

“WHAT IF IT WERE EXPLAINED DIFFERENTLY?”: TEACHING PERSPECTIVES FOR ANIMATED CARTOON AND SCIENCE EDUCATION

“¿Y SI SE EXPLICARA DE OTRA MANERA?”: PERSPECTIVAS DE ENSEÑANZA PARA DIBUJOS ANIMADOS Y ENSEÑANZA DE LAS CIENCIAS

“E SE FOSSE EXPLICADO DE OUTRA MANEIRA?”: OLHARES DOCENTES PARA O DESENHO ANIMADO E O ENSINO DE CIÊNCIAS

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Abstract

This research was carried out with teachers of early childhood education, during the covid-19 pandemic, with the objective of analyzing the professor's perceptions about the use of cartoons as a pedagogical resource in television science classes. We chose the episode Flowers and Fruits of the cartoon The Luna Show because it is relevant in explaining in a dynamic and playful way how the natural process of flower and fruit formation occurs in the reproductive process of plants. Six teachers answered the questionnaire elaborated in Google Forms, with a link forwarded via Whatsapp. The answers were submitted to a Web WordClouds application, to create the word cloud, and the justifications were performed the Content Analysis, emerging the dimensions of "Use of the cartoon as a pedagogical resource" and "Adequacy of the cartoon to the age group of the child". We conclude that the teachers were receptive to the use of cartoons in science classes, but also express their concern with the use of the resource as a "substitute" for the role of the teacher. Emphasizing that the feature makes it possible to explain a scientific context in a playful way so that children understand more easily something that would be difficult to understand, because the language used in

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the cartoon "The Luna Show" arouses interest, curiosity and motivation for investigative learning.

Keywords: Science Teaching; Early Childhood Education; Cartoon; Televised Lessons.

Resumen

Esta investigación se realizó con profesores de educación infantil, durante la pandemia de Covid-19, con el objetivo de analizar las percepciones de los profesores sobre el uso de dibujos animados como recurso pedagógico en las clases de televisión de ciencias. Elegimos el episodio Flores y frutos de los dibujos animados "El Show de la Luna" por su relevancia para explicar de forma dinámica y lúdica cómo se produce el proceso natural de formación de flores y frutos en el proceso reproductivo de las plantas. Seis profesores respondieron al cuestionario preparado en Google Forms, con un enlace reenviado por WhatsApp. Las respuestas fueron sometidas a una aplicación Web WordClouds, para creación de la nube de palabras, y de las justificaciones, se realizó el Análisis de Contenido, emergiendo las dimensiones de "Utilización del dibujo animado como recurso pedagógico" y "Adecuación del dibujo animado al grupo de edad del niño". Concluimos que los profesores se mostraron receptivos al uso de dibujos animados en las clases de ciencias, pero también revelamos su preocupación por el uso del recurso como "sustituto" del papel del profesor. Destacando que el recurso permite explicar un contexto científico de forma lúdica para que los niños comprendan más fácilmente algo que sería difícil de entender, porque el lenguaje utilizado en el dibujo animado "El Show de la Luna" despierta interés, curiosidad y motivación para el aprendizaje investigativo.

Palabras clave: Enseñanza de las ciencias; Educación infantil; Dibujos animados; Aulas de televisión.

Resumo

Esta pesquisa foi realizada com professores da Educação infantil, durante a pandemia da Covid-19, com o objetivo de analisar as percepções docentes acerca da utilização do desenho animado como recurso pedagógico em aulas televisivas de Ciências. Escolhemos o episódio Flores e Frutos do desenho animado O Show da Luna por se mostrar relevante ao explicar de maneira dinâmica e lúdica como ocorre o processo natural de formação de flores e frutos no processo reprodutivo das plantas. Seis docentes responderam ao questionário elaborado no Google Forms, com link encaminhado via Whatsapp. As respostas foram submetidas a uma aplicação Web WordClouds, para criação da nuvem de palavras, e das justificativas foi realizada a Análise de Conteúdo, emergindo as dimensões de "Utilização do desenho animado como recurso pedagógico" e "Adequação do desenho animado à faixa etária da criança". Concluimos que as professoras se mostraram receptivas ao uso do desenho animado em aulas de Ciências, mas também desvelam sua preocupação com a utilização do recurso como "substituto" ao papel do professor. Enfatizando que o recurso torna possível explicar um contexto científico de forma lúdica para que as crianças compreendam mais facilmente algo que seria de difícil compreensão, pois a linguagem utilizada no desenho animado "O Show da Luna" desperta o interesse, a curiosidade e a motivação para a aprendizagem investigativa.

