



UNIVERSIDAD DE JAÉN
Centro de Estudios de Postgrado

Master's Dissertation/
Trabajo Fin de Máster

**Once upon a time, inspiring true
stories for climate action. An
ecocritical reading to unveil the
environmental educational potential of
children's stories.**

Student: Periañez González, Marina

Tutor: Dr. Nieves Pascual Soler

Dpt.: English Philology

July, 2023

TABLE OF CONTENTS

1. INTRODUCTION AND RATIONALE.....	5
2. CHILDREN'S LITERATURE AND ENVIRONMENTAL ISSUES LINKED TO SDGS ...	8
2.1. Children's literature: Children's picture storybook.....	8
2.2. Literature for the promotion of cross-curricular values: SDGs	9
2.3. SDGs and environmental issues as cross-curricular themes	11
2.4. How environmental issues are conveyed in children's picture storybooks?	12
3. ENVIRONMENTAL ASPECTS TO BE ANALYSED, METHODOLOGY, AND CORPUS OF STUDY	14
3.1. Sustainable environmental culture for climate action	14
3.1.1. The unsustainable development model that has led to an environmental climate crisis	14
3.1.2. Values and behaviours of a sustainable environmental culture for climate action .	15
3.1.3. Concrete sustainable actions for climate change mitigation: recycling and reforestation.	17
3.2. Method of analysis.....	19
3.2.1. Literary analysis from an ecocritical perspective	19
3.2.2. Corpus selection.....	21
3.3. Corpus of study: Giving voice climate action	22
3.3.1. Wangari's Trees of Peace: A True Story from Africa, by Jeanette Winter	23
3.3.2. One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia, by Miranda Paul	24
3.3.3. The Boy Who Harnessed the Wind, by William Kamkwamba and Bryan Mealer	24
4. ANALYSIS.....	25
4.1. Setting analysis	25
4.2. Characters' analysis	28
4.3. Analysis of ecological messages.....	33
5. CONCLUSION	35

6. REFERENCES.....	38
Bibliography	38
Legislation	42
Children's picture storybooks.....	42
7. APPENDIX	43

Abstract

Present-day environmental challenges show the pressing need to achieve a real commitment to environmental sustainability and actions aimed at mitigating climate change. In this sense, in connection with the United Nations Sustainable Development Goal 13, the promotion of desirable ecological principles for climate action from educational contexts becomes of utmost importance. This purpose can be favoured through the use of children's literature that invites children to transfer valuable messages to real life. In the interest of providing primary education English teachers with a selection of literary works with which to respond to current demands, this study is devoted to exploring how three children's storybooks based on true events and personalities address the climate crisis and transmit values and behaviours for climate action. From an ecocritical analysis, we contend that stories can foster in students a concern for the environment, encouraging them to participate in its preservation.

Keywords: Children's storybooks, ecocriticism, environmental values and behaviours, climate change, SDGs, climate action.

Resumen

Los actuales desafíos ambientales muestran la imperiosa necesidad de alcanzar un compromiso real con la sostenibilidad ambiental y las acciones encaminadas a mitigar el cambio climático. Así pues, en conexión con el Objetivo de Desarrollo Sostenible 13 de las Naciones Unidas, se vuelve de suma importancia la promoción de principios ecológicos deseables desde contextos educativos. Este propósito puede verse favorecido a través del uso de una literatura infantil que invite a los niños a transferir mensajes valiosos a su vida. En aras de proporcionar al profesorado de inglés de educación primaria una selección de obras para responder a las demandas actuales, este estudio explora cómo tres cuentos infantiles basados en hechos y personajes reales abordan la crisis climática y transmiten valores y comportamientos para la acción climática. Desde un análisis ecocrítico, sostenemos que las historias pueden fomentar en los estudiantes una preocupación por el medio ambiente, animándolos participar en su conservación.

Palabras clave: Cuentos infantiles, ecocrítica, valores y comportamientos ambientales, cambio climático, ODS, acción climática.

1. INTRODUCTION AND RATIONALE

"We owe it to ourselves and to the next generation to conserve the environment so that we can bequeath our children a sustainable world that benefits all." (Wangari Maathai, 2005, as cited in Oniang'o, 2011, p. 526).

As stated by Wangari Muta Maathai, a Kenyan environmentalist and 2004 Nobel Peace Prize winner (Van Klinken, 2022, p. 156), our current society urgently needs to address environmental sustainability. The environmental crisis that the citizens of the world today are living through is undeniable. Pollution by plastic waste in our oceans and terrestrial ecosystems, the planet's temperature increasing, fires in our forests, soil degradation, drought, or torrential rains are just some examples of the call for help that our planet is making to humans. As Opoku (2015, p. 38) expressed, the current severe exploitation of natural resources cannot continue if we want future generations can likewise meet their demands. We cannot continue accepting cultural values that understand nature as subordinate and at the exclusive service of the human being. Accordingly, Van Klinken (2022, pp. 165-166) mentions the need to foster an attitude of respect for the natural world, perceiving the educational context as an appropriate setting for environmental awareness and education from an early age (Yangali Vicente et al., 2021, p. 4).

The promotion of a sustainable environmental culture that imprints ecologically desirable values and behaviors in students can be favored through literary stories close to their levels and interests. This is additionally endorsed by studies that comprise research from the field of neuroscience, which indicate that literary narratives activate and modify numerous areas of the brain that influence individuals' thinking, emotions, and behavior (Martha Nussbaum, 2005, as cited in Mata Anaya, 2016, p. 51). As we can infer from the above, children's literature can become an ally for the enrichment of ecological behaviors of care and protection in students (Vispo Rodríguez and Leyva Abreu, 2021, p. 57).

All those who have ever been in contact with children's literature know that stories contain valuable messages that have been intended to be transmitted to children in an understandable and close way. Mostly, these messages tend to invite them to transfer to real-life desirable principles. In this sense, the Red Española para el Desarrollo Sostenible (REDS, 2021, p. 95) indicates that the transmission of these ecological principles for sustainability is easier if we make use of positive stories and narratives that, far from being based on negative messages and threats about the future, provide hope and awake individuals' motivation to get involved in climate change mitigation. In line with the ideas of Andricaín et al. (2013, p. 6),

stories do not have the power to change the world, but they can guide people's behaviours and actions toward a better world.

This purpose of supporting children's education to bring about improvements in humanity suggests that teachers consider some cross-curricular values and contents for a more sustainable and just world from all areas, including the English foreign language area. Many of the transversal contents indicated in the educational laws are intimately connected with the well-known United Nations Sustainable Development Goals (SDGs), included in the 2030 Agenda. What is more, the work around these SDGs from the educational context is defended in the preamble of the Ley Orgánica 3/2020, of December 29, which modifies Ley Orgánica 2/2006, of May 3, on Education (LOMLOE). In this research, we specifically focus on the cross-curricular values connected to environmental responsibility to lessen the effects of climate change. Particularly, through children's literature, we seek to contribute to SDG 13 by meeting its target 13.3: "Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning" (REDS, 2021, p. 97).

