Pedagogical methodologies in Science to facilitate the teaching and learning of children with autism

https://doi.org/10.56238/sevened2024.009-017

Jéssyca Ananias Cipriano[1] and Erica Duarte-Silva[2]

ABSTRACT

The present work aims to seek methodologies and interventions through the autoethnographic work of the present researcher, university student and mother of a 5-year-old non-verbal autistic child, to help students, with this condition, in overcoming obstacles, developing socialization, of speech, with Science teaching as its generating theme. The method used was ethnography of school practice, an ethnological method for non-anthropologists with educational objectives. It is based on a review of scientific and educational literature, interviews and fieldwork. The following teaching practices were developed below. Use of applications: (1) Tiny puzzle (memory game; alphabet soup with complete alphabet; association of animal sounds with their shape); (2) Syllabando (forming syllables; learning the shape of letters; forming simple words with syllables). The following educational games were also developed: (1) Dynamics with alphabetic magnet; (2) 'The beach' dynamic; (3) Fruit and vegetable dynamics; (4) Book "Textures of Nature"; (5) Discovering the cycle of life; (6) Using ready-made toys. Finally, the researcher carried out participant observation at the municipal event: 'Autism in our lives'. Aimed at fathers, mothers and guardians of children with autism spectrum disorder (ASD). As a result, it was noticed that after stimulating his skills with the dynamics described, the research participant with ASD then began to have a new skill, hyperfocus starting to ask him to identify the words for him and speak the letters that form these words. This behavior occurs in various places such as food packaging, street signs, at school or at home. Finally, the work established a form of non-verbal communication between the child and the researcher-mother, enabling communication for the autistic child, learning about the world around him and literacy. As for the mother-researcher, this research enabled access to scientific and social events aimed at families with members with ASD, carrying out a voluntary scientific initiation, preparing a course completion work, and completing the undergraduate course, promoting with mastery, new horizons for this very capable family, which needs so little access, from means of communication (verbal, non-verbal) to fundamental rights to education for children and women.

Keywords: Biology, Ethnography, Autoethnography, Early childhood education, Stay at University.

[1] Licensed Teacher. Bachelor's Degree in Biological Sciences, CEUNES-UFES. Center for Research and Pedagogical Practices in Biology Teaching and Environmental Education (NPPBio).

[2] Doctor in Sciences: Botany from UFRGS. Professor of the Degree Course in Biological Sciences at CEUNES-UFES. Department of Agricultural and Biological Sciences (DCAB). Center for Research and Pedagogical Practices in Biology Teaching and Environmental Education (NPPBio).

E-mail: profaericaduartesilva@gmail.com

INTRODUCTION

MEMORIAL

My name is Jéssyca Ananias Cipriano, I am a resident of Guriri Island, north of Espírito Santo, I am in the eighth period of the Bachelor's Degree in Biological Sciences at UFES, São Mateus Campus and I am the mother of Pietro, a 3-year-old boy with autism.

In 2019, I moved to the Biological Sciences course at UFES, São Mateus Campus. At that moment I was still unaware of the pregnancy, but I was already expecting it. Shortly after I found out that I was giving birth to him, I soon had many concerns about how to reconcile raising a baby with the academic journey.

At first I even thought about dropping out of college to be a mother, due to the difficulties I would encounter, but with the encouragement of my mother and my husband, I decided to continue because I realized that I could be a mother and a student. I knew it wouldn't be easy, but it also wouldn't be impossible.

The pregnancy from the beginning was very difficult, because I already had gallstones that caused me pain that could cause contractions that would lead to an abortion. Because of this, constant monitoring has always been necessary. It intensified in the middle of pregnancy with the increase in blood pressure, leading me to have preeclampsia.

The reconciliation of prenatal care and college was very difficult, especially the judgments of some classmates and teachers, but I always did the best I could. At the beginning of the second semester I had to request an anticipation of the leave due to the risks of pregnancy.

In 2020, I was referred to Colatina-ES to have a cesarean section since it could not be a natural birth and Pietro was born. He was born in good health, had only a jaundice that was soon resolved, and was discharged to return to São Mateus.

Pietro has always been a very energetic, cheerful boy and a little different from other children. One of the first major challenges was food. Twenty-seven days after giving birth, I had an inflammatory gallbladder crisis due to numerous stones, which led to emergency surgery. Due to the urgency of the situation, I was forced to remain in the hospital. During this period, I was unable to breastfeed my son due to the prohibition of minors entering the surgical recovery center. It is worth mentioning that the year was 2020, during the COVID-19 pandemic.

We were forced to introduce industrialized food to the baby. Even after a few hours without eating, he simply did not accept food, nor formulas of various brands that were offered, nor porridge, absolutely nothing, which led me to great despair. Out of prudence, I expressed some breast milk and sent it through a relative. That's the only way he fed. Right after this event I didn't find it strange that he rejected food, at least I noticed his food selectivity, and I continued to feed only with breast milk, which is indicated. After 6 months, in the phase of food introduction, I noticed a rejection of some

foods, especially pasty and milky, which made it very difficult to introduce food. With this, pasty fruits were introduced, and then solid food.