Palavras-chave: Ensino de Ciências; Educação Infantil; Desenho Animado; Aulas Televisivas.

Premises for television classes in early childhood education

The present work aimed to analyze the perceptions of teachers working in Early Childhood Education at a school of the municipal network of Cariacica, ES, about the use of the cartoon *The Show of the Luna* as a pedagogical resource in television classes. This resource was used in science classes to arouse children the curiosity about the occurrence of natural phenomena. For this investigation, we chose the episode *Flowers and Fruits* because it is relevant to explain dynamically and playfully how the natural process of flower and fruit formation occurs in the reproductive process of plants.

We conducted our investigation in the year 2021, during the pandemic stemming from the spread of the Covid-19 virus, a fact that has led to significant changes in people's lives. And in the school environment, it was no different, intensifying the use of alternative resources, leading education professionals to reinvent their practices, learning, and adapting to the use of technological tools for educational purposes.

The urgency in the search for solutions that would allow communication and enable teaching made educational institutions, from Basic Education to Higher Education, resort to emergency remote teaching (ERE), collaborating for the growing use of digital technologies. However, many students and teachers were not contemplated, due to the digital divide caused by the unavailability of equipment, such as computers and routers to access the wi-fi signal, as well as the absence of adequate space in the residence itself to perform work and study.

This situation was aggravated due to the stress of adults and children, combined with a psychological and emotional disorder, triggering symptoms such as irritability, lack of concentration, and demotivation for learning (SOUZA; MIRANDA, 2020; DUTRA-PEREIRA; FILE; BORTOLAI, 2020).

As an alternative and circumstantial measure, the city of Cariacica, ES, through its Department of Education, created the Center for Media of Educação (CEMEC), which allowed the development of television classes, by teachers at this school network, aligned with the National Common Curricular Base (BNCC) (BRASIL, 2018) and the National Quality Parameters for Early Childhood Education (BRASIL, 2018). Similarly, during the height of the SARS-Cov-2 pandemic, several other Brazilian states and municipalities also organized themselves in an emergency manner for television broadcasts of classes.

The choice of television as a means of disseminating information is justified because it is the most present means of communication in Brazilian households (97%), according to the census promoted by the Brazilian Institute of Geography and Statistics (IBGE) in 2011. This survey demonstrates the scope of the resource for the largest number of students, considering the ease of handling and access. In less populous municipalities, the artifice is also relevant, because the internet signal is not always accessible due to the very structure and geography of the locality so radio and television predominate as means of access to information.

On the other hand, because of its high reach, the concepts, values, and behaviors disseminated in television programs influence the orientation of thought, making it difficult for it to rise to more elaborate and independent levels, repressing that subjects respond critically to the impositions of the dominant forces of society, that is, contemporary man has his consciousness shaped by the Cultural Industry (SILVA, 2021). In other words, television programs can contribute to citizen information, but they can also misinform, confuse and manipulate, especially when people are unaware of the reach of television media.

Thus, we disagree with the view of Moran (1993, p. 36) when he stated that "everything that happens on television is educational" and that it is enough for the teacher to make the right interventions and provide moments of debate and reflection. Because teaching actions are conformed to uncritical and reproductivity practices, which will hardly provide moments of discussion and reflection among their students.

Another issue announced is that in addition to having a critical-reflective posture, the teacher needs to know how to choose educational programs and perform activities that develop reasoning and arguments appropriate for the age group of children and adolescents, because when using audiovisual for educational purposes, this needs to go beyond fascination. It is necessary to have educational intentionality!

Fuenzalida (2016) presents another look at the issue of the use of television in education and discusses the need for a public policy that guides the use of the resource in early childhood education. During the pandemic period, with the creation of remote and hybrid classes, the researcher's notes became more evident, such as the need to develop children's television programs that consider the segmentation of ages, contents and forms, socio-emotional intelligence, enjoyment, and entertainment.

In addition to these characteristics, Fuenzalida (2016) argues that the model of reception of programs is constructivist and that this is configured in a new challenge to early childhood education. Within the constructivist model, Fuenzalida (2016) argues that the sequence of activities in an hour of programming should contain the following elements:

[...] brief introduction with children (watch and have fun with the program at home, for example); display of the selected program; possible constructivist activities of children, which should be appropriate to development; valuation, by the teachers, of the expressive and free enjoyment of children and the interaction with the screen; design: free and personal expression about the program; work with clippings and photos, role-playing games, taking photos and recording videos with smartphones and other activities; comments in groups of four children; group comments; encourage the exchange between children and parents, at home, about the assisted program (FUENZALIDA, 2016, p. 76-77).

