001), it is necessary to value children's spontaneous productions, as they are the clearest indicators of the explorations carried out in order to understand the nature of writing. When a child writes as they believe they could or should write a certain set of words, they are offering something very valuable that needs to be interpreted and assessed (p. 17). It should be noted that children build their thinking through mistakes, gradually becoming aware of their difficulties and trying to correct them. For this reason, children's productions should be valued, encouraging new attempts and challenging them to construct more elaborate answers. It is essential to take into account the level of cognitive development of children in this age group, when adopting proposals for access to reading and writing with the little ones, so that they can grasp the planned content and structure it in their own way. As stated by Novaes (1983),

the activities proposed in pre-school programs should be classified not according to content, but according to the knowledge and cognitive processes involved, and it is desirable that the content organized by the adult should always be filtered by the child, in order to structure it in a more personalized and authentic way. (NOVAES, 1983, p.35).



In this vein, phonological awareness can be understood as the metalinguistic skill of becoming aware of the formal characteristics of language, in other words, when children realize that words have sounds that repeat, they can become aware of the forms of language and their letters, as well as the function of writing. This is not the result of copying or the predetermined request of an adult. Ferreiro's (2001) constructivist concept, based on Piaget's theory, provides a way of understanding how children think and build their way through learning to write. Thus, there is no set of defined steps for developing literacy in a constructivist approach. The point of reference for structuring the activities to be developed in the classroom is the student, the subject of learning. From this point of view, the student is therefore the producer of knowledge. In this way, with regard to the appropriation of the alphabetic notational system, it can be seen, according to Ferreiro (2001), that initially the child, in the process of constructing writing, sees drawing as a code capable of recording everything that comes to mind.

The initial phase of learning written language is, according to Vygotsky, the prehistory of written language: when the child gives scribbles and drawings or objects the function of signs, they are discovering systems of representation, precursors and facilitators of understanding the system of representation that is written language (SOARES, 2009, p.1).

The aim of language activities is to get children to interpret what they hear, respond logically to what is asked, and develop logical thinking and expression. Oral language allows children to expand their vocabulary and knowledge, as well as stimulating their verbal participation in the group and developing critical thinking skills, all of which contribute to successful learning. However, as Marinho (1981) points out, these hypotheses, in coexistence with other writing experiences, make the child realize that there is a different code that they use to express their ideas.

At 4 to 5 years old, the first recognizable forms of children's drawings do not yet form a logical whole, but for future learning of writing, the child has already made an important discovery: the graphic expression of ideas (MARINHO, 1981, p.35).

When children scribble, they are already assimilating concepts that they will use in future learning. Therefore, at this stage it is not appropriate to correct any type of production by the child, as they are using writing to express themselves, just as they do with drawings, in order to exemplify. Writing evolves from the first scribbles into a way of recording organized and intentional thought. In this respect, Marinho (1981) states that

In free drawing, the child learns to control and direct movements, making handwriting exercises unnecessary. When they can reproduce people, houses and flowers in a recognizable way, drawing becomes a means of communicating ideas... (MARINHO, 1981, p.3).



Thus, according to Marinho (1981), the richness of experiences of oral language and free writing, in a favorable environment, underpins learning to read and write (p.38). It's important for children to experience reading and it's also important for them to experience writing in their own way, how they think they write. By producing their own writing, children show their intention to read and write and in this way they build up their hypotheses about reading and writing. Since it is not only when they receive information that children are learning, but according to Cória-Sabini (1990, p. 79) "all situations lead to a broadening of their intellectual horizon".

