

## ENVIRONMENTAL EDUCATION AND THE ABANDONMENT OF DOMESTIC ANIMALS: A BIBLIOGRAPHIC STUDY TO UNDERSTAND SOCIAL AND HEALTH IMPLICATIONS

### EDUCAÇÃO AMBIENTAL E O ABANDONO DE ANIMAIS DOMÉSTICOS: UM ESTUDO BIBLIOGRÁFICO NA COMPREENSÃO DE IMPLICAÇÕES SOCIAIS E DE SAÚDE

### LA EDUCACIÓN AMBIENTAL Y EL ABANDONO DE ANIMALES DOMÉSTICOS: UN ESTUDIO DE LA LITERATURA PARA COMPRENDER LAS IMPLICACIONES SOCIALES Y DE SALUD

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#### ABSTRACT

Environmental Education provides the construction of values and knowledge with the aim of preserving the Environment, an asset of common and collective use. Thus, through formal and informal spaces, people acquire new knowledge regarding this topic, the subject of wide debate in academic and scientific circles. The present study aimed to correlate brief concepts of Environmental Education and its interface with the abandonment of domestic animals; the role of the School in the formation of society and the application of the Didactic Sequence as a methodology for building knowledge. This is a bibliographic, descriptive and exploratory characterization study, with a qualitative approach, carried out between the second half of 2023 and the first quarter of 2024. Nine articles were analyzed for its preparation, selected from the "Periódico Capes" website, the SciELO Platform and from the FUCAMP notebooks. For the investigation, the following criteria were considered: main theorists; pedagogical actions proposed for Science teaching; Environmental education; target audience; research field; concepts of the Environment and Legislation relating to environmental protection and animal management. Therefore, it is clear to guarantee the maintenance of life, as well as the animal's well-being and the preservation of the planet, it is necessary that the environment is in balance and is being protected. This requires the collaboration of the community and the action of the Public Authorities in its preservation.

**Keywords:** Abandonment. Domestic animals. Environmental Education.

#### RESUMO

A Educação Ambiental (EA) propicia a construção de valores e conhecimentos com intuito de preservar o Meio Ambiente, um bem de uso comum e coletivo. Assim, por meio de espaços formais e informais, pessoas adquirem novos saberes com relação a este tema, objeto de amplo debate no meio acadêmico e

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científico. O presente estudo teve como objetivo correlacionar breves conceitos de EA e sua interface com o abandono de animais domésticos; o papel da Escola na formação da sociedade e a aplicação de Sequência Didática como metodologia para a construção de conhecimento. Trata-se de um estudo de caracterização bibliográfica, descritiva e exploratória, com abordagem qualitativa, realizado entre o segundo semestre de 2023 e o primeiro trimestre de 2024. Foram analisados nove artigos para sua elaboração, selecionados no Periódico Capes, na Plataforma SciELO e nos Cadernos da FUCAMP. Para a investigação, considerou-se como critérios: principais teóricos; ações pedagógicas propostas para o ensino de Ciências voltadas à EA; público alvo; campo de pesquisa; conceito de Meio Ambiente e a Legislação referente à proteção ambiental e manejo de animais. Portanto, é evidente que para garantir a manutenção da vida, bem como o bem-estar animal e a preservação do planeta, é necessário que o meio ambiente esteja em equilíbrio e seja protegido. Isso requer a colaboração da comunidade e a atuação do Poder Público na sua preservação.