Still citing Fuenzalida (2016), the experience with the use of television programs in early childhood education must be controlled so that there is child development. In this case, the repetition of programs must consider the layers of meanings it holds. In addition to these aspects, Fuenzalida (2016) highlights that teachers should discuss among their peers the uses and benefits of children's drawing in the classroom. As well, television channel programmers also need to be prepared to recognize quality criteria in this production. Fuenzalida (2016) also points out the need to create a public television channel that articulated the assumptions of early childhood education.

Several other Brazilian author-researchers corroborate these premises, presenting in their reports experiences of situations experienced by professors in their fields of activity. As an example, we can cite Oliveira and Sommerhalder (2022), when they conducted a case study involving the analysis of emergency educational actions implemented during the peak period of the pandemic (the year 2020) in a municipality located in the northwest region of São Paulo. The dilemmas, challenges, and possibilities of work in the context in question were addressed.

The researchers Oliveira and Sommerhalder (2022) considered that technological and digital resources could be configured as tools of support, communication, and closer bonds between the subjects involved in the education and care of babies and young children. However, they warned of the intentionality and recognition of the limitations imposed by emergency early childhood education, which could not go back on the conquests of rights and ways of doing education in childhood.

Bonfim et al. (2022), research professors of the Board of Early Childhood Education of Palmas, TO, reported the challenges and practices developed and experienced by them in the face of the pandemic. Associated with the reports, research was conducted in the documents that guided educational actions during the pandemic period.

The researchers reported that the municipality of Palmas, together with the Municipal Department of Education, created the Palmas Home School tool, to provide blocks of biweekly activities, video classes, and podcasts, by area of knowledge and year, in which the proposals are accessible to families, clearly and objectively.

In addition to this tool, there was the offer of teleclasses through an open television channel and printed activities. Both resources were elaborated by the researchers themselves in association with a small group of teachers, who made the proposals in pedagogical contexts for the recording of the classes, in addition to assisting in the editing, together with the television professionals.

After the research, the authors highlighted that the pedagogical proposals were built to structure learning opportunities for children, through their interaction with the environment and the family itself. The experience lived during the pandemic period led to reflections on the construction of a stronger identity for Early Childhood Education in Palmas, as well as more cohesive and coherent with the principles that dialogue with childhood and children's rights.

In Morais' dissertation (2021) eight video classes produced for the early childhood education public were investigated and critically analyzed, as a result of the partnership between the Department of Education of the city of Uberlândia, MG, the Municipal Center for Educational Studies and Projects Julieta Diniz and University Television of Uberlândia. The video classes were developed during the year 2020 and posted on the city's YouTube channel.

The theoretical basis of the research developed by Morais (2021) involved the conception of child and childhood and the use of audiovisual resources as significant elements for school education. The author inferred that the use of video classes was important to meet the demand of emergencies in which early childhood education was in the time of social distancing and that this situation generated significant reflections on the education needed by children and the use of television resources in the school period.

Silva and Silva (2021) reported that in Amazonas, the Secretariats of Education of the state and municipality of Manaus implemented the Aula em Casa project, which provides content through open television, mobile application, YouTube, Facebook, and a virtual learning environment.

The project was analyzed by the researchers based on the historical-cultural theory and from the narratives of six teachers working in the public network of Manaus about the conditions of offer of the ERE carried out. The researchers concluded that during the ERE the impacts of the pandemic on people's personal lives were not considered. The efforts were focused on the transmission of the content, without considering the importance of pedagogical mediation. This fact revealed the absence of partnership with the school community and understanding of the school's pedagogical project.

In all the articles and dissertations analyzed, which reported the use of television and other technologies in the ERE, the conclusions are unanimous in affirming the precariousness in which the activities were developed, even because of the emergence of program creation. They emphasized that it would be necessary for greater articulation between the school community and managers of television programs to better use pedagogical mediation in the elaboration of programs and the use of television resources.

Cartoons as a pedagogical resource for science teaching

Although Brazilian children born after 1995 are classified as Generation Z and called digital natives because they were born in the period in which the various Digital Information and Communication Technologies (TDIC) are in use, we cannot say that all those born after this period have mastery and use more elaborate digital technologies such as tablets, computers, and smartphones in their daily lives, not least because the socio-economic conditions of most of the world's population do not allow access to these goods.

However, it is observed through different perspectives that the TDIC, beyond the simple use of television in the classroom, can be important allied to the Teaching of Sciences for children, since they contribute to the understanding of educational contents (OLIVEIRA; MAGALHÃES, 2017), either by the images, sounds, and movements or by the diversity of information they can provide. It is in this sense that media resources complement what teachers already do in the classroom, enhancing learning. However, it is necessary to seek, in this scenario, new ways both to learn and to teach, considering different forms of "[...] to live together, to play, to participate, to explore, to express oneself and to know oneself [...]" (BRASIL, 2018, p. 40).