We started to suspect he had autism when he was just one year old, but we couldn't get the diagnosis because he was so young. He had food selectivity, liked to line up toys, he didn't play functionally with toys, and he performed repetitive movements. Many of the doctors we went to said that it would develop later.

Throughout this process I continued with my studies, with the main support of my mother and my husband who were always by my side. Sometimes I needed to take my son with me to class, but sometimes I was not so well received by the teachers, because Pietro was a very agitated boy.

As time went by, Pietro did not develop ordinary activities that other children of the same age could. We realized that he had a compromise in his learning and speech, at the age of two we finally got his report.

We thought we would finally be able to give him medical treatment, but even in private care, it is difficult to find professionals specialized in the area. In addition to the high financial cost, which ends up causing little access to them.

At the age of three, I enrolled him in a school for his age, since school is a great space for learning and socialization, which are his greatest difficulties. Even with the report, the place in the school was denied. It is worth remembering that this is illegal. However, we were aware of the rights of people with Autism Spectrum Disorder (ASD) and we claimed their right to regular school, which is guaranteed by law, according to chapter V of the Law of Guidelines and Bases of National Education (LDB), which addresses special education.

Even getting their place thanks to the law, we are faced with a great difficulty of the teachers in knowing how to act to contribute to their learning, due to the lack of interaction with autistic people, not only being a difficulty of this single school more than many.

Many cases of prejudice have happened to him, caused by people who are uninformed about the symptoms present in people with ASD. I have heard many times that my son was rude, that autism was contagious, and many times I have seen him excluded from parties, by adults who were afraid of their child's coexistence with an autistic person.

Today, as a mother of an autistic person, a student and a future teacher, I see the need for an approach in schools and colleges about special needs, such as autism, so that situations like these are less and less frequent in our society.

THEORETICAL FRAMEWORK

Autism spectrum disorder is a condition that affects the neurological part, causing some characteristics that are noticed in early childhood, which may be more persistent in some individuals

than in others. They may have speech delay, repetitive movements, impairment in communication and social interaction, hypersensitivity, learning difficulties, among others.

This condition has individual peculiarities and requires the active participation of parents together with teachers to develop an action plan that provides the best learning, adaptation and social inclusion in the school environment. There is no ready-made recipe to make children with autism spectrum disorder (ASD) learn more easily, however, building trust between teachers and parents, identifying the importance of each of these parts, is already the beginning of this long process (BRUNI & MACEDO, 2013).

During childhood, while the child's development occurs, he tends to associate names with objects, thus identifying them in a functional way, occurring through his experiences caused in the external environment, where the information will be becoming functional knowledge. However, children with ASD have their social interaction poorly developed, making it difficult to use knowledge in a functional way, and objects are used only for sensory function, impairing cognitive learning. The impacts that this condition causes on the child end up impairing their language due to the difficulties in symbolizing and naming objects (CUNHA, 2017).

In childhood, it is where the first signs of ASD are usually noticed, for the medical diagnosis, at the stage when these children will be starting the school phase, in their first years of life, the teacher can have a huge contribution in this process, as he will spend a long period of time with this child. Sometimes parents may even be aware of the signs that the child presents and have doubts about whether or not they should look for a trained professional in the area, so the teacher, when well instructed can help parents in this difficult and often lonely process.

One of the great challenges to be overcome is the development of speech, which strongly contributes to literacy. For Paulo Freire (1987), "literacy is not a play on words, it is the reflexive awareness of culture, the critical reconstruction of the human world, the opening of new paths, the historical project of a common world, the bravery of saying one's word.Therefore, literacy contributes both to social development, which is one of the great factors to be overcome by autistic people, and to their cognitive development.

Regarding the importance of the teacher in this process, it can be stated that:

> The interested teacher can do a lot for children with autism, even if they are not experts in this area. With love, dedication, and patience, you can earn a child's eternal trust. Specific information about autistic functioning is essential tools to guide the teacher in dealing with this student and, above all, to assist him in his development. Some subtleties, such as speaking softly, drawing attention in a delicate way, or helping him understand the content through pictures or images, are always very welcome. To do this, it is important to assess your student's weaknesses and put strategies into practice. Your hard work can make a huge difference in his life. It can take you out of a world with restricted repertoires and redirect you to a universe full of novelty and attractiveness. (SILVA; GAIATO and REVELES 2012, p.55).

Currently, many teachers still do not understand the role played in the face of this social demand, which is why there is a need for continued and specialized training to better serve these students in the classroom, mainly due to the fact that these cases of children with this prevalence have been increasing considerably. (MOURA.; PEREIRA & RIBEIRO, 2023)

When we talk about the role of the teacher during the student's learning process, there are no words to describe its importance, the teacher is not only necessary in educational matters but in life, because he will be present in most of the course of the student's life.

According to Lindomar Batista, "To be a teacher is to invent, it is to reinvent, it is to be creative, it is to be a clown, it is to be an artist, because each class taught is a theatrical play presented, which will be remembered by the students, as it will be the base, the foundation to build the path to success".