The environmental orientation of texts, which is crucial at a time when the planet more than ever demands a sustainable environmental commitment, is addressed in more detail by a relatively recent critique known as ecocriticism. According to García Única (2017, p. 81), ecocriticism deals with the connection between the environment and literature, from the commitment to environmentalism. That is why ecocriticism occupies an important place in our study.

Bearing all the above in mind and in line with the purposes of the subjects focused on foreign language teaching of this master's degree, the main motivation of this dissertation lies in trying to contribute to the improvement of the teaching-learning processes. For the accomplishment of this goal, we provide teachers with a selection and a subsequent ecocritical analysis of children's stories to be used in the primary education foreign language classroom. The aim is that, beyond linguistic purposes, they can take advantage of their pedagogical content concerning the ecological values and behaviours as a cross-curricular aspect linked to the SDGs.

In this sense, we select literary works for their environmental worth within the SDGs Book Club Reading Catalogue provided by the United Nations (UN, 2023). The selected stories reflect concern and commitment to the environment. Specifically, the three children's picture

storybooks that form our corpus address local initiatives that have a beneficial impact on climate promoted by iconic and lesser-known characters in countries where English is a second language. Such stories offer students real models of people who struggle in some way to combat environmental threats through sustainable solutions in their countries of origin. Reforestation to increase living spaces and improve the lives of human beings, as well as the recycle and reuse of materials to reduce pollution due to excess non-biodegradable waste will be our primary focus.

The aforementioned considerations guide us to explore in this dissertation how a sustainable environmental culture geared towards climate action is promoted through three children's picture storybooks based on real events. Specifically, among the dimensions of environmental culture, our study focuses on the environmental values and behaviours of the real personalities who appear in these narratives. In this sense, from an ecocritical approach to literary analysis, we argue children's stories can offer real models of action in favour of the climate that fosters in pupils an honest concern for the environment, encouraging them to take daily small steps in that direction.

With regard to the above, our general objective is devoted to exploring how children's storybooks based on true events and personalities address the climate crisis and transmit values and behaviours aimed at mitigating climate change, understood as dimensions of a sustainable environmental culture. This main aim is specified in the following specific objectives:

- Delimit and specify causes and consequences that revolve around the climate crisis that SDG 13 intends to address, as well as environmental values and behaviours for climate action.
- To select and determine a corpus of children's storybooks in the English language based on true stories that contribute to climate action.
- To analyse and specify how such literary works address the climate crisis and convey environmental values and behaviours as facilitators of SDG 13 of climate action from the perspective of ecocriticism.

Attempting to address these purposes, we start with a bibliographic review of the main aspects covered in this dissertation in the interest of achieving an adequate and comprehensive analysis of our corpus. After that, a specific section presents the specific aspects to be analysed, the methodology with which this research will be carried out, as well as the presentation of the corpus. The subsequent ecocritical analysis aims to provide valuable insights into the texts'

didactic potential for raising students' ecological consciousness for climate action. The final sections report on the main conclusions reached, the sources that guided the formation of this dissertation, and some appendices that have been considered relevant.

2. CHILDREN'S LITERATURE AND ENVIRONMENTAL ISSUES LINKED TO SDGS

2.1. Children's literature: Children's picture storybook

As O'sullivan (2023) explains, children's literature alludes to "a broad and diverse range of texts with different addresses, forms, genres, degrees of linguistic and aesthetic elaborateness, and functions" (p. 1). To this, authors such as Gaitán Castro and Mosquera Collazos (2016, p. 137) add that these texts are adapted to the stages of children's development, giving them a leading role in the process of literary reception. Chen (2015, p. 232) simplifies this definition as those books that are read to or by children. Similarly, O'sullivan (2023, p. 4) alludes to the body of texts specifically and deliberately written for children, as well as those deemed appropriate for them.

In line with the above, it is convenient to point out that the linguistic complexity of these texts ranges from books with just a single noun per page to paragraphs composed of more complex sentences (O'sullivan, 2023, p. 1). This has to do largely with an intention on the part of authors to alleviate the existing differences regarding language domain and experience concerning the target audience, adapting language, themes, and formal features to the stage of development, literary skills, interests, and needs of young readers (O'sullivan, 2023, p. 4), resulting in a diversity of genres and styles.

These children's literary texts, following O'sullivan (2023, p. 1), derive mainly from texts written specifically for children, from adaptations of books originally created for adults, as well as from folktales. According to Nikolajeva (2015, p. 3), this type of literature emerged when at some point in the 17th century, childhood began to be considered a special period of life, and literature was understood as a powerful means for their education. In fact, O'sullivan (2023, p.4) indicates that since children's literature began to gain relevance, its main function was fundamentally didactic or doctrinal, with the aim of socializing through the transmission of norms, values, and culture. As Nikolajeva (2015, p. 3) sees it, children's texts have always been related to pedagogy. In this sense, applying a specific language and a simple plot (Chen, 2015, p. 232), children's literature introduces young readers to the knowledge of the world around them while they enjoy literature (Gaitán Castro and Mosquera Collazos, 2016, p. 137).

Once some general characteristics that define children's literature have been addressed, it is essential to focus on children's stories as a narrative subgenre. More specifically, we will delve into the children's picture storybook, which will be part of the corpus to be analysed in this study. According to Malu (2013, p. 11), children's picture storybooks are made up of short texts on appropriate topics for children that tell a story accompanied by significant illustrations that convey emotions and movement. Both text and images are shown as interrelated and complement each other to transmit the messages (Malu, 2013, p. 11) as can be observed in appendix.

Within this type of text, we particularly consider those that include stories based on true events and people. These are classified by some authors as non-fiction literature. In this sense, Hartsfield (2021, p. 2) defines non-fiction as literature based on data that deals with individuals, living beings, events, and natural and social phenomena. Beyond the informative non-fiction subgenre, in this dissertation, we opted for non-fiction narrative. The latter is made up of "biographies, autobiographies, memoirs and titles recounting historical or contemporary events" (Hartsfield, 2021, p. 2).

2.2. Literature for the promotion of cross-curricular values: SDGs

We can underline the existence of certain themes that, beyond belonging to a particular discipline, must be addressed by each of the subjects that make up the curricula of the educational system (Rosales López, 2019, p. 111). Although, following Vázquez Ramil and Porto Ucha (2020, p. 114), such themes continue to seek a specific concretion in the Spanish educational legislation, teachers are called on to select this type of knowledge, skills, and values to link them to the contents of the different curricular areas, bearing in mind their students' maturational and academic level, as well as their interests (Rosales López, 2019, p. 115).