This means that in the fields of knowledge for the development of learning in Early Childhood Education, pedagogical practices must articulate "[...] the experiences and knowledge of children with the knowledge that is part of the cultural, artistic, environmental, scientific and technological heritage, promoting the integral development of children [...]" (BRASIL, 2018, p. 48), or even promote.

[...] experiences in which children can make observations, manipulate objects, investigate and explore their surroundings, raise hypotheses, and consult sources of information to seek answers to their curiosities and questions. Thus, the school institution is creating opportunities for children to expand their knowledge of the physical and sociocultural world and to use it in their daily lives (BRASIL, 2018, p. 43).

The insertion of technologies in the daily school life of children brings as a presupposition the possibility of new fields of experiences when exploring "[...] elements of nature, in school and outside it, expanding their knowledge about culture, in its various modalities: the arts, writing, science, and technology (BRASIL, 2018, p. 38), expanding the senses that go straight to the imaginary.

This phase of child development is characterized by representative intelligence that translates into the child's evocative capacity, that is, symbolically remembering absent objects and situations, evoked by the imaginary, but also by imitation, language, mental image, and drawing (BARBOZA; VOLPINI, 2015).

In other words, through the playfulness present, mainly, in cartoons, television operates in the children's imagination and, thus, children "enjoy the imagination to make representations of roles, to fantasize, imitate, and [...] can [...] awaken in their games [...] emotional feelings, which must be controlled and worked according to each reality." (BARBOZA; VOLPINI, 2015, p. 7). It means that in the symbolic representation of the imaginary to the concrete, the TDIC, through cartoons, entered the school space contributing to improving teaching and learning practices for children (SANTOS, 2019).

Certainly, Science classes for Early Childhood Education can be initiated by the use of cartoons, due to their ability to transmit a message that can be adapted to school knowledge and also because they have characteristics of playfulness, which modify the child's imagination in his phase of cognitive development. It is in this sense that we reinforce the idea of Lorenzatto (2020) and Macedo (2018) that cartoons correspond to a set of visual and auditory incitements, under being a language that articulates knowledge, leisure, pleasure, and learning.

For Silva Júnior and Trevisol (2009), when watching television, the child is receptive to the messages conveyed that he recreates according to his experiences, in a process of understanding expressed information. She embodies what she sees and hears creatively and intuitively, becoming familiar with what has some meaning to her. In this way, it is equally important to provide the child with a program that brings knowledge, through drawings that provide stories that stir the imagination, such as trips that possibly will not be made. Therefore, we agree with Macedo (2018), when he discusses that communication and learning are, in addition to supporting the elaboration of school knowledge, a way to contribute to the formation of the individual, as a citizen.

Thus, qualitative changes in the teaching and learning process happen when we can use technologies for the sake of learning, whether audiovisual, textual, oral, musical, playful, and/or body, in such a way that they can enhance the teacher's praxis and the critical-reflective use of the role of the media in the educational space.

According to BNCC (BRASIL, 2018, p. 61), "By harnessing the communication potential of the digital universe, the school can institute new ways to promote learning, interaction, and the sharing of meanings between teachers and students." Thus, it is possible to think that television media arouse interest in such a way that they should be used as a teaching strategy. So, education needs to build bridges between individuals and these mediating resources of learning. Therefore, it is equally important to invest in the training of teachers so that they can establish familiarity and understand what are the resources that best serve educational purposes.

Given the above, we consider it pertinent to analyze the cartoon "Luna's Show!" (Produced by TV PinGuim in partnership with CEMEC), for addressing concepts that arouse discussions about science, seeking to explain everything that happens around us through a playful, lively and, therefore, more attractive universe (Figure 1).

The cartoon "The Luna Show" was created in 2006 by Celia Catunda and Kiko Mistrorigo, being released only in 2014, with 6 seasons, and has already reached 74 countries. The target audience is children, and the main character is called Luna, a 6-

year-old girl very curious and passionate about science. Luna loves to ask everyday questions using the catchphrase "I want to know!" Luna, along with Jupiter, her 4-year-old brother, and Claudius, her pet ferret, conducts her research at home or on the street, always questioning daily events, and seeking explanations for the phenomena of nature.