People with ASD require formal and non-formal experiences for their learning, and it is necessary to provide diversified experiences in social places, both family and educational, enabling mediation, adaptation and flexibility strategies, always taking into account their particular condition and brain functioning. Since they have difficulty in communication and social interaction. (SILVEIRA; SANTOS & STASCXAK, 2021).

Inclusion is necessary for quality learning, where all individual characteristics are taken into account. A different but efficient approach is essential for education, which is one of the rights present in the 1988 Magna Carta, to be exercised (CONSTITUTION, 1988).

Since inclusion is much more than a way of teaching or learning, it allows socialization and acceptance of individual differences, which are not only present in autistic people, as all people have their own specificities.

A little more about inclusion:

> The inclusion of people with special needs is part of the paradigm of a democratic society, committed to respect for citizens and citizenship, defends the idea that teaching is built on plurality and on the certainty that students are not, under any circumstances, capable of building their knowledge of the world alone. The learning process merges in interaction, from which it develops a human and meaningful way of perceiving the environment. Valuing the peculiarities of each student, serving everyone in the school, incorporating diversity, without any kind of distinction. The inclusion of students with special needs in regular classes represents a historic advance in relation to the integration movement. Inclusion postulates a restructuring of the education system, with the aim of making schools open to differences and competent to work with all learners, without distinction of race, class, gender or personal characteristics. For this reason, all children who are in special schools have the constitutional right to enter the regular system, in classes appropriate to their age. As we have seen, it is essential to promote actions aimed at school inclusion, and can use the use of technologies as strategies that promote autonomy and independence in the participation of people with disabilities or reduced mobility as a facilitating agent. (MOREIRA ET AL., 2022).

Currently, inclusive education has been used by many schools across the country, but many schools do not use this form of education or have it in a precarious way, even though it plays a great

role in the lives of these students. Often this absence is caused by the lack of continuous and specialized training of these professionals, making the approach to this subject indispensable.

Based on the above assumptions, the present work aims to research didactic methods to facilitate the teaching-learning of people with autism in Science. Having the discipline Sciences of Early Childhood Education and Elementary Education, as a generating theme for a holistic education of the human being that encompasses their most urgent needs, as in the case of Pietro, the development of speech, and socialization in the family and at school.

Being the development of speech, the guiding point for the other challenges to be overcome. Practical classes in Early Childhood Education and Elementary School can take Language to a concrete level, facilitating the learning of the first key words for the beginning, or trigger, of speech development. Taking into account, obviously, neurological, psychopedagogical and speech therapy conditions.

It documents in an amateur ethnological way some of the contemporary realities of the Federal University of Espírito Santo, Campus São Mateus, as well as the north of the state. Among them, we can mention the permanence of students in the Public University, the limits and possibilities of university mothers, the prejudices of the traditional school and the teaching trained in the traditional school in the face of diversities, the daily experience of mothers and fathers of autistic children, and the deficient conditions of the public and private health system in the north of the state.

Based on this, an autoethnography of the present researcher, university student and mother of an autistic child will be elaborated using the ethnography of school practice as a method. My son Pietro is 3 years old and has autism. Through autoethnographic work, I intend to rescue our life story, in order to seek methodologies, solutions, interventions that can help you overcome obstacles, such as the development of socialization and speech, having as a generating theme, or medium, the teaching of Science.

The work goes through the following themes that justify it: the permanence of students in the Public University, the limits and possibilities of university mothers, the prejudices of the traditional school and the teaching trained in the traditional school in the face of diversities, the daily experience of mothers and fathers of autistic children, and the deficient conditions found in the health system, public and private, in the north of the state of Espírito Santo.

OBJECTIVES

Based on the above assumptions, the present work aims to elaborate an autoethnography of the present researcher, a university student of Biological Sciences at CEUNES-UFES, Campus São Mateus, and mother of an autistic child.

And it has the following specific objectives: (1) to use autoethnography as a diagnosis of needs for the development of the autistic child, participating in the research, (2) to research didactic methods to facilitate the teaching-learning of people with autism in Science, (3) to have the discipline Science in Early Childhood Education and Elementary Education, as a generating theme for a holistic education of the human being that encompasses their most urgent needs, (4) develop speech, (5) develop socialization within the family and in the school environment.

MATERIALS AND METHODS

MATERIALS

The present study used the following materials: textbooks of Early Childhood Education Sciences, school context, family context, social context as learning elements. And the Laboratory of Instrumentation for the Teaching of Biology (IEB II) of the Degree Course in Biological Sciences of CEUNES-UFES for the acquisition and manufacture of didactic materials henceforth necessary.

The following teaching practices have been elaborated below. For each of them, the following materials were used:

Practice " alphabetic magnet":

Magnetic tape;

Colorful cut-out alphabet;

Polaceal;

Coke court;

Ferromagnetic surface.

Practice "the beach":

Plastic pool or basin;

Toys in the shape of sea animals;

Water;

Sand.