These cross-curricular themes refer to real problems of society, pursuing the transmission of attitudes and ethical values (Esteban Moreno, 2003, as cited in Vázquez Ramil and Porto Ucha, 2020, p. 114). Therefore, Rosales López (2019, p. 111) relates them to relevant aspects of a social and personal nature related to coexistence, human rights, democratic relations, inclusion, gender equality, health, and care for the environment. All these aspects are shown in connection with the Sustainable Development Goals (SDGs) proposed by the United Nations General Assembly in the 2030 Agenda, whose work in schools is recognized in the preamble to the LOMLOE (p. 122871). These SDGs are 17 goals that attempt to address the global challenges we are currently facing, extending the actions taken by the Millennium

Development Goals (MDG) of the United Nations Program. Following Rieckmann (2017, p.7), SDGs intend to foster knowledge, skills, values, and attitudes for students to act as sustainable change agents.

Figure 1

SDG



Source: United Nations (n.d.)

As can be inferred, with views to contribute to the SDGs it is necessary to acquire a series of values that can later be transferred into actions that demonstrate our ongoing commitment to the world and the living beings that inhabit it. In this sense, Quiles Cabrera and Sánchez García (2017, p. 65) consider education in values as a transversal axis that must be impregnated in all subjects in the school context, forming part of what teachers know as cross-curricular themes.

Although there is still an undervaluation of children's literature regarding its pedagogical and moralistic use (Mata Anaya, 2016, p. 48), authors such as Mateos Jiménez et al. (2014, p. 100) allude to the relevance of using stories as a teaching resource in the classroom to promote education in values. This is reinforced by Pulimeno et al. (2020, p. 18), who suggest the employment of literature as an educational strategy as it fosters the acquisition of values and benefits the development of young people by stimulating reflection on behaviours.

As expressed by Andricaín et al. (2013, p. 6), through writing, authors communicate ideas and emotions that transform the mind of the recipient who accesses the stories. This occurs when the readers can consider such stories as a metaphorical mirror of their own lives (Ong,

2022, p. 53). As a case in point, children are guided to develop a moral compass in those stories in which the characters face conflictive situations in which they need to make moral decisions (Robison, 2022, p. 2). Aware of the power of children's literature to bring values closer to the younger population, the United Nations offers a list of books associated with each of the 17 SDGs (UN, 2023). This list will be considered for our study, as will be described shortly.

2.3. SDGs and environmental issues as cross-curricular themes

Valuation, care, and respect for the environment constitute essential pillars of sustainability and, consequently, of various SDGs. Therefore, we can differentiate objectives that have an impact on the environment both directly and indirectly:

- Goal 6: Clean Water and Sanitation.
- Goal 7: Affordable and clean energy.
- Goal 9: Industry, innovation, and infrastructure.
- Goal 11: Sustainable cities and communities.
- Goal 12: Responsible consumption and production.
- Goal 13: Climate Action.
- Goal 14: Life Below Water.
- Goal 15: Life on Land.

As indicated above, the environment is recognized as one of the cross-curricular issues of current legislation. In this sense, Quiles Cabrera and Sánchez García (2017, p. 68) explain that environmental protection is a cross-cutting issue that must receive pedagogical attention and be worked on in a non-disciplinary way in schools. Vispo Rodríguez and Leyva Abreu (2021, p. 62) add that environmental education cannot be left to chance, but carefully planned.

In this framework, the preamble of the LOMLOE (p. 122871) refers to education for ecological transition as one of its commitments. This ecological transition is necessary to combat the environmental crisis that we are witnessing in current times. The environmental impact derived from human activity in the natural environment (Barboza Bustamante et al., 2018, p. 4) is becoming increasingly evident. Natural disasters, reduction of biodiversity, increase in diseases, or the alteration of the means of subsistence of the populations are some of the situations that show the need to act in favour of the environment, having a greater repercussion in the indigenous, rural communities, or women (REDS, 2021, p. 95). In response

to this environmental crisis, the environmentalist movement arises trying to face the current challenges and focusing on plans that support renewable energy sources or the protection of endangered species (García Única, 2017, pp. 83-84).

Considering that educational institutions have the mission and responsibility of promoting the development of attitudes aimed at sustainable development (Rieckmann, 2017, p.7), and the need to act against climate change, this dissertation focuses specifically on environmental values and behaviours on the basis of SDG 13. What is more, we can say that all the SDGs mentioned above affect to some extent this SDG 13, aimed at combating climate change.

2.4. How environmental issues are conveyed in children's picture storybooks?

Tales form part of traditional heritage, having been used throughout history to not only entertain but also educate in customs and moral principles (Pulimeno et al., 2020, p. 13). It is through two powerful means that children's picture storybooks have the power to influence the sensitivity and awareness of students (Vispo Rodríguez and Leyva Abreu, 2021, p. 62). First, we highlight the text itself that includes the plot and gives life to some characters. Nonetheless, it is also necessary to allude to the power of the illustrations and design that accompany such productions. Through both channels, these storybooks provide valuable insights into cultural beliefs, conflicts, or concerns (Malu, 2013, p. 12). In fact, Quiles Cabrera and Sánchez García (2017, p. 66) identify literature as a place to claim or denounce aspects that concern society.

More specifically, García Única (2017, p. 84) understands literature as one more ally in the fight for environmentalism in the face of the environmental crisis that we are suffering. In fact, among the common uses of literature in the classroom, Mateos Jiménez et al. (2014, p. 101) highlight environmental aspects. In light of the above, environmental issues constitute one of the great themes around which stories are built to raise awareness in society. Revealing to the readers even memorable personalities and events that have contributed to the improvement of the environment (Malu, 2013, p. 12).

As Quiles Cabrera and Sánchez García (2017, p. 69) explain, a large part of children's literature is shown to be connected to the natural world. For this reason, literary studies from the perspective of ecocriticism, in charge of analysing the relationship between literature and the environment (Vispo Rodríguez and Leyva Abreu, 2021, p. 57), are especially relevant today. Research such as that conducted by Vouillamoz Pajaro (2021) can shed light on the way in which children's storybooks convey environmental aspects. In this sense, carrying out an eco-

critical reading of different children's picture storybooks, Vouillamoz Pajaro (2021, pp. 150-155) reflects on diverse ecological messages that we summarise in the following lines:

- Sense of belonging to the non-human-dominated natural environment.
- Nostalgia for the natural environment while living in an urban environment where nature is relegated.
- Urban environments where pollution abounds and natural spaces are scarce.
- Planting and caring for plants in urban environments, which makes the population aware of the importance of nature for the quality of life of human beings.
- Equality between animals and human beings.
- Exaltation of nature, endowed with strength and selfless generosity.
- Harmful effects of human activity on nature.
- Need to care for and respect the environment and natural surroundings, abandoning behaviours of human superiority and domination of the ecosystem.
- Need to respect the balance of nature, understanding that each species plays an important role in the cycle of life.
- Denunciation of excessive consumerism and awareness of the abundant amount of non-biodegradable waste generated by humans.
- Destructive effects of nuclear power plants.
- Possibility of saving our planet by adopting a responsible attitude and an active commitment to sustainability.