**Palavras-chave:** Abandono. Animais domésticos. Educação Ambiental.

## RESUMEN

La Educación Ambiental (EA) proporciona la construcción de valores y conocimientos con el objetivo de preservar el Medio Ambiente, un bien de uso común y colectivo. Así, a través de espacios formales e informales, las personas adquieren nuevos conocimientos sobre este tema, objeto de amplio debate en los círculos académicos y científicos. El presente estudio tuvo como objetivo correlacionar conceptos breves de Educación Ambiental y su interfaz con el abandono de animales domésticos; el papel de la Escuela en la formación de la sociedad y la aplicación de la Secuencia Didáctica como metodología de construcción del conocimiento. Se trata de un estudio de caracterización bibliográfica, descriptiva y exploratoria, con enfoque cualitativo, realizado entre el segundo semestre de 2023 y el primer trimestre de 2024. Para su elaboración se analizaron nueve artículos, seleccionados de la Revista Capes, la Plataforma SciELO y la Cuadernos FUCAMP. Para la investigación se consideraron los siguientes criterios: teóricos principales; acciones pedagógicas propuestas para la enseñanza de las ciencias; Educación ambiental; Público-objetivo; campo de investigación; concepto de Medio Ambiente y legislación relativa a la protección del medio ambiente y la gestión animal. Por tanto, está claro que para garantizar el mantenimiento de la vida, así como el bienestar animal y la preservación del planeta, es necesario que el medio ambiente esté en equilibrio y protegido. Esto requiere de la colaboración de la comunidad y de la acción de las Autoridades Públicas en su preservación.

**Palabras clave:** Abandono. Animales domésticos. Educación Ambiental.

## 1 INTRODUCTION

On today's society the debates regarding the environmental issues are highlighted between the scholars and the environmental supporters. The anthropic actions throughout the history were realized in a predatory and abusive way, unleashing questions about the damage and consequences caused on the nature. For this matter, the Environmental Education brings possibilities to reverse harmful doings and ensure the planet's lifetime for this generation and future ones.

On this perspective the Environmental Education portrays countless subjects, among them prevail the waste, recycling, soil contamination, climate changes, water crisis, global

warming, habitat loss and the destruction of the ecosystem, rising of sea levels, soil depletion and large scale deforestations harm the planet's fauna and flora.

As far as the humanity began to comprehend that the Environment isn't a separated entity, but is actually a vital extension of their existence, so other matters got relevance. In relation to the ecology and the ecosystem conservation, the environmental consequences caused by the abandoned cats and dogs on public streets. Domesticated animals are extremely dependents of humans and can only survive near to them. Sentient beings, have the capacity to feel fear, stress, anger and sadness (Alves; Rehbein, 2022).

Therefore, the abandonment of animals categorizes as a Health Public problematic. Consequently, several disorders can be associated with animal abuse; the wandering overpopulation; transmission of zoonotic diseases; infectious diseases source, focus on leishmaniasis and toxoplasmosis; scabies; animal waste pollution; traffic accidents; fights and bites; noise pollution and also the scattering of garbage caused by the search for food. In this case, with the intention of solving these problems, strategies must become enabled. Such as: Incentive and accountability of the public authorities; adoption; chemical and/or surgical castration; support of Non-Governmental Organizations (NGO) and volunteer job support. For Rocha et al (2018), There is the possibility to take action on the cause and not only on the effect.

According to Bonin, Makiolki and Hulse (2020), abandoning animals is characterized as animal abuse and is also considered a crime, it is a global problem. Then, the ones who abandon must have awareness that their behavior harms themselves and contributes with the public space degradation.

Today Brazil has a stray cats and dogs population that increases even more because of the uncontrolled breeding of these animals. Due to the omission of the public power and the society, Non-Governmental Organizations (NGU) and activists tend to be overwhelmed with these activities. So it is necessary the unity and collaboration of every part so the health and balance of the environment are guaranteed as well as the human existence that depends directly on that.

From this point of view, the school after the family is the institution with the biggest character and behavior formation of a citizen. Therefore, working on thematic classes like Environmental Education and responsible pet ownership, or Environmental Education and pets can be useful for the whole society, because children and young people besides being multipliers of knowledge they'll be adults that will shape the future society.

Thereby, the present study had the goal to correlate brief concepts of the Environmental

Education and its relation with the abandonment of domestic animals; The role of the School on the society training and the application of Didactic Sequence as the method for the knowledge construction.