Practice "fruits and vegetables"

Adhesive Velcro ;

Sheet with images of fruits and vegetables printed;

Polaceal;

Coke court;

Pompoms in the colors of the images.

Practice " textures of nature"

E.v.a.;

Satin ribbon;

Instant queue;

Shells;

Stones;

Different types dry leaves;

Sticks;

Dried chestnuts;

Dried flowers.

"Discovering the Life Cycle" Practice

Plastic cup;

Muda plant ;

Water;

Earth.

"Using ready-made toys" practice

Toy Mister Potato Head;

Modeling clay.

METHODOLOGICAL PATHS:

The didactic sequences elaborated will be investigative according to the theoretical-methodological framework.

In order to know what knowledge is taught in Elementary School Sciences, the Elementary School Science textbooks used in the public network of São Mateus-ES, in the school where the research participant studies, will be analyzed.

After the analysis of the Elementary School Science textbook, the didactic materials and innovative teaching practices that we can use to stimulate the speech and socialization of the student in question will be inventoried. The life story of the present author and her son will be considered.

To this end, an oral rescue of their life history will be elaborated, as explained in the theoretical-methodological framework. In addition, animations will be researched in the following media: Youtube Platform, Google, Google Scholar, open TV, pay TV, bookstores, libraries, newsstands.

Depending on the results found, an article will be produced whose annex will contain the materials found and developed.

THEORETICAL-METHODOLOGICAL FRAMEWORK

This work consists of a case study whose methodology used was *ethnographic work*, according to the theoretical-methodological assumptions of André (2020). These are short-term works carried out by *non-anthropologists*, or professionals from other areas of science. They do not have an ethnographic purpose in themselves, but are carried out in order to seek answers to the specific areas of the researchers in question. The ethnography of school practice was used in the present work for the purpose of solving problems in teaching practice, and subsidies for Environmental Education and Ethnobiology. However, the historical and ethnographic value of the data presented here transcended their utilitarian character, and were compiled in this work, with a purpose different from the initial objective.

The methods used in the research were: scientific literature review, fieldwork, and document analysis (André, 2020).

> "A work can be characterized as ethnographic in education, when it makes use of the techniques that are traditionally associated with ethnography, that is, participant observation, intensive interviewing and document analysis. The researcher approaches people, situations, places, events, maintaining direct and prolonged contact with them. How does this contact take place? First, there is no pretense of changing the environment by introducing modifications that will be experimentally controlled as in experimental research. Events, people, situations are observed in their natural manifestation, which makes such research also known as naturalistic or naturalistic" (André, 2015, p.25).

Participant observations in ethnography

In the present study, participant observation was chosen as a working method instead of structured and semi-structured interviews. The works presented here deal with participant observation, intense interviews and, in isolation, some unstructured interviews. Below is Malinowski's insight into data that is difficult to collect through formal interviews. "Malinowski realized that there is a research methodological problem related to the way certain issues are salient in the everyday thinking of members of a society, while others are not. There are things in our social existence that we don't talk about, and that's for a number of reasons. One of them is the fact that we internalize some forms of behavior in childhood and continue to repeat them in social life, in a habitual way, without paying attention to such behaviors. Another is that we learn to avoid talking about—or even thinking about—certain topics, such as taboo issues, even if events in some way related to such taboos are frequent. Malinowski realized that, by staying long enough with a certain social group, the researcher has the opportunity to observe behaviors and social events (such as certain rituals) that would hardly be mentioned in interviews" (TADDEI & GAMBOGGI, 2011).

Taddei and Gamboggi (2011) state that ethnography can be understood as more than a mere methodology, but taken in its sense of intercultural dialogue. The ethnographic experience, as a special instance of the more generic experience of communication, presupposes, from the outset, beings in contextual coexistence, making use of their conceptual and material resources to position themselves in front of each other, in the dialectic between being existentially open (curiosity) and closed (fear).

Meihy (1996) mentions as a presupposition that oral history implies a perception of the past as something that has continuity today and whose historical process is not finished" (Silva, 2004). Subjects construct knowledge based on a determined intention to make articulations between what they know and the new information they intend to absorb. In view of this, writing about the oral history of life is gratifying, it involves a whole historical and sociocultural context from the past to the contemporary. Oral history is indicated as a perspective. It is important for the research of subjects, for whom there is no other access, to answer new questions on old themes, to provoke new subjects and to open new perspectives of analysis (Silva, 2004).

In ethnographic works, André (2020) recommends the arrangement of the results separately from the discussion, so that it is clear which were the results obtained through ethnology from those taken from the literature, since ethnology is primarily based on experiences, and the arrangement of the results is given by narrative and essay texts.

ETHICAL ASPECTS OF RESEARCH

The present study was developed with 1 research participant, a 5-year-old autistic child, and two researchers: the advisor and the student-mother-researcher. There was no participation of the advisor in the application of teaching practices and data collection with the child, who participated in the research and was a minor. The practices were developed by the student-mother-researcher in her family. Pedagogical games similar to those developed at school in the age group of the research participant were developed, and the risks of the research were minimal, such as shyness or fatigue when developing the activities, which were solved with short or long breaks, depending on the process. The research participant performed only the teaching practices to which he or she was attracted. The relatives, the researcher-mother's side, the father, and the grandmother who live in the same household, and in a neighboring household, agreed to the execution of the research and were present in the process as witnesses who estimate that the research participant is a minor. Written agreement (registration of informed consent) of the mother, father, and grandmother.