These are just a few concrete examples of environmental aspects covered by children's picture storybooks. As we can observe, the ecological messages in a single study are diverse. This denotes the great variety of ecological values that we can promote in our students with the use of children's narratives. Aspects that we hope to identify in the corpus being studied for this dissertation are included in the lines above and, therefore, they can serve as a guide to value the ecological ideas of our storybooks. We are specifically referring to what concerns the harmful human activity on nature, the vast amounts of non-biodegradable garbage that people produce, the need to plant and care for the natural environment, or the hope of saving our planet from a commitment to sustainability.

3. ENVIRONMENTAL ASPECTS TO BE ANALYSED, METHODOLOGY, AND CORPUS OF STUDY

3.1. Sustainable environmental culture for climate action

In relation to the first specific objective of this dissertation, we begin by delimiting and specifying the elementary aspects that revolve around the climate crisis that SDG 13 intends to address, considering the main causes and consequences. Then, we continue with the environmental values and behaviours that favour climate change mitigation and we end focusing on reforestation and recycling as concrete sustainable actions that the selected stories jointly address.

3.1.1. The unsustainable development model that has led to an environmental climate crisis

In accordance with Miranda Murillo (2013, p. 96), civilizations imprint their mark on their natural resources, which determine the state of conservation or exploitation of their environments. Present-day environmental challenges, such as the greenhouse effect, the deterioration of the atmosphere's ozone layer, increasing desertification coupled with the loss of land for agriculture, or the rising extinction of animal and plants are testimony to the unsustainable current development model while additionally placing the cultural principles at stake (Bárcena, 2008, as cited in Barboza Bustamante et al., 2018, p. 2). It goes without saying that the impact that human beings have on the natural world is the consequence of our aspirations for comfort, safety, and pleasure (Miranda Murillo, 2013, p. 101). These aspirations push us toward an unsustainable form of growth, which in turn is the root cause of the troubling climate crisis that we are presently experiencing and that this dissertation examines.

Climate change is a reality despite the fact that some voices deny its effects in response to economic interests (Chitando, 2017, p. 376). As expressed by Bahena and Méndez (2022, p. 221), climate change is a consequence of the human impact and the cause of the contemporary way of life being threatened. Civilizations have emerged and progressed based on the exploitation of natural resources such as wood, but deforestation has also ended some of these civilizations (Sutariya, 2020, p. 129). In fact, the rate of disappearance of forest areas due to a large extent to economic exploitation is alarming, resulting in the reduction of biodiversity and intensifying climate change according to the United Nations report (UN, 2020, p. 20).

Certainly, although we find other causes under the responsibility of the human factor, such as cattle exploitation, or the burning of fossil fuels (Bahena and Méndez, 2022, p. 217),

the indiscriminate felling of trees is one of the causes of climate change. Notwithstanding the natural factor also influences the acceleration of climate change through volcanic activity, plate tectonics, or solar variability, the Intergovernmental Panel on Climate Change (IPCC) affirm that human activity is the main cause (Bahena and Méndez, 2022, pp. 217-218). As we said, the human race continues to extract natural resources from the Earth in an unsustainable manner, and the uncontrolled production and consumer behaviour that drive the economy harm our planet by accumulating vast amounts of waste (UN, 2020, pp. 16, 48).

Having mentioned the causes of the environmental climate crisis, Bahena and Méndez (2022, pp. 218-219) summarize some catastrophic consequences of climate change:

- Significant temperature increase that leads to greater drought and floods. The higher the temperature, the higher the evaporation and, consequently, an increase in rainfall in areas of tropical Africa and Antarctica and a reduction in others such as Australia, Central America, and southern Africa.
- Thermal melting of glaciers that leads to an increase in sea level.
- Alterations in natural ecosystems and loss of biodiversity.
- Increased incidence of extreme weather events (e.g., heat waves or torrential rainfall).

In relation to this last consequence, the frequency and severity of the risks from extreme events and natural disasters continue to intensify due to climate change according to the report offered by the UN (2020, p.18). What is more, they are expected to undergo substantial growth as warming increases (Kundzewicz et al., 2020, p.3).

3.1.2. Values and behaviours of a sustainable environmental culture for climate action

Miranda Murillo (2013, p. 94) identifies environmental culture as the way in which individuals relate to the natural environment. Each community has a certain impact on natural resources (Roque, 2003, as cited in Miranda Murillo, 2013, p. 95). This is largely conditioned by the environmental culture that characterizes such communities, which, to be understood, requires beginning by analysing the values, which determine and give meaning to environmental behaviour (Miranda Murillo, 2013, pp. 94-95).

The repertoire of values acquired throughout the life of the human being influences their daily action (Miranda Murillo, 2013, p. 96). According to Kurtde Fidan and Ulu (2021),

“values refer to a collection of principles that take their roots from the past and tradition and extend to today and tomorrow nourished by these roots” (p. 103). These values are reflected in all areas of individuals' lives: attitudes, perspectives, decisions, and behaviours. In relation to the environment, we can distinguish three value orientations, following Stern et al., (1993); Stern and Dietz (1994), as cited in Miranda Murillo (2013):

The selfish is related to those values oriented to satisfy personal needs and interests; their concern for the environment depends on the consequences of their own well-being; these people especially consider the costs and benefits that environmental behaviour would have for themselves. The social-altruistic one responds to the concern for the consequences of environmental problems in other people, and the biosphere one attends, in addition to the human being, to other species, that is, it is directed to all types of living beings. (p. 98) (My translation)

Regarding behaviours, in the existing literature, we find different terminologies alluding to the same concept: environmental, pro-environmental, or ecological behaviour. This type of behaviour is defined as the actions that individuals develop in favour of the environment, materializing in the practice of protecting natural areas, recycling and reusing products, saving natural resources and energy, or adopting a responsible consumption of plastics and non-biodegradable material (López, et al., 2014, as cited in Yangali Vicente et al., 2021, p. 4). Environmental behaviours are distinguished by three essential traits according to Bolzan (2008, p. 4), cited in Miranda Murillo (2013, p. 101):

- They are actions that generate visible changes in the environment.
- They result from the response to a requirement or problem.
- They allow anticipating and planning an effective result, transcending the present situation.

The need to promote the adoption of ecological and sustainable values and behaviours that improve climate conditions translates into the need to pursue a sustainable environmental culture. The reason behind this is that, as Opoku (2015, p. 37) notes, culture impacts how people view and interact with their natural surroundings, making it essential to the quest of sustainable development. Cultural values influence the standards of conduct of society, which also means they have the capacity to affect the mentality shift required to ensure the attainment of sustainable development (Opoku, 2015, p. 38). If the value system is built on a sound utilization

of natural resources and based on the real needs of societies, such communities will be directed towards sustainable development (Roque, 2003, as cited in Miranda Murillo, 2013, p. 96).