## **2 THEORETICAL REFERENCE**

The Environmental Education is a journey, a process where values and knowledge are built by people whose goal is the conservation of the Environment, a good of common and collective use. The environment needs to be ecologically balanced because is essential for the conservation and survival of the human species (Alves; Rehbein, 2022). Before the environmental problematics of climate crisis, water crisis, creation of a mass waste and social damage of lower classes, it's necessary take actions that lead to habits change and sensitize people to alter the way they relate with nature, enhancing the conservation, the care and preservation of planet Earth (Bonin; Makiolki; Hulse; 2020).

Since the colonization period, the Environment of the Brazilian territory is considered as a source of wealth. They used to explore the land and labor, destroying the natural habitat of dozens of wild species which originally lived in forests, seas, rivers and mountains, far away from the human beings and with conditions to live free and independent. Over time, as far as their closest ancestors were selected and genetically modified by mechanisms of artificial selection they lost their capabilities of hunting and defending in natural environments becoming intrinsically dependent of human beings, occurring the process called "domestication" Alves; Rehbein, 2022).

It is known by the name of "domestic animals" non-human animals that live together harmoniously with human beings. They have distinct biological and behavioral characteristics that allow a full coexistence, but requiring care according to their own species (Alves; Rehbein, 2022). According to Bonin, Makiolki and Hulse (2020), domestic animals are sentient beings, in other words, beings with the capabilities to feel emotions like fear, anger, anguish and stress.

Furthermore, listing some domesticated fauna specimens such as dogs; cats; parakeets; cockatiels; fish; turtles; horses; iguanas; mice, among others. Finally, they're the ones that don't repel the human presence and have characteristics that place them in the close relationship of interspecific dependency (Alves; Rehbein, 2022).

Within the concepts addressed by the Environmental Education it's noticed the incipience of the subject "the abandonment of domestic animals on public streets" on the

discussion agenda, in constant expansion, It is a global event that compromises the public health and deserves a bigger highlight (Cella; Queiroz; Pires; 2017). This aspect is called public health or collective health the practices that concern about the human beings' health, the Environment where they live and also the animal health, encompassing all the community components of the urban centers. Therefore, the animals are also part of society (Alves; Rehbein, 2022).

The abandonment of dogs and cats in Brazil has been configured as a common habit which causes severe problems in public health (Rocha *et al*, 2018). It is estimated that the national territory has around 30 millions of street animals, being 20 millions of them dogs and 10 millions of them cats. On the other hand, this fact leads to environmental degradation increasing one of many anthropic action that risk the planet's life for the current and future generations (Alves; Rehbein, 2022).

When an act this big happens to animals, results to: their exposure to climate hazards like extreme heat or cold; fighting amongst themselves causing severe cases of mutilation; pathogen exposure like diseases and parasites (that is worsened by the low immunity due to stress), becoming biological hosts of communicable diseases to humans, called zoonosis (Rocha *et al*, 2018); harming the environment with the overpopulation because they keep breeding; reduction of native animals because of the predation or competition for food; contamination from the animal waste; the risk of animals biting and attacking people; traffic accidents and the soil contamination caused by the garbage dispersion that is often turned over and scattered for the search of food (Cella; Queiroz; Pires, 2017).

As previously mentioned the environment needs to be ecologically balanced for the maintenance of life through the educational instruction in the Environmental Education may enable the attitude change of the society members with the intention to provide protection, care and preservation for the environment we live in. In particular, formal areas like teaching institutions may increase the educational approach about responsible pet ownership, public health and animal welfare that would contribute significantly for the reduction of damage caused by the negative anthropic action.

According to Cella, Queiroz and Pires (2017), the scholar environment is where best promotes the knowledge construction. It must contribute for the formulation of an understanding that decreases the environmental problems guiding to reflections that provide positive actions for the Environment. The school becomes a key role to sensitize students through the approach of some contents, these students become aware of their role in society and

for the Environment, becoming multipliers of the knowledge acquired. From this perspective, there is a critical thinking of reality and a new world conception.

