International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426

Playful Didactic Strategies Applied to the Teaching of Mathematics in Early Childhood Education

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Abstract: ***These Considering that the teaching of mathematics has been studied debated by several scholars concerned with the way that this discipline has been applied in the classroom and the students ' reaction to the methods applied repetitively and mechanically, having as Consequence the lack of interest and apathy on the part of students who are no longer interested in classes that do not offer a meaningful learning that corresponds to the investigative desires inherent to children of early childhood education. Assuming that mathematics is one of the instruments that enable the interaction of the individual autonomously and integrates in the environment in which it is inserted, it is emphasized the importance that the teaching practices of this discipline are well thought out and constructed taking into account the student's experience and the dialogical relationship that must be established between the teacher and his students, thus subsiding new forms of learning that facilitate the child's understanding of this content that is not always Designed with receptivity by the subjects in the classroom context. Considering that Playfulness is characterized as a pedagogical practice, which is configured as a different and fun way of learning, the present work will present an approach of teaching mathematics in early childhood education, with the aim of eviding How playful activities allied to contact with mathematical knowledge can provide opportunities for children to develop the ability to establish approximations to some notions of mathematics present in their daily lives.***

Keywords: Early childhood education; Playful; School; Childhood; Mathematics.

1. Introduction

Based on the assumption that society lives in constant transformation and that the technological advances of today, these tend to awaken much more the interest of students than is usually offered by traditional educational institutions, and we need to reflect on education in this context, considering that traditional practices such as merely expository and dull classes, whose student is a passive subject in the teaching-learning process, whose resources used by teachers are no longer Sufficient to meet the current demand.

According to Gadotti, [1] the education of the early 21st century is in a double crossroads, where on the one hand is the performance of the school system that has not succeeded in the universalization of basic quality education and the other side the new Theoretical matrices have not demonstrated the global consistency necessary to indicate pathways that demonstrate safety in a time of constant transformations.

In confluence with Padilha, [2] the American author Lipman, [2] concludes that the individual is constituted by the norms and values he acquires in social life, so it is essential to cultivate democratic attitudes and dialogical in the school context. Thus, it is concluded that education when centered on the development of human skills and competences, is proven to be the most effective means of constructing dignity, autonomy and transformation of social relations in a common good that favors the creation of human values in the society in which individuals are inserted.

In this sense, the performance of the school and its faculty, should be focused on the formation of the individual endowed with skills and skills with capacity to decision and production of new knowledge, reconciling the theory and practice of teaching, changing the look that in Most of the time it has always been focused on the practice towards the developed human potential and its autonomous insertion in the environment in which it lives.

To this end, the following concerns arise: what has happened in the school context in relation to the teaching-learning process of students? Why the lack of interest in learning? What is the playful contribution to child development? To do so, these questions will be answered in the course of the work through the discussions and reflections presented in the following topics.

Considering that playfulness is characterized as a pedagogical practice, which is configured as a different and fun way of learning, the present work will present an approach of teaching mathematics in early childhood education, with the aim of eviding How playful activities allied to contact with mathematical knowledge can provide opportunities for children to develop the ability to establish approximations to some notions of mathematics present in their daily lives.

According to Soares, [3] we can conceptuate pedagogical practices as school actions that are realized in the classroom, involving teachers with their students and such actions involve the community in its entire dimension.

Sacristã, [4] defines the pedagogical practice as an action in which the teacher takes for himself the inspiring and reflective function, illuminating the actions in the classroom, where it interferes significantly in the construction of the student's knowledge.

In this sense, the pedagogical practices should not be seen with neutrality, and these are marked by the conceptions of the professors, considering the whole process of teaching learning of the school context, their subjectivities, their values, their Contrasts, being aware of the comprehension of

these in everyday school is indispensable for the production of learning in the educational scenario.

Early childhood education presents itself as the natural space of game and play, thus favoring the conception that the teaching-learning process of mathematical content happens primarily through recreational teaching practices. Thus, the insertion of playful in the form of play in the classroom, allows the student to experience various ways of learning, thus constructing the knowledge itself through their experiences.

2. Methodology

According to Minayo, [5] The methodology can be defined as a reference to address the reality, being these theoretical conceptions of the approach, which allow the comprehension of the reality, where the creativity of the researcher is included Instrument to be used.

In the same line, Bruyne, [6] says that the "methodology should help explain not only the products of scientific research, but especially its own progress, and its demands are never subjected solely to methods but before productivity with respect to the results ".