RESULTS

APPLICATIONS USED

Tiny puzzle (memory game; alphabet soup with complete alphabet; association of animal sounds with their shape).

Syllabando (form syllables; learn the shape of letters; form simple words with syllables).

THE USE OF PHYSICAL GAMES FOR EDUCATION

Different types of physical games were selected to be presented to the research participant, in order to arouse their interest and also their motor coordination, since the differentiated activities help in the children's interest to learn while having fun.

Activities can and should be developed with all students, encouraging reading and knowledge of biology areas can and should be applied to all children, thus making it possible for inclusion within the school, at the same time, everyone benefits from the activity.

Dynamics with alphabetic magnet

For this dynamic we used an alphabet, printed in a colorful way, since it more easily attracted your interest, which was plasticized for greater durability/reuse and we glued magnet on the back, to be placed on some metal surface.

In the presence of an adult, the participant began to pick up the letters and change locations, with each letter he took in his hand, the adult vocalized the sound of the corresponding letter, until Pietro then started to try to imitate the sound, being a great advance, since a great characteristic of the autistic child is not being able to imitate and after the stimulus he started to try to do the same.

This alphabetic magnet was also used to form words, which were vocalized through the adult present, e.g. their own name; the name of objects; the names of animals, and their great interest in hearing and also trying to reproduce these sounds is remarkable.

"The Beach" dynamic

In the present dynamic, we are looking for ways to reproduce the aquatic environment (basin with water) and the terrestrial environment (sand), separating them in a pool. We separated forms with different forms of life in these environments, in addition to reproducing the names of these animals, the main characteristics were also highlighted, and placing them in their habitat showing those that have semi-aquatic, terrestrial and aquatic life.

With each shape he took in his hand we repeated his name, to know if he was really associating the name with the shape of the animal, we said the name of the wrong fish, calling it a turtle, soon it was possible to see in the expression of his face that he understood that it was wrong

and gave me the toy again so that I could say his right name, He insisted on the same toy until we spoke the correct name to him, when I finally pronounced it was the fish, he stopped insisting, demonstrating that he really understood the name of the same.

Dynamics of fruits and vegetables

In this dynamic, fruits known and unknown to the participant were strategically chosen, below each of the figures is written their name, thus stimulating the recognition of the name of the fruit both in its written and oral form, in addition to its visual recognition and the colors that are predominant in each of the drawings.

In order for the proposed activity to be carried out, there was the printing and lamination of a page with the selected figures and a velcro was glued to them and pompoms of colors corresponding to the predominant color of each one were separated, so that Pietro could place each color in its corresponding place, while the adult next to him, First pronouncing letters that form the name and then the verbalization of that word, so that he can hear and associate the visual, oral and written form.

After a while doing this activity daily, we noticed that he started to recognize fruits and vegetables when eating and being interested in fruits that he did not like to eat before, such as melon, which he did not eat before, but when he was in the supermarket and saw the melon, he asked to take it for him, taking our hand to the fruit and feeding it when we offered it to him, Showing an advance even in his food selectivity due to his curiosity, after that, we started to introduce him to several known and unknown fruits.

Book "textures of nature "

Following the idea of the sensory garden, which exercises the five senses, touch, sight, hearing, taste and smell, we prepared a book produced from e.v.a. in which each page contains a different texture work mainly on the tactile and visual sensory part of the student in question, together with the participant, we carried out a tour in the neighborhood where we live so that materials such as stones were separated and collected, leaves, sticks, sand, shells, among others, that were found along the way, including on the beach.

This book was built together with him and was at his disposal so that he could handle it whenever he wanted, without any kind of pressure, this makes him more confident to handle these unknown textures that can bring him some discomfort and sharpens his interest and curiosity, making it possible for him to learn about his difficulties.

The fact that Pietro participates in all stages also allows him to know more about ecology, because he will know where each part present in this book was taken from, which promotes his

knowledge more, because each time he passes by that place again, he will recognize the parts taken from there.

Discovering the Life Cycle

The life cycle can be observed through plants, so we can use a seed to start a life cycle, observe all stages: germination (birth); growth; reproduction and death, being an illustrative way to teach the participant about this cycle present in all living beings.

For this to occur, seeds and a seedling of different species were established, with the help of the adult Pietro actively participated in the whole process, we prepared the seed and the place where the seed would be planted for germination and we established a time within his routine to dedicate exclusively to the care of the seed, at each stage observations were made with him of what was happening.

Always allowing him to handle, water every day, in addition to helping in his organization, it also helps in motor aspects, in his knowledge, to know where the food, fruits, vegetables come from, in addition to participating in the care of a vegetable garden at home, bringing more interest in consuming food, because he sees it every day.