It is considered a teaching process, all attitude and procedure acquired looking for learning as final goal. Through biological and cerebral development mechanisms, as soon as the students become familiar with some topic the odds of success and good performance will increase in the future (Dias; Oliveira, 2020).

A good learning is the one that surpasses expected results, subsidizes the understanding of more complex contents and provides its application and incorporation in the daily life, reflections of an acquired knowledge, that also became part of the cognitive structure from the one who built it (Dias; Oliveira, 2020).

For this purpose, the didactic sequence stands out, a procedural methodology which organizes, articulates and provides contextualized activities, effective characteristics for the improvement of the Environmental Education in educational context (Souza; Vasconcelos; Silva, 2020). Still according with the previously authors (2020, p. 273):

The Didactic Sequence are strategies that enable students to insert themselves inside a context which works over a problematic situation. The learners are treated as the center of the development process of knowledge, the actor on the quest for information and construction of ideas. This technique may be done in modules, must present an introduction to insert the student in the context of the thematic that is going to be worked, provide to them relevant information for the construction of knowledge and also propose an application that is the closest possible of their daily life [...].

From this perspective, the Didactic Sequences are effective approaches that promote the meaningful learning, placing the student in the center of the learning process in addition providing opportunities to build knowledge in an active and relevant way for their lives. Structurally, is categorized as a group of activities which are arranged, structured and connected so they can reach the particular purpose. It must have beginning, middle and end where students and teachers know each step of the process (Souza; Vasconcelos; Silva, 2020).

The worked content must be tied to the reality where the student reside (Dias; Oliveira, 2020). The purpose to introduce to a didactic sequence the topic "responsible pet ownership, abandonment of animals and its relation with Environmental Education and health of the Environment" is exactly to sensitizes the society about their role in the reduction of the abandonment of domestic animals.

As some practical solutions for the previous problematics, Rocha *et al.*, (2018), suggest that the exposure of dogs and cats that are abandoned to a series of suffering, as well as the environmental deployment can be avoided with a public policy that aim to the collection of street animals and their appropriated destination (responsible adoption), allied with castration or sterilization as a way of population control and also measures of Environmental Education that sensitize people in relation to the problems caused by zoonosis and the abandonment of these pets. Finally, in case the Environmental Education is not applied, the problematic tend to be in continuous cycle.

In addition, just collecting dogs and cats is not enough, because they keep breeding and people still abandon them. Besides, the health quality of the collected ones is not ensured. Therefore, government and population must share rights and duties without having omission of both parts for the resolution of this problem (Cella; Queiroz; Pires, 2017). According to Souza; Vasconcelos e Silva (2020), the teachers action is fundamental as a facilitator of knowledge.

In relation to the role of State and Federation with laws formulation and their practical applications, first of all it must be considered that animals are holders of rights, beings worthy of life and special intrinsic needs for their survival (Vasconcelos; Vasconcelos Filho, 2023).

According to Alves and Rhebein (2022) the non-human animals are beings that have the capability of feeling pain, pleasure, sadness and joy emerging the need to sensitize the population with the principles of the animal suffering, abandoning stereotypes that were built over time and reformulating the relationship between man *versus* nature, where animals become valued and acknowledged with dignity and without being susceptible to submission and cruelty by the human beings. Also according to the same authors (2022, p. 1662 apud Carneiro, 2020, s.p.):

It is known that dignity is a concept that is intrinsically linked with suffering, as philosopher Kant used to say, dignity is a intrinsic value that is, not to be the instrument of someone else satisfaction. Dignity is simply the right of no suffering, and animals also have this same right, so there is the human dignity and the animal dignity, there isn't one without the other, they're only difference is the rights to guarantee our dignity are more numerous and complex than the ones related to animals [...] (Carneiro, 2020, s.p.).

