

"Getting to know my friends": A case report on the use of digital information and communication technologies in early childhood education

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ABSTRACT

The work points out, although in a reduced way, the main concepts and legal supports that govern early childhood education in Brazil and, subsequently, we present the relationship of this stage of basic education with Digital Information and Communication Technologies. We describe the experience carried out in an early childhood education class, with 4 and 5-year-old students, with the use of Artificial Intelligence to work on the field of experience "The I, the other and the we". We conclude the report by proposing that the experience be replicated in different schools in Brazil, public or private, due to its relevance and replicability.

Keywords: Coexistence, Early childhood education, Digital information and communication technologies, Virtual mascot.

INTRODUCTION

This case report is the result of a study carried out in a municipal school in Rio de Janeiro, with students aged 4 to 5 years.

According to Coutinho et al. (2022), from earliest childhood, children are forcibly inserted into a dominant logic, where schools, even if unconsciously, reproduce such neoliberal logic. This logic permeates the lack of self-recognition of who we really are. One way to work on this self-recognition is to develop in the classroom the field of experience "The I, the other and the we".

This report was developed in the following stages: an introduction to the concepts and legal supports that permeate early childhood education, then we deal with how Digital Information and Communication Technologies can and should be used in this stage of education and we report the experience of using Artificial Intelligence to create a Mascot that speaks and in this way, Develop a proposal to work on the identification and self-recognition of students.

We conclude the report with our final considerations about the project carried out and suggestions for replicability, given the increasing ease of using Artificial Intelligence in our daily lives

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EARLY CHILDHOOD EDUCATION: CONCEPTS AND LEGAL SUPPORT

Until the 1980s, the expression "pre-school" was used, which instilled an understanding that Early Childhood Education would be an anticipatory and independent stage of the schooling process. This understanding was complemented by the idea that the "real" school would begin in Elementary School and that preschool would be apart from formal education.

In December 2017 with the implementation of the National Common Curriculum Base – BNCC (Brasil, 2017), which according to Barbosa, Martins Silveira and Soares (2019), had the purpose, theoretically, of unifying the principles and purposes of basic education, with the objective of ensuring the access and permanence of all students: children, adolescents, young people and adults to quality education.

Before the BNCC, several laws and guidelines already dealt with Brazilian education, such as the Federal Constitution – CF (Brazil, 1988), the Law of Guidelines and Bases of National Education – LDB (Brazil, 1996), the General National Curriculum Guidelines for Basic Education – DCNEB (Brazil, 2010) and the National Education Plan – PNE (Brazil, 2014), which will be in force until this year 2024.

According to the BNCC, Early Childhood Education is the first stage of Basic Education and is the beginning and foundation of the entire educational process (Brasil, 2017). Also according to the BNCC (Brasil, 2017), it is not possible to dissociate education from care at this stage of basic education, and in this context, the teachers responsible for children must expand the universe of experiences, knowledge and skills based on the development of enriching pedagogical proposals.

DIGITAL INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) IN EARLY CHILDHOOD EDUCATION

Digital Information and Communication Technologies (ICT), because they are so deeply rooted in Brazilian society, have already become a cultural piece. In the past, people used technologies revering computer languages, but nowadays, people have appropriated this language and automatically re-signify it (Oliveira; Pletsch, 2022).

Unfortunately, the inequality of access to certain technologies in Brazil is very large. A report conducted with students from a pedagogy course at a public university in Brazil indicates that access to the internet network and DICT is not a reality for everyone (UFAL/CEDU, 2020). Usually, the poorest population does not have constant access to basic technological resources such as the internet.

The silence of part of the population involves the denial and non-surrender of basic fundamental rights, among them, the right to education, health, social security, leisure, work, security and childhood (Brasil, 1988).



Silva (2010) states that not properly using new technological resources to provide a complete education for the new generations is to go against the grain of history, reproducing social exclusion and especially cybercultural exclusion.

There is much discussion about the use of DICT in early childhood education. Some documents advocate their use and list the contributions of these technologies to child development, such as UNESCO's document with recommendations for the introduction of DICT in education (2011), UNESCO's Policy Brief on the use of DICT in early childhood education (Kalas et al., 2012) and the position statement of the National Association for the Education of Young Children (NAEYC, 2012). Crook (2008) states that digital information and communication technologies should meet specific learning objectives, such as involving the student in the construction of knowledge, enhancing expressiveness and creativity, promoting interaction, collaborative work, introducing autonomous forms of teaching and allowing the dissemination of the work carried out to the public.