In this sense, the present work will be developed based on qualitative bibliographic research, dedicating itself, mainly to the analysis of books, articles, theses and texts that address topics focused on teaching practices centered on playfulness as Didactic strategy to promote meaningful learning in the teaching of mathematics in early childhood education, referencing authors and researchers who deal with the topic in question.

To this end, reflections and analyses of data collected through a questionnaire used as a data collection instrument and the interview with teachers who work in early childhood education will be presented, in which the professors will be asked to Importance of the development of meaningful learning, which inspires and encourages the learner to develop the creative, investigative spirit, being the protagonist of the construction of the knowledge itself in consonance with its social experiences and Cultural.

According to Gil, [7] The bibliographic research is developed from material already elaborated, consisting mainly of books and scientific articles.

The author cited above emphasizes that, in almost all studies, some kind of research of this nature is required. There are researches developed exclusively from bibliographical sources. This is indispensable in historical studies and in many situations, there is no other way to know the past facts, but based on secondary data.

Regarding the bibliographic research, Marconi and Lakatos, [8] conclude that the bibliographic research or secondary source survey publications, such as books, journals, periodicals, publications and written press, with the purpose of linking the researcher with all written content on a given topic.

According to Gil, [7] to reduce the risk of falsity of data collected, it is prudent for the researcher to ensure the conditions in which the data were obtained, making a thorough analysis of each information trying to evidence Possible inconsistencies.

In view of the authors, references to this point, it is concluded that in the case of bibliographic research, the researcher should be attentive to secondary sources, in order to perceive whether they present data collected or processed in a Mistaken. Since these data are false, these may impair the results of future work.

3. Development

3.1 Significant learning in mathematics teaching

The meaningful learning can be understood based on several authors, and this is characterized by the construction of knowledge based on previous knowledge, which are part of the life experiences of the subjects and of the most diverse forms of Learning.

However, in the case of teaching mathematics in early childhood education, it should be ruled out the learning centered on the traditional model, characterized by mechanical learning, which conceives the idea that the student should receive the information passively, memorizing the content through repetitive reading, without assigning meaning to learning.

On the other hand, meaningful learning is supported by the promotion of a dynamic and playful process, in which educating him with his knowledge and experiences must be conceived as the starting point and arrival.

According to Furtado, [9] The realization of learning happens when the educating effective the reconstruction of knowledge forming new concepts imbued with meanings with the notion of the world, giving him a subsidy so that he can react with autonomy and Dignity in the face of the reality in which it is inserted.

According to the aforementioned author, more and more is not conceived the process of teaching learning as an instrument of repetition and memorization, and much less for the lack of contextualization of it, and this conclusion has a relationship very close to the teaching of Mathematics offered to children in early childhood, in which these have keen curiosity always wanting to know why of all that surround them.

Thus, it is essential that the Teacher act as a challenging agent and mediator of this curiosity so present in the child's world, in the development of playful methodological didactic strategies that can meet the learner in order to remedy all their doubts and at the same time provide a learning that has meaning and that is a contribution to the autonomous and

critical construction of the student's own knowledge, considering the experiences and peculiarity of each subject involved in the process of teaching and learning.

For the child to perceive the mathematical concepts throughout the universe around him without having to learn through repetition, it is noteworthy that the teacher cannot conceive his attribution only in the transmission of knowledge to the learner, focusing on obtaining of knowledge in a pre-elaborated proposal contained in textbooks. This should consider all the experience that the child carries with him, and this experience should be used to enrich the learning carried out in the school context.

Libâneo, [10] points out that the teacher should mediate the active interaction of the learner with the content, including the contents of his/her discipline, but taking into account the knowledge, experience and meaning that the student brings to Classroom, its cognitive potential, its ability and interest its procedure of thinking its way of working.

According to Freire, [11] education does not act with impartiality, this demand values that characterizes a certain perspective of the world in its social context, in which a transformative and liberating pedagogical practice must permeate the action of the individual in society.

Thus, speaking of meaningful learning and playfulness, leaving the innovation of teaching practices in the margins of this discussion, is an immense misunderstanding, being that these increasingly are present in the daily life of the educating that most of the time is beyond the Pedagogical proposals offered in educational institutions.

In this sense, it is perceived a certain resistance of the school and its faculty in adhering to the innovative practices of teaching, in which the convenience of staying in the comfort zone clinging to archaic, dull and tidiness practice has become a premise for teachers and schools hold students accountable for lack of interest, indiscipline and even school dropout.