Then it is necessary the acknowledgment of some value that is inherent to other kind of life forms where moral becomes a duty that guarantees the integrity, the respect, the preservation and dignity of all beings that belong to the web of life (Alves; Rhebein, 2022).

The Environment has come to be seen as an legal entity in national territory since the Federal Constitution in 1988, entitled as a right not only for current generations but also concomitantly for future ones (Bonin; Makiolki; Hulse, 2020).

The legal protection in favor of animals is a topic that gains more and more visibility nowadays. It is constitutional (Brazil, 1988) and guaranteed by the Article 225 that discuss about the flora and fauna and the ways to respect, protect and promote them, ensuring the perpetuation of their existence (Alves; Rhebein, 2022).

The Article 225 of the Federal Constitution addresses the following explanation: "Everybody has the right of an ecologically balanced Environment, common use property and essential to a healthy quality life imposing to the public authority and community the duty of defending and preserving it for the current and future generations" (Brazil, 1988). However, it is noted inefficiency in relation to financial investments of the State and Legislative of public authority because they appear silent before the situation.

It is necessary to enable alternatives for the solution of problems based on the Environmental Education, working topics about ecology, environmental and natural habitats conservation; Pedagogical strategies for different people in formal and non-formal spaces, as well as the wide dissemination and incentive to the noble causes that aim to our world preservation.

### **3 METHODOLOGY**

The present study is defined as a bibliographic survey of descriptive and exploratory character with qualitative research (Souza; Oliveira; Alves, 2021). Supporting on the review of the systematized literature, proposed by Yin (2016). According with the author above, reviews have the goal of grouping knowledge about certain subject, with the trains of thought and understanding of the authors and their work (Oliveira; Pimentel, 2020).

The construction of the State of Knowledge happened during the second semester of 2023 and the first quarter of 2024. The period set for the data collection was from 2012 to 2022. Nine articles were selected for its preparation through Coordination of Superior Level Staff Improvement (Capes) Journal, on SciELO platform and on the FUCAMP Notebooks. The keywords for the searched articles were: "Science Education and domestic animals"; "Environmental Education and domestic animals"; "Pedagogical action and Environmental Education"; "Pedagogical action and domestic animals" and "Abandonment of domestic

animals on public streets". The criteria considered for the investigation were: theoretical principles; pedagogical actions focused on Science and aimed at the Environmental Education; target audience; research field; concept of environment and legislation regarding the protection of the environment and animal handling.

The data listed on the Chart 1 had to exclude two articles because they were on a different period set. The analysis criteria were theoretical/bibliographic and the discussed results were based on theoretical background.

#### 4 ANALYSIS AND RESULTS

The Chart 1 shows a summary with the main characteristics analyzed on the articles at hand. Expressing the title; authors and publication date; main theorists mentioned; pedagogical actions focused on Science and aimed at the Environmental Education; target audience or the research field; concept of environment and legislation regarding the protection of the environment and animal handling.

**Chart 1** – Main characteristics analyzed in the articles.

Title	Author and Year	Main theorists	Pedagogical actions	Target audience	Environmenta l concept used	Mentioned Legislation s
Perception and attitude of high-school students from a State School unit about the problems caused by the domestic dog ( <i>Canis familiaris</i> ) in Tefé town, Amazonas, Brazil	Cella; Queiroz; Pires (2017)	Soto (2006) Andrade (2015)	Dynamic and structured interviews with the students. Questionnaire with objective and open-ended questions to verify the students' perception about domestic animals, their abandonment and their environmental problem.	60 students from the 1st, 2nd and 3rd years of High School from Tefé Town in Amazonas State, Brazil.	Does not bring definition for the term "Environment".	Does not present any mentioned legislation.
Abandoned dogs and cats: An analysis through notifications and actions of the environmental monitoring	Rocha; Fonseca; Pereira; Silva (2018)	Gomes, (2013)	Environmental Education measures that aim at people's awareness in relation to problems	There was not. It was a documentary research of sheets from the environment	There was no mention about the term "Environment".	Resolution 714 from the Federal Counsel of Veterinary medicine.