Students who draw scenes and reproduce in freehand the minute features of people, vehicles and houses can easily copy words and short sentences. They don't need handwriting exercises or to copy the same word over and over again, which tends to worsen the quality of their writing. Illustrating the writing with the corresponding drawing fixes the meaning of words and sentences and develops a taste for good presentation of work. (MARINHO, 1981, p.80)

In view of this, children's experience as readers enables them to learn the essentials of writing practices. The more acts of reading and writing a child can experience, the more information they have about reading, the more they will have elements to work with cognitively and develop their hypotheses about reading and written language. In this sense, the main objectives with regard to initial access to reading and writing in early childhood education, according to Soares (2009), can be described as understanding what is read and writing in such a way that others understand what is written; knowing different genres and different text carriers and making use of them to read and write; participating appropriately in events of various kinds which include reading or writing; building familiarity with the world of writing and acquiring basic skills in the use of reading and writing; developing positive attitudes towards the importance and value of writing in social and individual life (p. 1). 1).

The development of Mathematical Logical Reasoning

It's interesting to note that logical mathematical reasoning is about the child's logical relationship with the environment. In the construction of intelligence structures, the environment plays an important role due to the conditions it offers. In view of this, children bring to the school environment a series of experiences they have had in the environment in which they live and socialize, and from these they develop their hypotheses about the world and its relationships. In this context, it is up to the teacher to help the child develop mathematical



knowledge by creating situations that involve mathematical concepts acquired or not by the child, providing situations in which the child thinks, creates and discovers how mathematical concepts are used in practical life, since the construction of logical mathematical knowledge takes place through the reasoning produced by the child in the search for and discovery of the appropriate solution.

In this sense, mathematics is characterized by logical rigor, providing the development of mathematical reasoning and skills such as observation, communication, argumentation and validation of processes, stimulating the various forms of reasoning. It is a mental effort that stimulates thinking, making it a tool that helps solve and reflect on problems and build critical individuals.

Logical-mathematical intelligence is manifested by the ability and sensitivity to discern logical or numerical patterns and the ability to work with long chains of reasoning. The stimuli for its development structure new ways of thinking and a refined perception of the elements of magnitude, weight, distance, time and other elements that involve our action on the environment. The basic brain areas of its action would reach the left parietal lobe, but for some other mathematical functions, points in the right hemisphere. (ANTUNES, 2009, p. 17).

In this way, the teacher must focus on the child's thinking in order to understand how they construct numbers and logical mathematical reasoning in the search for problem-solving. Like written language, mathematics is also based on constructivist theory, with the aim of offering stimuli and resources to develop children's reasoning by proposing activities in which they are led to interact with concrete objects and, based on this interaction, gradually build their mathematical knowledge. Along these lines, teaching mathematics means developing logical reasoning, stimulating independent thinking, concentration, attention, creativity and the ability to solve problems through logical-deductive reasoning. Mathematical learning is observed in the processing of information, the study of numbers and operations, the study of quantities and measures, and the study of space and shapes. The earlier mathematical thinking is worked on with children, the earlier they will acquire a solid foundation for their learning.

As such, mathematics should prioritize the construction of concepts through active experimentation by the child, with a view to later normalizing these concepts through the language of operative signs. From this point of view, the notion of number, according to Piaget quoted by Kamii (2002), involves three basic concepts: conservation, the understanding that the quantity remains the same, even when its appearance changes (invariance of the number);



seriation, the understanding of an implicit order in the relationships between elements; and classification, the inclusion of an element in a broader one that contains it.

Therefore, when children count objects at random, they can repeat numbers, but in order to count correctly, they need to construct a mental order and realize that the larger numbers include the smaller ones (class inclusion). According to Kamii (2002), active and autonomous mental participation is fundamental to learning, especially in everyday classroom situations and group games. In this vein, an extremely playful activity is making games, since through playful activity and games, children form their concepts, select ideas, establish logical relationships, experience rules and socialize.