Therefore, assuming that the steady deterioration of the environment is due to certain beliefs and perceptions of the natural world (Miranda Murillo, 2013, p. 95), we consider it essential to promote a sustainable environmental culture from an early education that imprints ecologically desirable and sustainable values and actions in students toward the fight against climate change. An environmental education for sustainable development that encourages citizens to acquire responsible, respectful, and critical attitudes toward natural resources and the resolution of environmental problems (Vispo Rodríguez and Leyva Abreu, 2021, pp. 61-62).

While having an environmental culture is not a guarantee that human conduct will evolve for the better, researchers have found a positive correlation between the level of environmental culture and the environmentally responsible actions of certain individuals (Sosa Isaac et al., 2010, as cited in Miranda Murillo, 2013, p.96). According to the aforementioned findings, from this dissertation we advocate for the analysis of those values and behaviours associated with a sustainable environmental culture.

3.1.3. Concrete sustainable actions for climate change mitigation: recycling and reforestation.

The crisis suffered by the climate requires a global commitment to reverse it and prevent the catastrophic effects that derive from it from worsening (UN, 2020, p.50). For this purpose, Kundzewicz et al. (2020, p.5) allude to the need to unite efforts across various scales, encompassing local, national, regional, and global levels. Although plans have been designed to achieve sustainability and mitigate the consequences of climate change in developing countries, there is still work to be done (UN, 2020, p.50). In this sense, the SDG 13 is aimed at urgently adopting actions in favor of the climate to mitigate its effects (Yangali Vicente et al., 2021, p.2). In accordance with this objective, some micro-level measures are proposed by the UN report (2020, p.12), as well as the European Commission (2019) and IPADE (2006), as cited in Bahena and Méndez (2022, p.221):

- Recycling and reusing.
- Tree planting and other species.
- Investment and commitment to sustainable energy.

- Sensitize society about the effects of climate change and the need to act.
- Use of public transport.
- Save electricity.

Among such actions aimed at reaching sustainability, we concentrate on the first two as concrete measures potentially to be promoted by the storybooks we analyse. Seeking ways to minimize climate change effects, the measures of recycling and reusing are aimed at properly managing and reducing the tons of non-degradable waste that human beings throw on our planet with the overproduction and overconsumption that tend to dominate the human being of developed countries. As stated in the report of the UN (2020, p.48), the world economy is driven by consumption and production, but these processes also have a detrimental effect on the ecosystem due to the unsustainable use of natural resources. We only need to think of all the plastic containers and wrappers that fill our household garbage every day to realize the unsustainability of our lifestyle. These waste products, multiplied by the millions of people who inhabit our planet, are produced and broken down in processes that release harmful gases into the atmosphere that impact negatively on air pollution and global warming (UN, 2020, p.49).

The inability of humans to reduce the amount of rubbish they produce is forcing landfills to overflow, showing us that there is no simple solution to get rid of the trash they once believed could be easily buried or burned and forgotten (Abdul-Rahman and Wright, 2014, p.1). As a sustainable response, many voices are defending three actions commonly summarized by the “three Rs”: reduce, reuse, and recycle. These are regarded as three measures to decrease the generation of this waste and, consequently, contribute to sustainability by lowering the negative effects on the climate. Although intimately connected, each term refers to a different measure. Following Abdul-Rahman and Wright (2014, p.1), reducing is aimed at minimizing purchases to, in turn, reduce waste; recycling includes sorting and processing used materials into new ones; and reuse implies looking at the items we discard in an alternative way and using them for new purposes in their original form or with slight alterations.

Concerning reforestation as another action in favor of the climate, it aims to address the phenomenon of deforestation, which represents another of the causes of climate change as we previously noted. Following the report published by UN (2020, p.54), valuable endeavours are being made to increase the proportion of green spaces and promote sustainable forest management. As the lungs of our planet, the trees that compose our parks, forests, and other

natural areas serve to reduce the amount of carbon dioxide (CO₂) in the atmosphere, which contributes to decreasing global warming.

All in all, far from complex and unattainable measures, people may contribute to a goal as crucial as the mitigation of climate change with basic actions such as correctly managing the waste or planting and caring for trees and plants. These are just two examples through which human beings can contribute to improving the environment. Given the accessibility and the simplicity of their application, we believe it is essential to transmit them as ecological values and behaviours to children. Therefore, our analysis will emphasize how both recycling and reforestation permeate the measures adopted by the characters of the selected literary works.

3.2. Method of analysis

3.2.1. Literary analysis from an ecocritical perspective

Taking into account the preceding discussion, and in order to meet our last specific objective intended to analyse and specify how such literary works address the climate crisis and convey environmental values and behaviours as facilitators of SDG 13, we carry out a literary analysis of three children's picture storybooks from an ecocritical approach.

Ecocriticism demonstrates that literary science is no stranger to the deterioration of our planet, environmental problems, and the consequent urgency of making society reflect on it from literature (Vispo Rodríguez and Leyva Abreu, 2021, p.59). In fact, Sutariya (2020, p.129) explains that the main purpose of much of ecocritical literature is to sensitize and educate the world about the environmental crisis with the intention of obtaining active involvement. In line with these purposes is the ultimate goal of this dissertation, considering children's literature as a valuable instrument for the youngest to become aware of and commit to the environment. We, therefore, consider it pertinent to base our analysis on the ecocritical approach.

For this study to be developed, we begin by choosing and describing the corpus to be examined, which will be discussed in the sections that follow. In this first approach to the stories, we delve into general considerations regarding their authors and illustrators, overall elements of the narration's composition, and key aspects to better understand the story. After that, framed within an ecocritical perspective, we will conduct a critical evaluation of such stories reflecting on their environmental content. More specifically, we will conduct an ecocritical reading of each storybook bearing in mind the environmental climate crisis, those values and behaviours of a sustainable environmental culture for climate action, and recycling and reforestation as concrete sustainable measures. These general points will be studied in light

of three elements of the stories: the setting, the characters, and the general message. Based on these three elements, we propose to answer the following questions connecting with ecocriticism:

- **Setting analysis:**

- Where and when do the stories take place?

Framing the narrative in space and time provides a context that facilitates understanding the environmental circumstances as well as the individual situations of each character.

- What role does nature play in the stories and what is the connection to humankind?

We will gain an understanding of how significant the role of nature is in each story as well as the environmental culture that defines each character by appreciating the descriptions of nature and how the characters relate to it.

- How is the environmental crisis of climate change reflected in the stories?

It will be of the utmost importance to achieve the objectives of the project to identify what climate-related concern is reflected in each setting, identifying it as a cause or effect of the climatic change. Reflecting on how such a dilemma affects the characters of the text as well as the context will also be extremely important.

- **Characters' analysis:**

- What environmental values characterize the action of the characters in the story?

We will pay particular consideration to the activities that the characters carry out as they will reveal their values. We particularly focus on values associated with environmental preservation and valuation, as well as the value orientations that direct these characters' behaviours, following Stern et al. (1993); Stern and Dietz (1994), as cited in Miranda Murillo (2013, p.98).