sector of Divinópolis Town, Minas Gerais, Brazil			caused by zoonosis and abandonment of animals.	al monitoring sector of Divinópolis, Minas Gerais, from 2011 to 2012.		
Children's and teenagers' awareness about the responsible pet ownership	Borges; Cunha; Silva; Magalhães Júnior; Oliveira; Magalhães; Gonçalves; Lemes; Silva; Souza; Costa; Sousa; Ribeiro.  (2019)	Forproex, (2013)	There were 8 visitors with the presentation of speakers, with several approaches for each two classes about the importance of the responsible pet ownership, emphasizing vaccination care, visits to the vet, deworming, hygiene, animal feeding, expenses, castration; overpopulation, among others.	Teenagers from a State School in Monte Carmelo town, Minas Gerais, students from the 6th year of Elementary School through the 3rd year of High School.	There was no mention about the theme.	There was no legislation mentioned.
The problem of the abandonment of domestic animals and the importance of the citizenship education at Basic Education School of Timbó Grande, Santa Catarina	Bonin; Makiolki; Hulse (2020)	Singer (1975;2012)  Hans Jonas (2006)	Pedagogical discussion involving several daily situations in conversation circles, on field trips, and the coexistence of emerging problems around school and community suburbs. Realization of a thematic workshop. Data collection based on a closed-ended question survey. Proposals for	20 students from 6th year of the Elementary State School of Basic Education in Timbó Grande town in Santa Catarina State. Students were around 11 to 12 years old.	Environment as the public good and not individual. Holder, when in balance, of important conditions for the sustainable development of human life. Place where one lives. Planet.	Article 225, Federal Constitution of 1988.

			action presentation.			
Science Education: Didactic sequence approach on the first years of Elementary school	Dias; Oliveira (2020)	Ausubel, (1983; 2003)	Informal conversation, observation of illustrations, reading of small sentences and texts and the results verification. Class planning, observation and verification of plants, animals, temperature change, cartoons and games	99 children between 6 to 12 years old, all students from the first years of elementary school, at a school located on the Fluminense region in Rio de Janeiro.	There was no definition for the theme "Environment"	There was no legislation mentioned.
Environmental Education and Science Education: the trash as a topic of a didactic sequence in chemistry classes	Sousa; Vasconcelos; Silva (2020)	Motokane, (2015)	A mixed questionnaire was applied, formed by four open-ended questions and one multiple choice question; Classes about the Didactic Sequence content; Reapplication of the questionnaire and qualitative evaluation of the students' performances of the proposed activities in the didactic sequence listed on the notebook field.	02 (Two) classes of the 1st year of High School, a total of 33 students of a Public School from Belém city, in Pará state.	Associates the Environment to the term "Nature".	No legislation mentioned.
The constitutional duty of formulation and implementation of public policies that protects domestic	Alves; Rehbein (2022)	Donaldson e Kymlicka (2011)	Does not present pedagogical practice. It is about a bibliographic research which points out the conclusion that	Bibliographic research through reading of books, scientific articles, theses and dissertations	Environment determined as a collective common good. Collective legal good. Public-law entity. Nature. Common good	Federal Constitution of 1988, Article 225. Federal Constitution 88, chapter VI, Title VIII. 5th

animals which were abandoned in urban areas			the public authorities must be responsible for the protection of the Environment.	about the topic at hand, annotations and summaries were used.	that is connected with the health rights.	Article of the Clause LXXIII of the Federal Constitution /88. Article 129, Clause III of the Federal Constitution 1988. Article 23, Clause III, Clause VI and Clause VII of the Federal Constitution /88. Article 170, Clause VI. Article 174, 3rd Clause, Title VIII. Article 24, Clause VI and VIII of the Federal Constitution /88. Ordinance number 93, 2nd Article, Clause III, July 7th 1998, from Brazilian Institute of the Environment (IBAMA). Law 9,605 of 1998; Law 24,645 of 1934. Law 5,197 of January 3rd 1967. 6th Article of the Federal Institution/88. Article 196 of the Federal Institution/88. Ordinance 1,138 of
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						May 23rd 2014, from The Ministry of Health. Own state laws (p. 1661).
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Source: made by the authors (2023).