However, it is perceived that students are no longer interested in lectures based on the pre-established content of textbooks, and this tool is a constant support of some teachers who have a copy as a strategy to discipline the Student and hold his attention in the classroom, not realizing the student's appeal for a more creative class, where he acts as a participatory, active and autonomous subject in the formation of his own knowledge, searching for answers that give meaning to the act of learning.

However, it should be considered in the educational process, the peculiarities of professors and students, aiming at the construction of knowledge based on the dialogical relationship, where the sincere and democratic debate between the diversity of ideas and thoughts should be considered to be of paramount relevance to the mediation between the act of learning and the experiences inherent in the life of each of the subjects involved in the teaching process.

In this sense, it is essential to invest in individual experiences and values, so that a meaningful teaching-learning process is developed, thus enabling the construction of the character of the learner, making it this way, Indispensable the appreciation of the student as an individual who thinks, who enjoys being valued in his individuality and human diversity, that when this is the focus of knowledge, feels full in his emotional and intellectual constitution, feeling pleasure in learning and Share their experiences with those around him.

Thus, it is starting from a meaningful and pleasurable teaching practice, that the student discovers a universe of reasons to remain and integrate into the school context, and this should be stimulated by a welcoming environment that provides him/her to build the Identity in an autonomous, critical and creative way, thus arousing their search for broader knowledge.

According to Nadal; Papi, [12] the role of the teacher can never be denied, in order to present to students information and knowledge built historically and available. To this end, it is not purely to transmit them automatically, and the school has the function of enabling the critical, creative, meaningful and lasting appropriation of the content.

Therefore, the act of teaching and learning currently demands a profound spatial and temporal flexibility, individual and interpersonal, with the reduction of the pre-established conteudist practice by the curricula, adhering to large processes of research and communication.

Thus, it is necessary that the methodological and theoretical assumptions, confirm the pedagogical and teaching practice in structuring the learning of teaching history in the classroom, focused on the exercise of research, research, questioning of research sources and the playful contact with them, thus revealing what is experienced by the subjects in their sociocultural everyday life.

To do so, it is necessary to rethink the teaching practices, in order to seek innovation, thus stimulating in the students a meaningful and pleasurable learning.

According to Bento, 13 the quality of work at school depends mainly on the quality of the activity and the commitment of teachers and students.
In this context, it is observed that today's teacher, to meet the challenges posed to his reality, requires new learning so that his teaching actions become differentiated, thus transforming the critical aspect of the subjects involved in the process of teaching and learning.

Thus, it is under the responsibility of the teacher to plan, administer, monitor and evaluate the teaching learning process, in order to encourage the production of activities authored by students, resulting in meaningful learning.

In conclusion, the act of teaching is not characterized purely in entering a classroom, much less the mechanical action of transmitting knowledge, being such an act a means of optimizing the activities so that the student learns in a pleasurable way and produces the knowledge itself.

3.2 The active methodologies used as a tool in the teaching of mathematics

Teaching methodologies organize and systematize teachers, actions according to the selection of objectives when teaching specific content to students. These methodologies regulate the forms of interactions between teaching and learning, between teachers and students. [14]

Considering that the work developed by the school around the construction of previous knowledge and the individual experiences of the student, this should create mechanisms in order to enable a joint articulation, which will enable the insertion and adaptation of the student in School context and its interaction with learning, enabling an imbued education of signification.

Considering such conclusions, the teacher must play the role of learning mediator, encouraging and challenging the student to develop with autonomy [15] .

Thus, according to Herzer, [16] The student can participate actively in the educational contexts, since he became the center of the process as a creative subject.

In this sense, the teaching-learning process is a pedagogical practice in which human dimensions such as technique, ethics and politics should be considered. Thus, the relationship between the teaching-learning process and the pedagogical practice is a condition of relevant efficacy, considering the objectives proposed in the education plot.

According to Furtado, [9] The realization of learning happens when the educating effective the reconstruction of knowledge forming new concepts imbued with meanings with the notion of the world, giving him a subsidy so that he can react with autonomy and dignity in the face of the reality in which it is inserted.

The insertion of playfulness in mathematics classes, in early childhood education, presents itself as an important tool for the dynamism of the activities developed, making the students build knowledge based on concrete practices and the experience of each Child, providing them with a learning, in which they show great interest in games and play, and this contact with the ludic allows the learner to have an active participation in the teaching-learning process.

In this sense, it is during early childhood education that the child is in full development of his skills and the ability to care. In this way, the games contribute as a strategy for the learner not to disperse, being attracted by the activities linked to his children's universe.

Zatz Halaban, [17] points out that play is of fundamental importance for the child's development, and this is how she explores and discovers the space that surrounds her, learning to interact with the world around her.