Using ready-made toys

The toy market has a great diversity of toys, so why not use them in the learning process?!

We use the " mister potato" which is a toy that uses playdough to form the parts of its body, to make the participant associate the names of the parts of its body.

Soon, when Pietro made the clay eye, the adult present showed him his eye on his body and so on, after a while of playing, he started to make each part of the doll's body and point out these same parts on his body, especially the hair, which was the part that attracted his attention the most.

PARTICIPATION IN THE EVENT: "AUTISM IN OUR LIVES"

During the writing process of this work, I participated as a listener in the event, autism in our lives, with the speaker Clarisse Schmidt - Neuropsychopedagogy and Human Development, which took place on October 17, 18 and 19, 2023, at Rua Coronel Cunha Júnior, São Mateus-ES.

At the invitation of the university professor who is the father of an autistic child. In order to seek to understand a little more about autism, to promote a better understanding as an atypical mother and especially as a teacher of future students with their singularities that are present within ASD.

Since as teachers, we have to adapt to the student and not the other way around, especially with autistic students who have a unique and different look at seeing the world.

We know a little more about autism and its various ways of learning, among them it was mentioned that the autistic student needs at least two different activities to choose, since they need to have options and power of choice, such as two biology activities, but that have different application methods, because they need to have the feeling of being in control of the situation.

The feeling of not being in control of what is going to happen can generate crises, as well as recurrent noises, can also lead to the same, one way that teachers can deal with the situation is to take the student's attention away from what is causing him discomfort and take him to another situation, notice the signs that precede a crisis, They are essential for effective intervention, preventing this crisis from occurring. Another important factor in times of stress is not to allow the child to associate his leaving the room with that crisis, causing him to repeat the crisis to get out of that situation immediately.

It is extremely important to train people around this autistic person, at home and also at school, so that it is easier to perceive the initial signs, so that they can act, thus preventing the child from hurting himself and not also going through the discomfort of this situation.

Students also need a break between activities, especially if the teacher intends to completely change the type of activity, since the change brings discomfort, as it will be causing the feeling of losing control of that environment that was comfortable.

Autistic people need a social reward, as this leads to a greater chance of this behavior that was rewarded occurring again, for example, When we want to socially reward the participant, we clap our hands and smile so that he understands that his action should be repeated more often, since he was little we realized that this was the form of social reward that he understood the most, However, it could be a compliment to your action among others, depending on the student

In the participation of this event, situations present in our society were mentioned, which shows how much we are not yet prepared to receive and welcome, people with some type of disability or disorder, leading to critical thinking, the subject addressed must be increasingly constant in society so that situations of exclusion and embarrassment are not present in the lives of these people who already go through many challenges throughout their lives.

DISCUSSION

An important step for children to understand biology is the literacy of biological terms, literacy and scientific literacy (GONÇALVES et al. 2015). However, Biology goes far beyond learning terms, especially at the participant's age, so when we can make him understand what his hands, his feet, or where the air he breathes goes, he will be learning about the anatomy of his body, which refers to Biology, for example.

Due to this fact in the present work, we seek to learn Science and Biology while the literacy process occurs, since it would be impossible to separate them since all knowledge is connected, for this will be used: activities, games, applications, among others, to assist in this arduous process.

THE USE OF TECHNOLOGY IN EDUCATION:

Technology can be a great ally to education, when used properly. A major point present in the behavior of the research participant at the moment is restlessness and lack of concentration. In the present work, new ways to circumvent this situation in an efficient way were explored.

Technology as a didactic resource:

> The increasing use of digital media in the academic and corporate environment as a strategy, with an audience increasingly involved with technology, brings to institutions several options of didactic resources to give them the opportunity to respond to individual differences and multiple facets of learning. (BITTENCOURT, P. A. S. & ALBINO, J. P., 2017, p.209)

Taking into account the assumptions, some applications that stimulate the participant's cognitive function were separated. After two months using these applications in a monitored way, Pietro started to vocalize the letters A, E, I, O, when he saw the alphabet, although so far he could not identify the corresponding shape of each letter, it was possible to perceive the association of the sound with the alphabet, leading to the idea that he recognizes that the sound is a member of that group and does not correspond to an object, for instance.

In addition to the literacy aid, his memory was also stimulated, as he was able to relate equal cards, forming the pairs, around twelve cards, totaling 6 pairs, in addition to being able to assemble puzzles with few pieces, which before the help of these games he did not assemble correctly.

THE DEVELOPMENT OF SPEECH, SOCIALIZATION AND LITERACY OF THE AUTISTIC CHILD, PARTICIPANT OF THE RESEARCH

The research participant is a non-verbal autistic child. About non-verbal autistic people it is known that:

> From 20 to 30% of individuals with autism never speak. This percentage is considerably lower than it was about 10 to 15 years ago, thanks in large part to early and intensive intervention. Delays in language acquisition are the most frequent complaints of parents. Usual patterns of language acquisition, such as playing with sounds and babbling, may be absent or rare. (KLIN, 2006).