In this way, children must be constantly challenged so that they can build their own knowledge of mathematics, in terms of solving everyday problems, as the didactic-pedagogical procedures are applied in the classroom by the nursery school teacher. The school environment plays an important role in the development of logical ways of thinking. It should be emphasized that play activities give pre-school children opportunities to develop their skills. Therefore, play activities should be valued because they can be used to develop creative problem-solving strategies. As stated by Moraes (1997, p.4) "play is a way for students to exercise their actions and not just develop their intelligence by simply recording observations". In view of the above, Nicolau (1987) points out that

the child, through action with peers and adults, will develop affective-social, psychomotor and intellectual skills that will translate into progress in the areas of observation, comparison, classification, spatial-temporal orientation and language. (NICOLAU, 1987, p.185)

As far as pre-school education is concerned, the child's construction of mathematical knowledge can be seen when, for example, they identify and explore geometric properties of objects and figures, such as shapes, types of contours, flat faces or straight sides, when they count to 10, can tell their age, perform different magnitude procedures, have a sense of order: first-last, before-after, as well as when she performs mental calculations as a tool for solving problems, makes copies of models with building blocks, using the blocks to construct and imagine situations, explores spaces, identifies: behind/ in front/ above/ below/ inside/ outside/ near/ far/ on the side, recognizes her right and left hand, also, when she knows how to make two equal columns with tokens, respects the materials produced individually or in groups, in addition, when she organizes and takes care of the materials displayed in the living room space, in order to illustrate.



Logical-mathematical intelligence is manifested in the ease with which questions involving calculations are prepared, in the ability to perceive geometry in the spaces that are traversed, in the satisfaction manifested in solving logical problems. It is also seen in the sensitivity and ability to discern numerical or logical patterns and to deal with long chains of reasoning (ANTUNES, 2009, p. 22).

Likewise, when children play with their toys, organizing them intuitively, the construction of logical mathematical thinking is developed through the perception of the differences contained in the objects that are in external reality. According to Kamii (2002, p. 14) "difference is a relationship created mentally by the individual when relating two or more objects". This perception is also established when the child makes intuitive arrangements, but the construction of the concept does not occur. In the construction of logical mathematical reasoning, the teacher needs to encourage the child to think, providing quantifications, comparisons, series, among other concepts.

Children acquire the autonomy to act according to their convictions, choosing the appropriate answer to the proposed problem, and this autonomy leads to the development of logical mathematical thinking. When children play, draw or manipulate any other type of material that allows them to work freely and creatively, attention should be paid to how this activity contributes to the development of their logical mathematical reasoning and their social integration. As Marinho (1981, p. 12) states, "when playing freely with paints, sand, wooden blocks, the child adapts the activity to the degree of their development".

In fact, when educators interact with children, there is the explicit aim of teaching and promoting certain types of learning, which is why it is essential for professionals to be clear and aware of the educational intentions that guide their work and to draw up clear proposals about what, when and how to teach, in order to enable appropriate activities that are consistent with their objectives, enriching and promoting the development of young children's mathematical knowledge. Along these lines, play, as the child's free and spontaneous activity, is seen as a valuable component in their development and should permeate all activities, developing freely and with guidance on a daily basis. To this end, individual differences must be taken into account, adapting teaching to the specificities of each one. In the light of Kamii's (2002) studies on these issues, of course,

Saying that the child must construct his or her own knowledge does not imply that the teacher should sit back, omit himself or herself and leave the child entirely alone. The teacher can create an environment in which the child has an important role and the possibility of deciding for themselves how to carry out the responsibility they have freely accepted (KAMII, 2002, p.50).



In this sense, classroom games and free, spontaneous play are very rich learning factors in early childhood education, associated with playful activities that encourage the construction of mathematical knowledge. It's worth noting that children should value the language of play because, as Sandroni and Machado (1991) state, playing and living are one and the same for children. So that while they are playing, children are also constructing their conceptions of the world, (re)meaning the established rules, or even role-playing in order to exemplify. From this perspective,

Play is, par excellence, integrative. As they play, children get to know themselves better and interact with their peers and adults. Play allows the child to understand reality and adapt to it spontaneously. (...) Through play, the child's self-confidence is continually developed because, as they are challenged to develop operative skills involving identification, observation, comparison, analysis, synthesis and generalization, they come to know their own possibilities. They are free to shout, run, expand, suggest and modify, building rules or not. (NICOLAU, 1987, p.134-135)

It is important to consider that Piaget and Vygotsky are among the theorists who have contributed to the understanding of games as a methodological proposal for math education. They advocate the student's active participation in the learning process. In this vein, games play an important role in math education, opening up space for the presence of playfulness in school, allowing children's imagination to manifest itself, enabling the development of creativity, initiative and intuition. Therefore, if well planned, games are an effective teaching resource for building mathematical knowledge, as well as for developing observation skills and logical thinking.