Given these conceptions, we conclude that the teacher when using games and plays as a playful activity in mathematics classes, contribute to develop in the child the desire for knowledge and interest in deciphering the questions that are inherent to Childhood, acquiring the ability to clearly understand the activities applied in the classroom and throughout the school context, minimizing the differences of one student to another in relation to the perception of things and learning.

Kishimoto, [18] points out that teaching practice with games cannot be conceived as mere fun or a physical activity used as a way to discipline or distract the class by spending energy. Still according to the aforementioned author, the game should be used as an instrument that enables the physical, emotional and cognitive development, which encourages the child to interact and socialize in the environment in which he lives.

In this same direction, it is observed that in addition to a meaningful learning, the ludic activity in the teaching of mathematics serves as a subsidy for the good relationship between the teacher and the students, also permeating the teaching-learning process, and They must create an interdependence between themselves. Therefore, playing should not be presented in a competitive way for children, but rather as a pleasurable way of discovering knowledge and the learning process.

In the case of the relevance of the work with games as an active methodology in the teaching of mathematics in early childhood education, we perceive the expansion of the debate with the passing of time, about questions about the perception of children and whether they really learn Playing.

Therefore, the teacher should choose the games as a teaching practice in mathematics classes, carefully plan the activities, and should consider the relevance of defining the contents and skills to be worked, planning the Games Taking care that this activity does not become a mere leisure or discipling strategy.
In this context, the active methodologies relate to a learning concept that stimulates reflexive criticism in the teaching process, considering the teacher and student as actors of paramount importance with active action in this process, in which They converge among themselves, the act of Teaching and the act of learning, forming a spontaneous and conscious partnership, thus enabling the construction of knowledge [19] .

However, there is a certain complexity regarding the true attribution of the school and its role in the current scenario in which society is presented in its globalized structure, dynamic, competitive and constantly transformed, where the conventional gives way Place to innovation and to the rotation of conceptions about the act of learning and teaching, in which hyperconnectivity is assimilated almost immediately by the current society, as well as the new concepts and paradigms of the means of production, work relations, Products and services offered.

Therefore, the teaching action constitutes a complex activity, which justifies the concern of constantly reformulating their lesson plans to be developed in the classrooms.

Libâneo [20], points out that the teacher should mediate the active interaction of the learner with the content, including the contents of his/her discipline, but taking into account the knowledge, experience and meaning that the student brings to Classroom, its cognitive potential, its ability and interest, its thinking procedure and its way of working.

However, it is up to the teacher, constantly reconfiguring his teaching practices in the classroom, making a coherent planning with the students demand, so that it raises the learner's standard of knowledge, and at the same time, potentializing the Meaningful learning, enabling a pleasurable interaction with the contents worked, thus arousing the interest of the student to the teaching-learning process.

In this sense, teachers should become strategists when they have to study, select, organize and propose the best tools that facilitate the student's appropriating knowledge [21].

In this context, the learner should be considered as a subject that has the potential inherent to its potential development, which with the help of the teacher as a mediator of learning, this would have the ability to through a significant stimulation Formulate concepts through critical and investigative thinking.

According to Bacich and Moran, [22] The contemporary teacher must undress from egocentric authoritarianism, becoming the protagonism of innovative forms of learning, based on the experiences of students who in turn should be encouraged to build the Self-knowledge with autonomy, pleading the full exercise of citizenship in the environment in which it is inserted.

In this context, the student must be offered a learning that has meaning that offers motivation, and prepares him for life, which will facilitate the assimilation of what is being studied.

Thus, the teacher should permeate this interaction of the student with learning, favoring the interlocution between student, teacher and new learning methods with the help of new methodologies linked to the teaching of history, based on the culture Material.

According to Vasconcellos [23] knowledge has meaning when it enables the comprehension, use or transformation of reality. In this sense, knowledge has as its purpose the collaboration in the integral training of the student, and the teacher must have clarity when proposing the objectives he wants to achieve, having science of the content that will be applied, acting efficiently as mediator which encourages us to educate the investigations and questions necessary to transform social reality.

In this sense, teaching is conceptualizes as a process of systematic, intentional and flexible nature, aiming at acquiring results that are decisive for obtaining integral and citizen learning, which can be defined as knowledge, intellectual and psychomotor skills, attitudes, among others.

According to Vygotsky [24], the scenario in which it is inserted interferes directly in human development. Thus, reflections should be made about the role of the teacher and the school in the educational context as a mediator of new methods to be used in the teaching-learning process, in a context that demands the intensification of new methodologies, being That these are effective tools, with regard to the development of new skills and ability to better interact with students in the school environment and in their community.