Figure 1. Illustrative image of the cartoon "Show da Luna"



Source: Youtube (2021)

We highlight, on this hand, that the cartoon "The Luna Show" brings in its stories information about phenomena that are present in our daily lives, which can have a great influence on the awakening of children's interest in learning in sciences, since the cartoon contains a playful language and images with colors and shapes that attract them (OLIVEIRA; MAGALHÃES, 2017). Oliveira and Magalhães (2017, p. 96), also highlight the importance of learning science from the cartoon "The Luna Show", clarifying that:

The drawing playfully presents Science, deconstructing and (re)constructing the way of "doing" science, therefore, this pedagogical strategy is already a possibility for the scientific education of children from 0 to 5 years old, and with this, it is possible to problematize how this character and this drawing can come to create other meanings about [...] science, as well as this artifact presents itself as a powerful pedagogical tool for discussion of these themes in the school space.

Aligned with this discussion is the idea that to be a good teacher teaching must be carried out through a reflective process about the practice itself. An act that contributes to the understanding that the teaching of science is a possibility for the development of critical thinking in students from an early age. Thus, the intentions of the teaching practice, together with the help of the most diverse didactic resources, can enable students to have a greater understanding of the contents of sciences in their relationship with the experience.

Methodology

The study adopted as research methodology the qualitative approach (BOGDAN; BIKLEN, 1994; LÜDKE; ANDRÉ, 1986) and was an integral part of the activities of the Lato Sensu Specialization course in Science Teaching for the final years of Elementary School - Science is 10! which were held in October 2021, linked to the Teacher Training Center of the Federal University of Recôncavo da Bahia (CFP/UFRB).

The research carried out by one of the specialists consisted of inviting teachers who teach at a Municipal Center for Early Childhood Education of the public network of the municipality of Cariacica, ES. The choice to conduct the research with this specific group of teachers was due to the location of the school being close to CEMEC, which contributed to one of the researchers having access to this group, as she is a collaborating employee of the institution.

In the school 2021 school year, some 172 children enrolled, with a faculty of 33 teachers (17 teachers working the morning shift and 16 in the afternoon shift). Of these groups, only 6 teachers returned the questionnaire prepared in the Google Forms form, with a link sent via WhatsApp. Of the 6 answers, all were obtained from people who identified with the female gender, four of them were in the age group of 36 to 45 years (working the morning shift) and two were aged between 46 and 55 years (working in the afternoon shift).

We explain in the form the importance of research for the educational field and present the Term of Free and Informed Consent (ICF), for agreement of participation in the investigative process. We guaranteed, through the ICF, that the anonymity and absolute secrecy of the answers would be maintained, thus avoiding their identification. We also emphasize the importance of knowing the profile of those investigated for the understanding of the public of teachers who participated in the research and even for the contribution to future research related to this work.

The instrument used for data collection was a questionnaire elaborated in the Google Forms form, containing six questions and the insertion, in the video, of the episode "Flowers and Fruits" of the drawing "The Luna Show!", lasting 12 minutes and 06 seconds.

Mota (2019) points out, in his studies, some promising characteristics for the use of Google Forms in the teaching investigative process, among them: the possibility of access at any place and time; the agility in the collection of information, and aid for the construction of data, because, when the respondent reaches the end of the process, the answers appear immediately, facilitating its use and feasibility in the process of teacher research. Google Forms can also serve for academic and pedagogical practice, as the teacher can use it as a resource to make classes more attractive, dynamic, and participatory.

This investigative instrument was sent to the teachers so that they could freely express their thoughts about the use of the cartoon as an educational resource for the awakening of the child to research in sciences. The questions of the questionnaire were elaborated to analyze what emerges from the teachers' answers, avoiding double meaning or subjectivity (GIL, 2002) (Table 1).

Table 1. The investigative questionnaire was presented to teachers.

1st Section: Questionnaire designed to identify the teacher profile.

- 1- What gender do you identify with? () Feminine () Male () Other () I prefer not to reply
- 2- What is your age group? () 18-25 years () 26-35 years () 36-45 years () 46-55 years

2nd Section: Discursive questions to identify the teachers' perception about the use of cartoons as an educational resource for the awakening of the child to learning investigated in sciences.

- 1- Do you use television classes as a pedagogical resource? () Yes () No () Occasionally.
- 2- What is your opinion about the use of cartoons in television classes?
- 3- From 0 to 10, what would be the grade you would give for the use of television classes as pedagogical support? (Where 0 represents the least important grade and 10 the most important grade)
- 4- Watch episode No. 38 of the cartoon "Show da Luna" and answer the following question. In your opinion, is the episode "Flowers and Fruits" consistent with the age range of Early Childhood Education students? Why?