After stimulating his skills with the dynamics described, Pietro then started to have a new skill, the hyperfocus starting to ask to identify the words for him and speak the letters that form these words, this behavior occurs in various places such as food packages, signs on the street, at his school or at home.

Regarding hyperfocus, we can point out that:

> Children with autism may exhibit different behaviors, some with preserved intelligence, others with hyperfocus on a certain subject. Hyperfocus, then, can be defined as an intense concentration on a subject or task, manifesting itself with emphasis on subjects who exhibit restricted and repetitive behavior (Lovas et al., 2015).

The same occurs when he witnesses a different animal or a toy that represents something he does not yet know the name of, demonstrating a high capacity for memorization, being observed an expressive confusion when pronouncing the wrong letter or word, requiring immediate correction of the correct words, in addition to an extraordinary intuitive intelligence when playing with the fitting of pieces and tasks of his daily life.

> There is evidence of a high rate of occurrence of Intellectual Disability (ID) in Autism Spectrum Disorder (ASD). This evidence is questionable, since, in general, intelligence tests, such as the Wechsler Intelligence Scales, presuppose the ability to understand and/or produce language, a skill often deficient in autism. It is possible, therefore, that by using these tests we are underestimating the intelligence of these individuals. In fact, different groups of researchers have shown that estimates of intelligence in the population with ASD vary greatly depending on the instrument used for assessment. In particular, these authors have argued that individuals with ASD perform better on tests that assess fluid intelligence than on tests that assess crystallized intelligence (SOARES, 2018).

This behavior began to occur through his own interest in knowing the names of objects and letters of the alphabet, leading his hand or finger to the object he wants to know, through his difficulty in pointing out objects, which is one of his present characteristics, since neuroatypical children tend to use the hand of the nearby adult as a tool so that he can get what he wants. Try to get a quote on that.

> Infants and young children with autism can guide their parent's hand to obtain a desired object, without making eye contact (i.e. as if she were obtaining the object by the hand and not by the person). Unlike the child with developmental language disorder, there is no apparent motivation to establish communication or attempt to communicate by nonverbal means. (KLIN, 2006).

The results may seem small compared to what still needs to be worked on, but it is worth remembering that Pietro is still only 3 years old, and is overcoming some of these challenges in a fun way, in his time, at no time did we impose our will on him, he always had the interest to participate. I don't think they're small, but we'll leave it to the panel to analyze. I think we can explore here what are the next steps we have to take at home, at school, in special care, in the speech therapist, and neuropsychopedagogue.

So far we have noticed many advances in relation to his limitations, even if there are still many that need to be worked on, but it is worth remembering that Pietro is still only 3 years old and

is overcoming some of these challenges in a fun way, in his time, at no time did we impose our will on him, he always had the interest to participate.

CONCLUSIONS

Although Pietro is non-verbal autistic, we look for other forms of language, because language is not just talking but the way the person uses it to communicate, which already happens in his way, when he develops his speech he will already know the letters, the animals, the way he writes it and maybe even in the near future, Be writing, soon to match the development close to or even equal to that of other neurotypical children of your age.

More important than speech, he established a means of communication with his mother, and then with his family, making it possible to say what he wanted, learning and teaching, and thus developing.

When the autistic child is stimulated both by the family and at school from childhood, the chances of the delay being overcome become more likely, so we should not treat a child with ASD as inferior to others, as if there was no ability to learn, because their potential is great and we can help to reduce the impacts, always trying to get closer to the level of his age.

We chose to use the term conclusions, and not final considerations, because a teaching method was applied, the didactic literacy games mentioned above, and concrete results were obtained. The autistic child developed a method of communication with the researcher-mother by means of concrete objects, which the child placed and took out of her hand, as the mother spoke the correct word that designated that object. With the presence also of communication mechanisms that the child signaled to his mother, whether the word associated with the object was right, or wrong. In this way, a method of communication between the non-verbal child and his/her educator was generated with the potential to expand to the child's communication with the world, until other means of communication, such as speech and writing, are developed.

This was a work built in the Degree Course in Biological Sciences at CEUNES-UFES, Campus São Mateus, and is a starting point in the perspective of the teaching of Biological Sciences, with a Freirean theoretical framework, focused on the resolution of real social problems, in a fraternal, solidary, and emancipatory perspective. But the work lacks continuity in the hands of professionals specialized in autism, pedagogy, early childhood education, and education and inclusion. It will continue to be developed in the research center, both with regard to the development of teaching practices in Science, Biology and Environmental Education to increase the communication processes between mother and child, but also, the work will be forwarded to specialists in the area, to be reviewed and expanded, in terms, new applications and discussions.

REFERENCES

1. André, M. E. D. A. (2020). Etnografia da prática escolar (7ª reimpressão). Campinas-SP: Papirus.

2. Bittencourt, P. A. S., & Albino, J. P. (2017). O uso das tecnologias digitais na educação do século XXI. Revista Ibero-Americana de Estudos em Educação, 12, 205-214.