The above, considering that education should not be confined to classrooms, as there are countless possibilities beyond the walls of the school, however, it is considered that the benefits of and Lessons based on simple activities, but loaded with symbology that offer meaning to the act of learning, activities these you don't demand the need financial resources for their achievement, such as the visitation in the vicinity of the school, doing the recognition and mapping of the surrounding neighborhood, exploring the history of the local community through storytelling and causes of the older residents, making use of significant tools for the construction of knowledge.

In this sense, school and teacher can innovate in the way of teaching and learning, being this teaching shared with the educating, in which the teacher acts as advisor and mediator of the teaching-learning process, but this must also stimulate the maximum Participation of students, whether this is individual or group participation, inserting new teaching practices.

4. Results and Discussions

The results presented in the present study, point through interviews with teachers of early childhood education, that the teaching of mathematics in childhood education should be worked in a playful way, promoting a learning that has meaning to the child.

Given what was answered by the professors, we perceive the interest and the willpower of the entire team to promote a quality education focused on meaningful learning, in the construction of knowledge based on the experience and peculiarity of each student.

It is also perceived that the school represented by the management team, promotes events in partnership with the pedagogical team and the faculty, in the sense of attracting the family to the school space, promoting actions that create interaction between the school, the parents and the child.

The interviewed teachers showed great interest in working in early childhood education and by the academic training that they have reported to us, they are always qualifying and seeking to improve their practice in the classroom, thinking always in the welfare of their pupils.

5. Conclusion

Considering that society is constantly changing and technological advances, it is not only worth thinking about education in an archaic and obsolete way, despising the criticality and reflection of the students, reducing the learning of them to the reproduction of Concepts pre-established in textbooks and the idea of teacher sovereignty as a keeper of knowledge.

It is perceived that schools in the public education network, still face several difficulties in the sense of developing playful activities in their educational context that meet the demands of students who live nowadays with various forms of learning and of knowledge outside the school context.

It is observed that among the aspects that can negatively interfere in the realization of teaching practices that enable a meaningful and pleasurable learning to the learner are the lack of financial resources for student displacement, in the case of trips Longer and the disauthorization of those responsible for activities outside the school, because of the violence that is present in some localities.

Given this context, being a teacher, is to be close to students not only in the application of the contents, resolution and correction of the exercises that were proposed, knowing how to hear each student help in their difficulties and in their insecurities showing some ways in which the student must seek to be happy.

Based on this differentiated perspective in relation to the teaching practices of mathematics based on playfulness, the student may become aware of belonging, strengthening his ability to seek solutions for endless everyday situations, In relation to their own history, taking into knowledge of realities and social contexts different from what is presented in their daily lives, will enable the learner to broaden their general knowledge, enriching their culture and promoting their integral training from childhood to adulthood.

Thus, the school must strengthen the manifestations of the democratic spirit, participative valuing the autonomy that must characterize the basic education, enabling a collective reflection with theoretical support that expands the view of the professors establishing the balance between theory and practice so that new ideas are grounded. His continued exercise between faculty and students strengthens the educational action and the growth of the commitment and the collectivity.

At the end of this conclusion we want to report that the participants of this study provided important information that contributed to our understanding and so we can cooperate with future studies.

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Questionnaire

For teachers of the Municipal school X of early childhood education about:

1) Do you like working in early childhood education?
2) What do you expect from the school in relation to the innovations that predicts the playfulness in the teaching of mathematics?
3) Do you believe that education transforms the student's reality?
4) What is your training?
5) Do you like the school's pedagogical project?
6) Do parents support the projects developed at school?
7) Is the management team open to innovative teaching practices?
8) Do you feel motivated to work at this school?
9) Do you believe that the practice of ludic teaching can transform the reality of the student?
10) Does the school have a pedagogical team committed to the playfulness and meaningful learning?

Interview (Teachers)

1) Has the school been receptive to the applicability of the ludic as a didactic strategy in the teaching of mathematics?
2) How does the family contribute to the success of school projects in order to prioritize learning centered on the student's welfare?
3) Do children like math classes?
4) How are activities in mathematics classes developed?
5) Can you give an example of a playful activity that you developed with the students and who succeeded?
6) How do students react after this type of activity?
7) How is the interaction of children in this type of class?
8) What does it need to improve so that the work with the playfulness takes effect at school?
9) In what moments do teachers care about bringing life into the classrooms?