- How are recycling and reforestation applied as sustainable actions to resolve environmental conflicts and how do they contribute to mitigating climate change?

We value the use of recycling or reusing and reforestation on the side of the characters as solutions to the environmental issues they confront in their stories. Additionally, we will

consider how both actions have improved the natural environment and how they may serve to lessen the effects of climate change.

- Can these actions be considered ecological behaviours?

We will attempt to classify the actions taken by the characters as ecological behaviour basing on the key traits provided by Bolzan (2008), cited in Miranda Murillo (2013, p.101).

- **Analysis of ecological messages:**

- What ecological messages does the text attempt to convey to readers and how are they shown in relation to SDG 13?

We concentrate on the environmental messages that are supposed to be transmitted to students through the three stories and how they connect to SDG 13. For this purpose, the environmental ideas presented in the ecocritical study developed by Vouillamoz Pajaro (2021, pp.150-155) can serve as a guide.

On the whole, taking an interest in children's storybooks that address different sustainable solutions in response to environmental problems derived from the climate crisis, this ecocritical analysis will allow us to reveal if we have selected stories that, according to Yangali Vicente et al. (2021, p.2), support the formation of an environmental culture that guides towards sustainable practices in response to climate change.

3.2.2. Corpus selection

Responding to the second specific objective of this dissertation, we present in the following section the children's picture storybooks that will make up our corpus to be analysed. For their selection, the SDGs Book Club Reading Catalogue (UN, 2023) has been taken into account. The books offered in that list aim to promote principles linked to the SDGs, being intended for children between the ages of 6-12, the stage in which we framed this study. Among the storybooks provided, we have selected those that met the following criteria:

- Children's picture storybook.
- Located in the "English reading list" of the catalogue.
- Set in an English-speaking country.
- Plot around a sustainable solution to a climate change-related concern.
- Based on true events and starring a real person.

This last criterion has been used on the basis that, among the educational proposals to work on aspects related to climate change, Bahena and Méndez (2022, p.227) include work on biographies of real people who contributed positively to the climate. An aspect that, as we foresaw, can be easily brought into the classroom through the non-fiction narrative for children.

3.3. Corpus of study: Giving voice climate action

Once the previous criteria have been applied to the corpus of books focused on the SDGs set by the UN (2023), we can state that the corpus of study consists of three children's picture storybooks based on relatively recent true climate actions. In the table below, each child's book is listed alongside information about the real person whose life the book is based on, their country of origin, and the main environmental problem and the sustainable solution that they address a priori.

Table 1

Corpus for analysis

Storybook	True story	Country	Environmental problem	Sustainable solution
“Wangari’s Trees of Peace”, by Jeanette Winter	Wangari Muta Maathai	Kenya	Deforestation	Planting trees to reforest Kenya, founding the Green Belt Movement.
“One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia”, by Miranda Paul.	Isatou Ceesay	Gambia	Plastic pollution	Recycled plastic purse project through which a group of women reduces plastic waste in their village.
“The Boy Who Harnessed the Wind”, by William Kamkwamba and Bryan Mealer	William Kamkwamba	Malawi	Strong drought	Creation of wind turbines with materials from a scrapyard to pump water with which to grow plants.

Note: Own elaboration

In the form of picture storybooks that combine text and images, real models of people who somehow contribute to climate action are offered through biography and autobiography formats, framed as non-fiction narratives. Mainly, we deal with biographies, except for *The Boy Who Harnessed the Wind*, whose protagonist is also a participant in the writing of the book. All

the stories are narrated by a third-person narrator. The narrators tell the events using mainly present tense in Wangari and Isatou's stories, and past tense in William's. Interspersing the narration, we find certain interventions by the characters. Using a chronological sequence of real events, the stories generally begin by introducing the main character, the setting, as well as the problem they are facing. They then proceed to introduce the measures adopted to resolve the problem and conclude highlighting the positive effects of character's actions on the environment.

3.3.1. *Wangari's Trees of Peace: A True Story from Africa*, by Jeanette Winter

This story was first published in 2008. Over thirty-two pages, Jeanette Winter, author and illustrator of this storybook, covers such as relevant topics like environmental care or women's rights through the story of Wangari Muta Maathai. Wangari's contributions to our world are varied and widely recognized: environmental activist and defender of women's rights, democracy, and development (Van Klinken, 2022, p.157). In the eyes of Wangari, each one of these concerns was interconnected, and it was precisely due to her comprehensive approach to sustainable development that she was honoured with the 2004 Nobel Peace Prize, making her the first African woman to receive such a distinction (Van Klinken, 2022, p.157).

Raising up in a conventional Kenyan village, Wangari was considered to be a devout daughter, bride, and mother, as explained by Dávila et al. (2017, p.75). Nevertheless, being an academically gifted child, Wangari received a scholarship that allowed her to study biological sciences in America (Winter, 2008, n.p.). This was the beginning of a journey that saw Wangari gain not only recognition for her activism but also for her accomplishments as an academic, the first woman from East Africa to receive a Ph.D., a university professor, a writer, and a member of Kenya's Parliament (Van Klinken, 2022, p.157).

Through reading about Wangari's early years on Mount Kenya, her college experiences, and her later return to Kenya, *Wangari's Trees of Peace: A True Story from Africa* portrays her transformation into an environmental activist (Malu, 2013, p.13). The title seems to largely connect with the content of the story. First, it presents the protagonist and mentions a vital component in the narrative, as well as in the struggle of Wangari; trees. Trees that, following what was stated by Winter (2008, n.p.), are considered symbols of peace in African tradition. Secondly, the title identifies it as a true story set in Africa, the continent that saw Wangari born, grow, and fight. On its cover appears the protagonist in front of Mount Kenya doing what

defined her movement, planting trees. A women-led movement called Green Belt Movement by which more than 51 million trees were planted in Kenya (Van Klinken, 2022, p.157).

3.3.2. *One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia*, by Miranda Paul

This is a story set in a small village in Njau (Gambia, West Africa). Over thirty-two pages, it introduces us to Isatou Ceesay's initiative to try to mitigate the negative effects of pollution by large amounts of plastic in her area. Written by Miranda Paul and illustrated by Elizabeth Zunon in 2015, the story is created based on the information obtained by Miranda Paul in interviews with Isatou and other project participants (Paul, 2015, n.p.). This recycling project, founded by Isatou Ceesay, creates plastic yarn from bags to form purses and other resources (Mago and Gunwal, 2019, p.10) as a remedy to Gambia's problem of masses of waste piled everywhere (Paul, 2015, n.p.).