A PROPOSAL TO BRING DICT TO EARLY CHILDHOOD EDUCATION

In early childhood education, the structuring axes of learning and development are interaction and play. According to the BNCC, one of the fields of experiences that should be worked on in basic education is "The I, the other and the we":

It is in the interaction with peers and adults that children build their own way of acting, feeling, thinking and discovering that there are other ways of life, different people, with other points of view. As they live their first social experiences (in the family, in the school institution, in the collectivity), they construct perceptions and questions about themselves and others, differentiating themselves and, simultaneously, identifying themselves as individual and social beings (Brasil, 2017, p. 40).

In this field of experience we have different skills that should be developed with young children, between 4 years and 5 years and 11 months. Among them, we highlight the EI03EO01 - Demonstrate empathy for others, realizing that people have different feelings, needs, and ways of thinking and acting, EI03EO03 - Expand interpersonal relationships, developing attitudes of participation and cooperation, EI03EO04 - Communicate your ideas and feelings to diverse people and groups and EI03EO05 - Demonstrate appreciation of the characteristics of their body and respect the characteristics of others (children and adults) with whom they live (Brazil, 2017).

In order to work on the field of experience "The I, the other and the we" as one of the axes that start the pedagogical work of this stage, in addition to developing the skills mentioned above, the project "Knowing my friends" was developed and applied in a school unit of the municipal education network of Rio de Janeiro. with a class of 4 and 5 year old students.



In general, educators use the threshold of the school year to build in students the awareness of themselves, as well as of the other subjects that surround them and the interactions that must be built in the social space of the school. Imbued with this intention that, during February 19, 20 and 21, 2024, we wrote down the name and physical characteristics of the students of the EI-33 class.

Generally, the classes have heterogeneous characteristics that unfold over time until the consolidation of a profile as a group. In the first days of school, students can arrive in many ways: some more sensitive, tearful about being physically separated from their family for the first time, others more curious, fearless and even excited to unveil the new possibilities that are now in their path.

This richness of emotions demands from us teachers a greater level of empathy and understanding so that they are validated and welcomed in their feelings.

When thinking about this initial adaptation of the children, we started to probe what they liked the most, such as: some place, things, activities... This data was useful for them to perceive our attention to their interests and also to build a relationship of trust and teaching strategies based on this information.

If a student who was more insecure about the new environment revealed that he liked cars or a certain design, these resources were readily applied to provide him with enchantment and security in this new phase. Therefore, we started to create a form with the description of each of the students. Knowing the preferences of a class is a very powerful resource when one is willing to guide a significant pedagogical work.

It was revealed to us that this year's students like flowers, animals, transport vehicles and books, which is a valuable input to guide the planning of classes in order to contemplate in their themes, resources that dialogue with their interests.

On February 22, 2024, a mascot was developed, using Artificial Intelligence (AI), through the *Image Creator from Designer* application, available in *Microsoft's Edge browser*. For its creation, the following phrase was used as a descriptor: "Face of a girl, Disney *Pixar style*, 4-year-old black". The mascot was named Agate (Figure 1).

Figure 1. Agata Mascot developed using Artificial Intelligence



Source: The authors.

To give life and voice to Agata, the *D-ID software* was used, available in <https://www.d-id.com/>. This *web* application performs facial, photo or image animations, converting texts into speech, thus creating the conversational experience similar to human interaction.

In Canva, available at <https://www.canva.com/>, the necessary edits were made to place Agata in a classroom (Figure 2).

Figure 2. Mascot Agata in the classroom



Source: The Authors

With the mascot and the scenario produced, the presentation of the project "Meeting my friends" was developed.

The presentation produced in Canva is available at:

https://www.canva.com/design/DAF22w4Wi9Q/WHffULGBkHRBs_i0RSfwBQ/view?utm_content=DAF22w4Wi9Q&utm_campaign=designshare&utm_medium=link&utm_source=editor.

The application of the activity with the students was carried out in the classroom, on February 23, 2024. For the development of the activity we used the *notebook*, portable speakers and the *Datashow* of the school unit. To start the presentation, the home screen was designed (Figure 3) and then we explained to the class the importance of getting to know ourselves, noticing the differences between our friends,

expanding our interpersonal relationships and valuing the characteristics of our body and especially respecting the characteristics of others.