3. Brasil. Ministério da Educação. Secretaria da Educação Básica. (2018). Base Nacional Comum Curricular: educação é a base. Brasília: Ministério da Educação, Secretaria de Educação Básica. Recuperado de http://basenacionalcomum.mec.gov.br/wp-content/uploads/2018/12/BNCC_19dez2018_site.pdf

4. Bruni, A. R., & Macedo, L. (2013). Cartilha: Autismo e Educação. Recuperado de https://www.mpsp.mp.br/portal/page/portal/cao_civel/aa_ppdeficiencia/aa_ppd_autismo/aut_diversos/Cartilha-AR-Out-2013%20-%20autista%20na%20escola.pdf

5. Bruni, A. R., Gadia, C., Marco, C. L. S. T., Hora, C. L., Guilhardi, C., Romaro, C., Bordini, D., Portolese, J., Bagaiolo, L., Macedo, L. M., Martone, M. C. C., Andrade, M., Mendes, M. H. T. O. S., & Duarte, V. R. (2013). Cartilha Autismo e Educação. Recuperado de https://www.mpsp.mp.br/portal/page/portal/cao_civel/aa_ppdeficiencia/aa_ppd_autismo/aut_diversos/Cartilha-AR-Out-2013%20-%20autista%20na%20escola.pdf

6. Canto, E. L. D., & Canto, L. C. (2018). Ciências naturais aprendendo com o cotidiano (6ª ed.). São Paulo: Moderna.

7. Constituição (1988). Constituição da República Federativa do Brasil de 1988 (reimpressão de 2016). Brasília, DF: Presidência da República. Recuperado de http://www.planalto.gov.br/ccivil_03/Constituicao. Constituicao

8. Corrêa, M. V., & Rozados, H. B. F. (2017). A netnografia como método de pesquisa em ciência da informação. Encontros Bibli: Revista Eletrônica de Biblioteconomia e Ciência da Informação, 22(49), 1-18. https://doi.org/10.5007/1518-2924.2017v22n49p1

9. Cunha, C. V. de O. (2017). Terapia ocupacional e transtorno do espectro autista: um estudo de revisão bibliográfica (Trabalho de Conclusão de Curso). Universidade Federal do Rio de Janeiro, Rio de Janeiro.

10. Cunha, E. (2017). Autismo e inclusão: psicopedagogia práticas educativas na escola e na família (7ª ed.). Rio de Janeiro: WAK.

11. Duarte-Silva, E., Conceição, J. do R., & Almeida, P. S. (2019). Resgate histórico do Haiti durante a guerra civil (2006-2008) a partir de fotografias de um soldado capixaba na Organização das Nações Unidas (ONU). RAPEES, 3, 107-119.

12. Freire, P. (1987). Pedagogia do oprimido (17ª ed.). Rio de Janeiro: Paz e Terra.

13. Klin, A. (2006). Autismo e síndrome de Asperger: uma revisão geral. Brazilian Journal of Psychiatry, 28(supl.1), s3-s11.

14. Moreira, A. S. M., Novelo, D. C., Candido, L., Brunhoroto, S. F., Pacobello, L. R. N., & Jacomini, M. L. (2022). Educação especial e inclusão. Recuperado de http://ibict.unifeob.edu.br:8080/jspui/bitstream/prefix/3678/1/GRUPO%2012%20-

%20M%c3%93DULO%20ORGANIZA%c3%87%c3%83O%20GEST%c3%83O%20DE%20SISTEMAS%20E%20INSTITUI%c3%87%c3%95ES%20DE%20ENSINO.docx.pdf

15. Moura, P. F. L., Pereira, W. F., & Ribeiro, F. V. (2023). Educação, gênero e cidadania: por uma relação de igualdade (Vol. 1). Científica Digital.

16. Rozário, E. M., Duarte-Silva, E., Teixeira, C. C., & Teixeira, M. C. (2018). A relação homem-natureza nas comunidades tradicionais da Ilha de Guriri: subsídios para a Educação Ambiental (1a ed.). Curitiba-PR: Appris.

17. Soares, J. M. M. (2018). A inteligência no transtorno do espectro autista (Dissertação de mestrado). Universidade Federal de Minas Gerais, Faculdade de Filosofia e Ciências Humanas.

18. Silva, A. B. B., Gaiato, M. B., & Reveles, L. T. (2012). Mundo singular. Fontanar.

19. Silva, A. M. H. D. (2004). Formação de professoras: Resgate da educação feminina católica na Escola Normal São José (1916–1972) (Dissertação de mestrado). Centro de Ensino Superior de Juiz de Fora, Juiz de Fora-MG.

20. Silveira, N. M. G., Santos, L. K. F., & Stascxak, F. M. (2021). Os desafios das crianças com autismo à Educação Inclusiva. Ensino Em Perspectivas, 2(4), 1–12. Recuperado de https://revistas.uece.br/index.php/ensinoemperspectivas/article/view/6620

21. Taddei, R., & Gamboggi, A. L. (2011). Etnografia, comunicação e meio ambiente. Caderno pedagógico, 8(2), 09-28. Recuperado de http://www.univates.br/revistas/index.php/cadped/article/view/832