Source: own elaboration (2021)

Episode No. 38 - "Flowers and Fruits" (available at: <https://www.youtube.com/watch?v=YTUSoj8BEuM&t=435s>), observed by the participating teachers, playfully exemplifies concepts of botany in which the protagonist, after finding an orange blossom, is curious to understand how an orange would be born from that flower.

The answers of the teachers to the discursive questions two and four were submitted to a WordClouds Web application (available for free online access at: <https://www.wordclouds.com/>), to create the word cloud (graphic way of presenting information), to highlight the most significant expressions in the construct of the teachers of Early Childhood Education, as it helps in understanding the meaning of the answers.

The answers to question 2: "What is your opinion about the use of cartoons in television classes?", resulted in the expressions resource, drawing, children, classes. As for the answers to question 4: "Watch episode No. 38 of the cartoon "Show da Luna" and answer the following question. In your opinion, is the episode "Flowers and Fruits" consistent with the age range of Early Childhood Education students? Why? " We found the highlighted expressions: yes, attention, language, age group, children, awakening.

For these questions, we also performed the analysis of the data obtained according to the assumptions of Content Analysis, proposed by Bardin (2011). To this end, we obtained the Analysis Dimensions: "Use of cartoon as a pedagogical resource" and "Adequacy of the cartoon to the age group of the child" (defined in Table 2). Both created a posteriori, according to the semantic approximation of the terms, and after exploratory procedures to measure the analyses to which this work is proposed.

Table 2. Systematization of data

Investigative objective	Dimensions	Definitions
To analyze the perceptions of teachers working in Early Childhood Education about the use of the cartoon O Show da Luna as a pedagogical resource in television classes.	Use of cartoons as a pedagogical resource.	Included in this category are the answers of the teachers regarding their perceptions regarding the use of cartoons as a pedagogical resource for investigative learning.
	Adequacy of the cartoon to the age group of the child.	Included in this category are the answers of the teachers regarding the adequacy of the cartoon to the age of the children.

Source: prepared by the authors (2021)

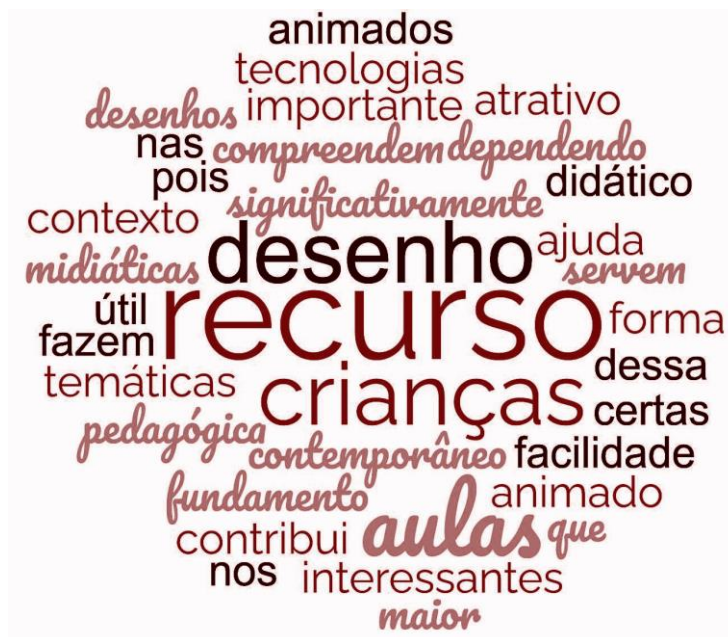
From the analyses, we intended to show the importance of cartoons as an investigative pedagogical resource in science classes, revealed by the reports of the interviewed teachers who use the drawing "The Luna Show" in television classes.

Teachers' perceptions about the use of cartoons as a pedagogical resource

The teachers participating in the research were asked about the use of television classes with the presentation of cartoons as a pedagogical resource. Das answers obtained we elaborate the word cloud recessed in Figure 2. This resource was relevant for the understanding of the teachers' answers, emerging from their justifications for questioning the most expressive terms, namely: resource, drawing, children, and classes, among others no less important.

The analysis of the most expressive terms of the cloud allowed us to observe the significance given by the teachers to the use of the pedagogical resource in their classes. The readings of their answers emerged to understand their uncertainties regarding the learning of children in the period of ERE, a time in which there were incessant searches for the communicational and educational process, causing an increase in the operationalization of TDIC and, inevitably, in the use of television resources and cartoons.

Figure 2. Word cloud from teacher answers for the use of cartoons in television classes



Source: Research data (2021)

These uncertainties were related to the orientations given to the formation of critical thinking of the child who, possibly, would not be acting as an active subject of his learning, that is, whether or not the television resource would contribute to the cognitive development of the school-age child of Early Childhood Education.