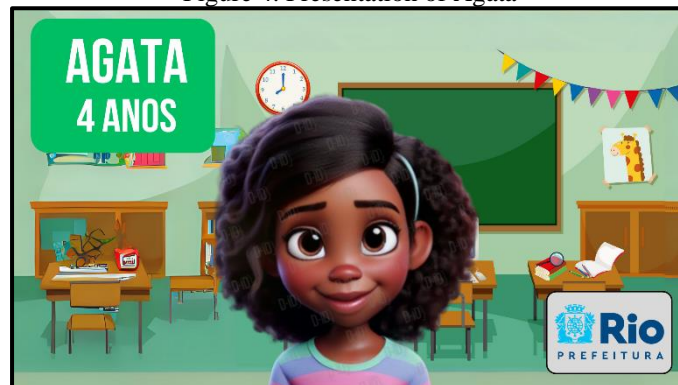
Figure 3. *Getting to know my friends project kickoff slide*



Source: The Authors

After the introduction, on the second page (Figure 4), the mascot Agata introduced herself to the class saying her name, identifying herself as the "virtual friend of the class", talking about her age, her skin color, which has black hair and honey-colored eyes. Agata ends her presentation by asking the students: "Can you figure out the little friend I'm going to describe?"

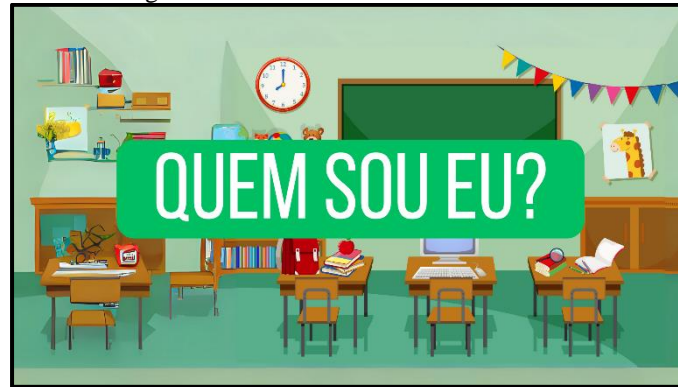
Figure 4. Presentation of Agata



Source: The Authors

On the next slide (Figure 5), we explained to the class that Agata was going to describe a friend and that the students would have a few minutes to find out who the friend was described.

Figure 5. Slide before friend's introduction



Source: The Authors

Next, Agata speaks the description of her friend (Figure 6) and in the box at the bottom appear the words that describe the student. In the example, Agata narrates that her friend is brown, has black eyes, blond hair, her name begins with the letter "C" and she likes flowers.

Figure 6. Friend Presentation Slide

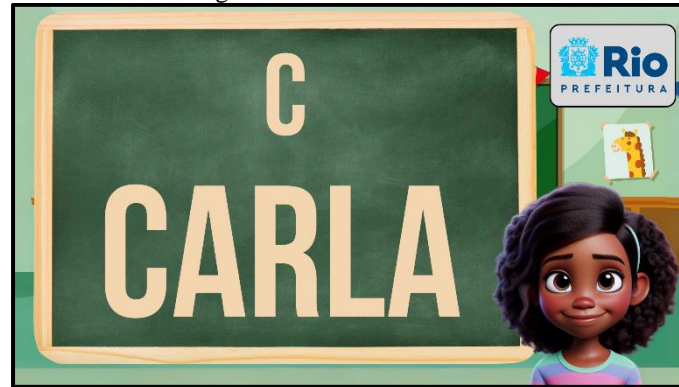


Source: The Authors

After Agata's description, we asked the students who could be their friend, highlighting their characteristics, tastes and the initial letter of their name. It should be noted that at this moment, the student who was being described could also self-identify.

At the end of the students' participation in the identification of the student described, Agata makes the revelation by saying and writing the name of the "friend" (Figure 7).

Figure 7. *Friend Reveal Slide*



Source: The Authors

The process was repeated until all the students were described by Agata and the class had the opportunity to identify each of them. The last "friend" introduced was the teacher of the class.

FINAL THOUGHTS

When working with early childhood education, we must plan in order to develop skills that will be extremely useful throughout the students' lives. 4- and 5-year-olds have a limited amount of time to concentrate on a certain activity. According to Nascimento et al. (2019), this time varies up to 20 minutes for 4-year-olds and up to 25 minutes for 5-year-olds. With the help of Digital Information and Communication Technologies, it was possible to increase the students' concentration time, since they spent 40 minutes in a very participatory way performing the proposed activity.

Throughout the activity, the students were interested, participative and especially curious to find out who would be the next friend described. We can conclude that the project "Meeting my friends" was innovative and a valid strategy for a good coexistence based on the effective participation of all the students involved. It was possible to demystify the use of Artificial Intelligence in the classroom and it was possible to observe how it can cooperate in education from a very young age.

We hope that other schools, public or private, will replicate the proposed activity, so that Digital Information and Communication Technologies, and especially Artificial Intelligence, can be part of the early childhood education classroom in a playful way.



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