Following Mago and Gunwal (2019, p.10), Isatou Ceesay, widely recognized as the queen of recycling, is a Gambian activist who founded the One Plastic Bag recycling movement in the Gambia, promoting recycling and lowering waste production. Therefore, making use of the name of this movement begins the title of the analysed story. *One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia* is a title that faithfully suggests the content that the work presents. Plastic bags are the centre of a story, the cause of a problem, and the beginning of a change led by Isatou Ceesay. She identified the urgency of teaching the locals how to recycle and reuse the garbage bags that were ruining their community (Dávila et al., 2017, p.75). Driven by the desire to generate income, other women were instructed to crochet using the plastic that was killing their goats and reducing the soil fertility of their environment (Barford and Ahmad, 2021, pp.768-769).

3.3.3. *The Boy Who Harnessed the Wind*, by William Kamkwamba and Bryan Mealer

The Boy Who Harnessed the Wind has been written by William Kamkwamba and Bryan Mealer and illustrated by Elizabeth Zunon. Also recounted across thirty-two pages, this story describes a stage of the youth of William Kamkwamba in Malawi. The storybook begins by setting the scene in the daily life of William's family, showing the harshness of the famine and poverty that devastated the humble and farmer families after a drought. Described by Mohammadian and Gazzaz (2022, p.628), Malawi is perceived one of the least developing countries, whose population relies on subsistence farming with low productivity aggravated by climate change. As reflected in the story, Malawi's families depend on the annual rains to

sustain their crops and the late-starting rain in December 2000 caused food shortages, negatively impacting the community life for many years that followed (Dement, 2012, p.1). Young William felt forced to quit secondary school due to the poverty suffered in his family, but he continued to learn independently by reading books at the local library (Mohammadian and Gazzaz, 2022, p.635).

Reading an 8th-grade physics book related to energy (Mohammadian and Gazzaz, 2022, p.635), William starts to have thoughts of his community having a windmill to provide a water pump system to enable all year agriculture (Dement, 2012, p.1). He finally manages to build a functional windmill using materials found in the trash (Dement, 2012, p.1), which becomes a symbol of life, resilience, and self-sufficiency in a harsh environmental situation (Mohammadian and Gazzaz, 2022, p.635). In this sense, the title of the story *The Boy Who Harnessed the Wind* reflects some important aspects of the narrative. The term “boy” refers to the very young age of the character, who was approximately 14 years old when he starred in the events narrated (Mohammadian and Gazzaz, 2022, p.632). Moreover, the word “harnessed” seems to encompass William's ambition to utilize a natural and free resource such as the wind for the benefit of his family and community. Both the protagonist and the windmill built are vividly depicted on the cover.

4. ANALYSIS

4.1. Setting analysis

Where and when do the stories take place?

Wangari's Trees of Peace: A True Story from Africa is set in Ihithe, a small village in Kenya where Wangari Muta Maathai was born and bred (which was then British Kenya). The story narrates the life of Wangari (1940–2011) in a chronological and simplified way. The picture storybook begins with memories of Wangari's youth in Ihithe and culminates with the spectacular reforestation of Kenya by the Green Belt Movement, shortening the period of time between these events for narrative simplicity (Echterling, 2016, p.81). The reforestation that Wangari initiated begins in 1977, when she planted nine seedlings in her backyard as a response to Kenya's increasing deforestation (Winter, 2008, n.p.).

As we have anticipated, Isatou's storybook is set in the Gambia, West Africa. Specifically, in the small village of Njau. As the writer reflects in the author's note section, on her first trip to the Gambia in 2003, piles of rubbish were already visible everywhere, seeming a huge problem that was difficult to solve (Paul, 2015, n.p.). A rural woman named Isatou

started a project to recycle bags trying to solve the problem in the 1990s (Dávila et al., 2017, p.75). It was in 2007 when Miranda Paul met Isatou and her project (Paul, 2015, n.p.).

The Boy Who Harnessed the Wind is also situated in Africa. Specifically, this story is located in Wimbe, central Malawi. It also takes place recently, during the very early years of this 21st century. According to the data offered by Mohammadian and Gazzaz (2022, p.634), between the years 2000-2002, the maize production campaigns experienced a great decline, which is reflected in the beginning of the narration. It is in 2002, at the age of 14, when William Kamkwamba builds his own mill.

It seems relevant to mention that curiously the selected books are located in African countries. In relation to this, Chitando (2017, p.377) states that Sub-Saharan Africa is being profoundly affected by climate change, so they seem to be appropriate examples to show students how this continent is suffering from the catastrophe.

What role does nature play in the stories and what is the connection to humankind?

Wangari's story takes place in a natural environment, near Mount Kenya, where the inhabitants live in connection with and dependence on nature. Thereby, the history of Wangari is full of references to nature: “umbrella of green trees”, “Mount Kenya”, “birds”, “forest”, “seedlings”, “park”, or “trees” (Winter, 2008, n.p.). It is also worth noting the connection that is constantly shown between human beings and nature, where the latter provides the former with essential goods for life. As a case in point, Wangari goes with her mother to “gather firewood for cooking” or “harvest the sweet potatoes, sugarcane, and maize from the rich soil” (Winter, 2008, n.p.). Likewise, there are representations of nature as a protector of human beings, illustrated in the sentence that begins the story: “Wangari lives under an umbrella of green trees in the shadow of Mount Kenya in Africa” (Winter, 2008, n.p.). The green trees seem to shelter the people of Kenya as an umbrella protects us from getting wet on a rainy day. In this sense, as Echterling (2016, p.84) states, the story seems to connect ecosystem wellness with social harmony. Beyond Wangari, secondary characters like Wangari's mother and other Kenyan women also appear to be aware of the need to respect and preserve natural places as living spaces that provide well-being to humans. With the exception of the government authorities who aim to stop Wangari's movement and cut down trees indiscriminately.

Although nature is not praised in the way that Wangari's story does, *One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia* reveals a certain connection between humankind and nature. For instance, the resource first used by Isatou to transport fruits to her

house was made of materials derived directly from the environment: a "palm-leaf basket" (Paul, 2015, n.p.). Likewise, goats are animals with which people live, on which they depend to a certain extent, and which they appreciate. This is reflected in the story when some goats greet Isatou upon her return home or when it is the death of these animals that definitely leads Isatou to take action.

In William Kamkwamba's story, as in Isatou Ceesay's, there is no allusion to nature as powerful as in Wangari Maathai's. Only the description of the cornfields where William's family works and the explanation of why the crops and the land were dry seem to contain references to natural elements. Concerning the illustrations of the storybook, they usually show a brown land with no vegetation and very few trees. This seems to change in the last images of the story, where corn crops are represented on a ground full of green vegetation, noting the changes brought by the windmill. What it does share with the other two stories is the dependence of the human being on the environment. From its first pages, the reader becomes aware of the challenging circumstances faced by the majority of Malawian families, who live as humble farmers on the outskirts of urban areas, taking care of the crops so that they can eat (Mohammadian and Gazzaz, 2022, p.633). Their supplies are so scarce that when nature does not follow its normal development and stops providing their resources, hunger devastates their families: "Without water, the sun rose angry each morning and scorched the fields, turning the maize into dust. Without food, Malawi began to starve" (Kamkwamba and Mealer, 2012, n.p.).