From the articles in Chart 1, 6 of them weren't able to present all the analysis criteria but only 1 was able to present it. The article named "Perception and attitude of high-school students from a State School unit about the problems caused by the domestic dog (*Canis familiaris*) in Tefé town, Amazonas, Brazil" treats as the title says, about the perception and attitude of students before the problems caused by the abandoned domestic animals as well as the possible solutions for this problem, data collected through systematized interview samples randomly obtained (Cella; Queiroz; Pires, 2017). Most of the students agreed that abandoned dogs cause environmental problems, and had critical thinking when answering that the responsible adoption would be a viable alternative for the reduction of street animals that contribute for the environmental degradation.

Among the main environmental problems, stands out the overpopulation; the reduction of native animals that originally used to inhabit the ecosystem; environmental contamination caused by animal waste and garbage dispersion; traffic accidents; besides being biological hosts of communicable diseases to humans such as leishmaniasis and rabies (Cella; Queiroz; Pires, 2017).

The analyzed text "Abandoned dogs and cats: An analysis through notifications and actions of the environmental monitoring sector of Divinópolis Town, Minas Gerais, Brazil", it is noted a documentary research of sheets from the environmental monitoring and sanitary surveillance sectors of Divinópolis, Minas Gerais (Rocha; Fonseca; Pereira; Silva (2018). The numerical data collected in the text about abandoned dogs and cats as well as the main characteristics of the general condition of the animal when someone calls the entity requesting for assistance. As some measures for the resolution of the problem, it is suggested the Environmental Education for a better population awareness.

Therefore, it is needed to adopt measures that sensitizes people in general so they won't abandon, providing knowledge about the consequences of this action, where they would be the

most affected ones. The lack of access of free vet services or the ones financed by the Federal State are also factors that must be worked in this Environmental Education perspective.

The article “Children’s and teenagers’ awareness about the responsible pet ownership” (Borges et al., 2019), approaches a didactic sequence methodology: Dynamic lectures with professional guests who have competence to administer the subject. This is interesting because makes the class more dynamic, and in a certain way catches the attention of students since they consider the generated movement around the lecture is "something new". This way, subjects about responsible pet ownership; vaccination; periodical visit to the vet; de-worming; hygiene; appropriated animal feeding; castration and the consequences of abandonment may be worked with the purpose of conveying this knowledge that is often neglected.

“The problem of the abandonment of domestic animals and the importance of the citizenship education at Basic Education School of Timbó Grande, Santa Catarina”, emphasizes the role of the school is to shape critical, aware and responsible citizens for the future, an education focused on the preservation of the concepts that everyone is part of the Environment, and there is no human or animal health without environmental health thus that triad that composes the public health must be in perfect harmony for a ecologically balanced Environment and beneficial for the maintenance and perpetuation of life (Bonin; Makiolki; Hulse, 2020).

The interconnection between the animal, human and environmental health is important to promote sustainability and conservation of the Environment. The human health is directly linked to the animal health, because a lot of diseases can be transmitted from animals to humans, they’re known as zoonosis. In addition the animals’ health also influences the Environmental health, because the preservation of species, soil, vegetation and other structures is fundamental for the maintenance of life for this and next generations.

The article, “Science Education: Didactic sequence approach on the first years of Elementary School”, addressed the didactic sequence through the students’ daily routine contents in the area of science like heat exchange and plants, also showing that the didactic sequence is an efficient education mechanism (Dias; Oliveira, 2020).