From this angle, according to Fiorentini (1996), playful activity is an important means of developing logical reasoning and learning mathematical knowledge in early childhood education, by working with games and play, as well as with the puzzle toy and the mathematical logic blocks game, among other possibilities, by way of illustration. It should be noted that

Play makes it possible for children to develop as a whole, since they are involved affectively, live socially and operate mentally; all in an engaging way, in which the child expends energy, imagines, builds rules and creates alternatives to resolve the unforeseen events that arise in the act of playing. Play facilitates the apprehension of reality and is much more a process than a product. (NICOLAU, 1987, p.77)

In this sense, games in pre-school are a way of thinking about education from a creative, autonomous and conscious perspective, seeking to develop the perception of the being in its physical, psychological and social aspects. Play not only opens a door to the social world and to children's culture, but also enables their development, making them more creative, flexible, articulating rules and attentive to individual differences.



Given the above, at this stage of a preschooler's life, playful activities will provide rich opportunities for the development of logical mathematical reasoning. The teacher can favor activities in which the children interact with the classroom space itself, as this creates an environment that is conducive to the child's learning. For example, the teacher can refer to the elements in the composition of the classroom itself during the explanation, making the children discover numbers, geometric compositions, shapes and sizes of objects in their environment, working on this discovery on the part of the child.

CONCLUSION

In summary, it is necessary to remember that the aim of this work was to highlight the importance of children finding a playful space for the acquisition of reading, writing and mathematics, within the classroom, in the context of early childhood education, because through this literacy environment, they can learn and develop in all their aspects, that is, not only with regard to cognition, but also with regard to other dimensions, such as affective and psychomotor, by way of illustration.

In view of the above, children who are immersed in a literacy environment with playfulness, already in early childhood education, are able to realize sooner, in due course, that they are part of a literate world that they will later need to understand. In this way, the research highlighted that the construction of educational and socialization conditions in childhood begins in the family and continues in nurseries and pre-schools, hence the child's own need for pre-school as another space through which they can be educated and socialized.

With this in mind, considering the social and relational dynamics within the school institution, it is clear that early childhood education is an extremely rich time for achievements, discoveries and learning. Along these lines, the research also revealed that everyone has an extremely diverse set of different intelligences, each of which is sensitive to stimuli that, if applied at the right age, can greatly alter the limits of their possibilities. This understanding is important in terms of understanding the child as a whole, and is, in fact, a sine qua non for anyone concerned with working with such young pupils.

With this in mind, we have tried to carry out a study in order to better understand the evolution of reading and writing, as well as the construction of logical mathematical reasoning



by pre-school children. Thus, it became clear that proposing literacy and literacy activities from early childhood education brings benefits to children if they are planned and developed through practices that focus on play, breaking with the concept of early schooling in pre-school.

In this respect, it is important for educators to always have positive expectations of their students, and to strive to arouse their interest and curiosity without curtailing their spontaneity, highlighting the fact that students, especially in early childhood education, ask for much more than information, they ask for attention. This means working on affections, forming bonds, situations of exchange and sharing in a process of social interaction and mutual influence. To this end, pre-school teachers must organize children's thoughts and ideas creatively, using pedagogical proposals appropriate to their age group, in other words, valuing playfulness in their methodology.

From this perspective, for all the above reasons, early childhood education should provide all children, without distinction, with an integral and dynamic development, so that it is essential, during this period, to offer play activities as a pedagogical tool for the intellectual, social, motor and emotional learning of the student. In this respect, it enables them to build their autonomy and develop a critical attitude and awareness in order to think and analyze the world, interpreting and signifying it in their own way.

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