From this understanding, we infer that the teachers have a critical and reflective posture regarding the use of technological resources in their classes because they brought in their answers to the questioning and made several arguments that allowed us to understand their perceptions regarding the relevance of the use of cartoons in television classes and their use as a pedagogical resource. Among the answers obtained, all pointed to the relevance of the tool as an educational resource.

Three teachers justified the using their classes by stating that:

[Teacher Denise] - "Media technologies are part of the contemporary context, so cartoons are interesting for classes and serve as a good resource".

[Teacher Beth] - "It's one more resource that helps us a lot".

[Teacher Rafaela] - "A pedagogical tool, because through cartoons children understand certain themes more easily".

The other teachers made relations with the didactic intentionality of the use of the resource, its usefulness and importance, and the interest of the children in learning.

[Teacher Ana] - "When it has a didactic foundation, it contributes significantly to the classes".

[Teacher Suzana] - "Depending on the drawing can be very useful and more attractive to children".

[Teacher Carla] - "Important".

In addition to the understanding of the relevance of cartoons and television resources for the understanding of educational content, we also noticed some resistance on the part of the teachers to the use of television in the classroom. Perhaps this condition is related to the fact that they do not understand the importance of television classes as pedagogical support or because they do not feel prepared for the use of technological resources (LEITE, 2015). This scenario refers to the technical training of teachers working in the classroom, according to the competencies necessary for the exercise of the profession in contemporary times (BRASIL, 2019).

For Silva (2020, p. 144), however, this is nothing new, because "[...] with a conservative characteristic, the school was slow to identify that it would be inevitable to deal with the existence of TDIC in its daily life, always relying on discourses of resistance". It is worth mentioning that technologies bring numerous possibilities to the teaching action because it is possible to carry out activities in the most diverse ways, with more dynamic and interactive classes, which contribute to improving the teaching-learning process.

It is important to highlight that teachers consider television classes as a relevant pedagogical resource since they use them in their classes. This inference is confirmed when we highlight the evaluation that the teachers made for the use of the resource as pedagogical support (question 3 of the questionnaire: "From 0 to 10 what would be the grade that you would give for the use of television classes as pedagogical support?"). From the answers obtained we identified that all teachers recommend the use of television classes as an educational tool.

This fact reveals the importance of studies such as these for their awakening in the mediation of the teaching-learning process in sciences, because, as Martines et al. (2018, p. 3) affirm.

The use of technologies by itself does not represent pedagogical change, if it is used only as technological support to illustrate the class, what becomes necessary is that it be used as a mediation of learning so that there is an improvement in the teaching-learning process.

In other words, the use of interactive and playful tools opens a range of possibilities for educational activities in the classroom from questions that involve multiple knowledge, especially about nature (OLIVEIRA; MAGALHÃES, 2017). Implicitly, the resource can provide interaction and fun, allowing us to know other cultures, new places, and scientific phenomena in a playful, colorful, and moving way. However, it is worth mentioning that "the teacher must be clear of this information and demonstrate it when composing the didactic objectives of the use of the resource, contemplating what is necessary to develop in students for the good use of technologies" (SILVA, 2020, p. 148).

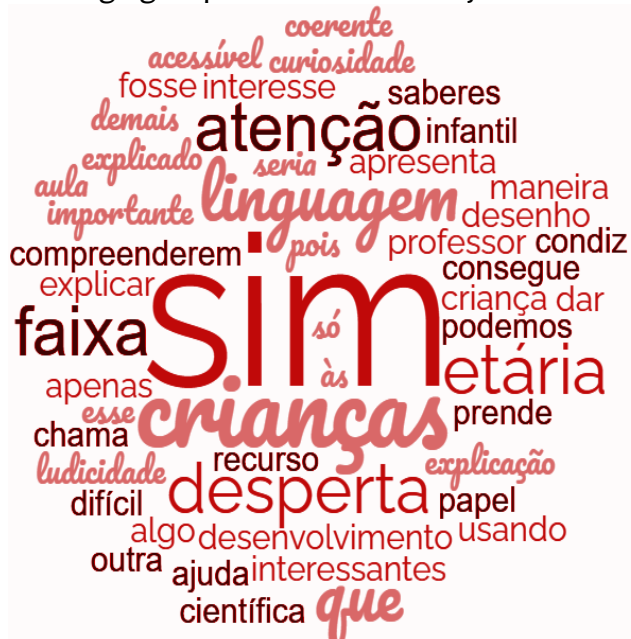
The data obtained from the questions presented are significant because they point us to the fact that there are still teachers who disregard the importance of having a simple and more accessible resource in schools. This reality may be covered by the inadequate infrastructure of schools, and that, often, teaching professionals do not have another technological, playful, and interactive resource such as television.