The article entitled: "Environmental Education and Science Education: the trash as a topic of a didactic sequence in chemistry classes" It was addressed a didactic sequence preparation for Science education aimed at the concentration area of Chemistry, about trash and the formation of solid waste. In conclusion the didactic sequence was an efficient method for

the sensitization of students, showing the didactic sequence can be a great tool to promote education (Sousa; Vasconcelos; Silva, 2020).

The didactic sequence provides pedagogical subsidy that promotes learning sequentially working on contents that are part of the students daily routines. On the perspective of the Environmental Education, it is possible to sensitize the students about the importance of the preservation of the Environment stimulating students to have critical attitudes that leads to the maintenance of the ecological balance and the global life perpetuation.

Finally, the article "The constitutional duty of formulation and implementation of public policies that protects domestic animals which were abandoned in urban areas" it addresses the Environmental Education, domestic animals and relevant legislations that “*tours*” from the old Federal Constitutions concepts to the new ones, detailing laws, municipal and state autonomies before the Federation and making it clear the public policies neglect these problems while their duty should be taking the responsibilities of caring for the animals’ health and Environment (Alves; Rehbein, 2022).

The responsible pet ownership in Brazilian territory involves rights and duties that must be adopted in collective and individual ways. Pet tutors must treat their animals with respect and dignity providing shelter, food, basic cares with health, essential subsidies for the survival of the ones that lost their capacity and autonomy of living in nature.

The abandonment of animals is considered a crime in Brazilian territory according with the Federal Constitution of 1998, on the law no. 9,605 expects to punish those who mistreat animals (Brazil, 1998). The importance of people’s awareness about the responsible pet ownership is fundamental as well as the consequences caused by the abandonment of animals.

The articles that were excluded because of the different period set had the title, authors and publish year respectively as: No. 1: The abandonment of dogs and cats: An overview of the situation of street animals and confrontation actions for philanthropic Institutions in Gama a city in Distrito Federal – Brazil, from Isabelly Goulart Mourão, published in 2023 (Mourão, 2023). No. 2: The elementary students’ perception about wildlife species and domestic animals at two Schools in Taubaté, São Paulo, from Bárbara Helena Ramos, Elisa Mitsuko Aoyama, Gabriela Dávila Ribeiro and Adriana Mascarette Labinas, published in 2011 (Ramos *et. al*, 2011).

## **5 FINAL CONSIDERATIONS**

The purpose of the text was to reflect and link concepts like Environmental Education, abandonment of domestic animals, the role of the School for the formation of society also the implementation of the didactic sequence to the formation of knowledge. A total of 7 (seven) articles were selected for analysis with predetermined criteria where 6 (six) of them didn't present all the analyzed criteria, only 1 (one) presented it. There was poor availability of the ones focused about Environmental Education, Didactic Sequence and domestic animals collectively.

These findings are warnings that why a pedagogical approach topic is necessary because affects not only schools as an environment of knowledge development but also the community and social issues of short, medium and long-term impact inside the school community. It is considered that this approach of abandonment of domestic animals in the Environmental Education is important to sensitize people to cooperate with the Environment preservation because the analysis and talking points of the Environmental Education usually are natural and not everyday life elements and the intersection proposed between public health and education. In addition, school is the most suitable place for the construction of knowledge and critical thinking about reality it has evident importance for the formation of citizens and for their behavior.

There are several ways of proposing actions of Environmental Education at school and the didactic sequence is one of them because articulates stages that goes from the topic presentation that would be developed up to the students evaluation after its application and the knowledge that was generated by it. Although it is necessary the unity of the public policies and the society for the solution for the abandonment of animals on public streets issue. Besides this analysis which incorporated Environmental Education, public health and school knowledge other approaches are possible for further researches like: actions for the animal welfare, ways to avoid zoonosis, Environmental Education in informal places, activities developed by non-governmental organizations, public policies, among others.

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