Teachers' perceptions regarding the adequacy of the cartoon "The Luna Show" to the age group of the child

To understand the perceptions of the teachers investigated regarding the adequacy of the cartoon "The Luna Show" to the age group of children in Early Childhood Education, they were asked to watch episode No. 38 "Flowers and Fruits" and justify their answers. The episode deals with knowledge related to the physical, chemical, and biological properties of the flowers until the emergence of the fruits.

The justifications of the teachers are presented in Figure 3, in their most significant terms, revealing their relevance from the units yes, attention, language, age group, children, awakens, as more expressive elements of their coherence and adequacy as a pedagogical resource to Early Childhood Education.

Figure 3. Cloud of words from the teachers' answers for the coherence of the cartoon "The Luna Show" to the age group of children of Early Childhood Education



Source: Research data (2021)

The teachers stressed that the use of cartoons needs to have a didactic foundation, that is, pedagogical intentionality so that it does not become a mere distraction. In other words, the teachers emphasized in their justifications that the cartoon "The Luna Show" is a relevant and interesting resource for television classes and science education of child viewers, from the meaning of its use, as well as due to the educational practices developed in the episodes.

[Teacher Ana] - "Yes. It draws the child's attention and **arouses** curiosity".

[Teacher Carla] - "Yes. It helps in the development of **language** and other knowledge".

[Teacher Beth] - "Yes, because it presents a **language** accessible to the **age group** of the child, and the drawing by itself holds the **attention** and **arouses** interest".

[Teacher Suzana] - "Yes, because we cannot use only this resource to explain to **children** that the role of the teacher is very important.

[Teacher Rafaela] - "Yes. Because it can give a scientific explanation, using playfulness for children to understand, something that would be difficult for them if it were explained in another way".

[Teacher Denise] - "Yes, it's coherent. It matches the **age range** of the **children** and is very interesting for the class."

In general, we can infer that the answers of the teachers lead to the understanding that the cartoon "The Luna Show", by using playful methods of research in the episodes to answer the various questions of the character, can contribute significantly to the Science classes, provided that it is used as a pedagogical practice that develops in moments of interaction and reflection appropriate to the age of the children. That the cartoon is a pedagogical resource that helps in the process of cognitive development of the child, mainly due to its dynamics of interaction, color, and playfulness, when associated with the themes of knowledge.

We deduce, in this sense, that the teachers' understanding of the adequacy of the cartoon for Early Childhood Education involves the use of the audiovisual resource as a technology for educational purposes and not only as a mode of entertainment.

According to Santos (2016), the idea of using television for the sake of education means taking advantage of educational programming for learning and reflective thinking of children from an early age. That is, through these activities, the teacher can offer students significant experiences, which collaborate with the Teaching of Sciences for their growth and personal and socio-emotional development, placing the child as a participant subject in the elaboration of knowledge.

Finally, we conclude that the teachers bring a differentiated, critical-reflective look at the use of TDIC, especially for the use of cartoons as pedagogical support in television classes. The teachers were receptive to the use of the resource, but also revealed their concern with the use of the resource as a "substitute" for the role of the teacher, emphasizing that, many times, through the use of the resource it becomes possible to explain a scientific context playfully, so that they can more easily

understand something that would be difficult to understand, because the language used in the cartoon "The Luna Show" arouses interest, curiosity, and motivation for investigative learning.

Considerations

The referral of this research began with the context of the pandemic in 2020, with the use of TDIC as a possibility of continuity to the educational process in the period of Emergency Remote Teaching. At the same time, there was the creation of the Center for Media Education of Cariacica (CEMEC), in the state of Espírito Santo, which developed television classes to contribute to the educational process of children in social isolation.

The discussion about the perspective of the teacher of Early Childhood Education, regarding the use of the cartoon "The Luna Show", as a pedagogical resource in television classes, is a possibility to motivate children's interest in investigative learning in science with meaning for students. This resource is fundamental to support the pedagogical practices of professionals working in Early Childhood Education.

Given the information obtained from the questionnaires answered by the 6 teachers of Early Childhood Education, this view became even clearer, although we still have professionals who do not use television classes as an audiovisual resource. However, this scenario has been transforming, in which there is an increase in the use of TDIC as a complementary pedagogical practice for teaching work, which requires the development of continuing education courses on the subject because it is not enough just to present television programming to the child. It is necessary to present a context and the elaboration of didactic sequences on the theme in a coherent way so that learning occurs.

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