How is the environmental crisis of climate change reflected in the stories?

As Quiles Cabrera and Sánchez García (2017, p.66) explained, literature can be an ideal place to claim or denounce aspects of such importance as climate change. In this sense, the selected stories somehow show the environmental climate crisis, either in terms of its causes or consequences. Beginning with *Wangari's Trees of Peace: A True Story from Africa*, the indiscriminate felling of trees to the detriment of green spaces is evident, reflected especially through its drawings. In this sense, we can highlight images such as the one depicting a couple of men with axes chopping down trees, or another representing Wangari crying while thinking how her village looked like, full of buildings and without the trees that once made it up. This last illustration is accompanied by the following text: "Thousands of trees have been cut down to make room for buildings, but no one planted new trees to take their place. Will all of Kenya become a desert? she wonders as her tears fall" (Winter, 2008, n.p.). In this sense, through the disappearance of forest areas, this story addresses one of the causes of the intensification of climate change (UN, 2020, p.20). This situation is presented in the storybook after Wangari's

return six years later to Ithi, once her studies in America are completed. At that time, logging has already started in Kenya and the illustrator represents this moment by showing the protagonist with an expression of astonishment and disappointment while looking at an arid land with cut tree trunks. Nevertheless, deforestation not only seems to emotionally affect the protagonist, but it is when natural resources are scarce that the quality of life of citizens, especially women, is radically reduced: “Wangari sees women bent from hauling firewood miles and miles from home. She sees barren land where no crops grow” (Winter, 2008, n.p.).

Continuing with *One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia*, we can infer the contamination caused by an excess of plastic waste as one of the causes leading to climate change. The uncontrolled production and consumer practices damage planet Earth by creating massive amounts of waste (UN, 2020, pp.16, 48). This is especially dangerous when we talk about non-biodegradable materials such as plastic, which releases polluting gases into the atmosphere in its creation process, in its combustion, and even in its slow decomposition process. Specifically, the story mentions burning plastic: “Smoke from burning plastic stings her nose” (Paul, 2015, n.p.).

Another issue related to climate change is reflected in the story of *The Boy Who Harnessed the Wind*. This time is not a cause that is described, but a consequence. Specifically, the work addresses the reduction in rainfall in southern Africa and the consequent drought in the area described by Bahena and Méndez (2022, pp.218-219) as catastrophic consequences of climate change. According to Mohammadian and Gazzaz (2022, p.634), this drought alongside the considerable rise in temperature derived from the climate crisis results in an overall decrease in soil's organic nutrients and the subsequent impoverishment of crops that hinders Malawi's prosperity, as reflected in the storybook.

4.2. Characters' analysis

The relationship between nature and human beings that we described before is closely related to the environmental culture of each community. As explained by Bayón (2006), as cited in Miranda Murillo (2013, pp.95-96), this environmental culture is founded on the bond between humans and the environment, including a variety of conduct, habits, and living conditions of a specific group of people and is based on values and knowledge. That is why, for the correct understanding of the environmental culture of a community, environmental values and the consequent behaviours should be analysed (Miranda Murillo, 2013, pp.94-95).

What environmental values characterize the action of the characters in the story?

Wangari's Trees of Peace: A True Story from Africa begins by introducing the reader to the bond that Wangari felt for the natural environment: “She watches the birds in the forest where she and her mother go to gather firewood for cooking” (Winter, 2008, n.p.). The value of appreciation of the environment was ingrained in her brain since she was really young. It probably influenced her decision to study Biology and later, wanting to improve her natural environment. Alluding to the value orientation that governs the character of Wangari, following Stern et al., (1993); Stern and Dietz (1994), as cited in Miranda Murillo (2013, p.98), we can distinguish evidence of two of them. In the first place, the social-altruistic, when what first moves Wangari to act is to see how the quality of life of women is negatively impacted by being forced to go far from their homes to find food and firewood. Nonetheless, we also observe the biosphere orientation when worrying about other species of living beings when she wonders: “And where are the birds?” (Winter, 2008, n.p.). Such values even led her to confront government men to prevent them from continuing to cut down trees. Although “they call her a troublemaker and put her in jail” (Winter, 2008, n.p.), Wangari remained faithful to her values, as expressed in her phrase “right is right, even if you're alone” (Winter, 2008, n.p.).

For her part, Isatou's motivation for acting comes from noticing the large amount of garbage accumulated in her area and discovering how plastic is ending the lives of goats. “The bag twists around the insides, and the animals cannot survive. (...) Isatou must be strong and do something. But what?” (Paul, 2015, n.p.). Likewise, a very revealing illustration is the one that depicts Isatou with one hand covering her nose to block out the sickening scent that a pile of accumulated trash gives out and another of her hands collecting up plastic bags. Apart from that, goats looking for something to eat can be seen on the mountain of garbage: “Goats scamper past. They forage through the trash for food. She (Isatou) knows too much to ignore it now” (Paul, 2015, n.p.). The aforementioned considerations account for her commitment to environmental preservation as well as her values of respect and protection for animals. In this sense, we observe a biospheric orientation of values, when caring for other living things besides humans.

The Boy Who Harnessed the Wind shows William's commitment to his village, a place that has drastically reduced its vegetation and, consequently, suffers from hunger and poverty. Thereby, William's values orientation can be framed mainly in the social-altruistic, worrying about the human consequences of environmental impacts:

He closed his eyes and saw a windmill (...). He saw the machine drawing cool water from the ground, sending it gushing through the thirsty fields, turning the maize tall and

green (...). This windmill was more than a machine. It was a weapon to fight hunger. (Kamkwamba and Mealer, 2012, n.p.)

In essence, the value system that these protagonists embody is part of a sustainable environmental culture that, as its name suggests, guides them toward the sustainable development that our planet deserves. In turn, the protagonists with their actions and their desire to face problems make those around them more conscious, which helps to expand their values and somehow reduce the mark that many human beings leave with their unsustainable behaviour.

How are recycling and reforestation applied as sustainable actions to resolve environmental conflicts and how do they contribute to mitigating climate change?

Focusing on these two actions as concrete climate change measures, Wangari's story revolves entirely around the replanting of species and, with it, the reforestation of an area that was felt the unsustainable impact of human beings. According to what she did, "if you were to climb to the very top of Mount Kenya today, you would see the millions of trees growing below you" (Winter, 2008, n.p.). Wangari's protection of and planting of trees for the preservation of natural areas brought forth substantial environmental benefits. Echterling (2016, p.78) affirms that the movement guided women to collaborate to cultivate indigenous trees that would stop soil erosion and maintain hygienic wetlands. By increasing green spaces, the amount of carbon dioxide in the atmosphere tends to decrease as well, in turn contributing to mitigating the climate problem. All of the above reveals that this story serves as an inspiring instance of how passion and perseverance produced significant change (UN, 2023).

In the case of Isatou, attempting to reduce the excess plastic pollution suffered in the area that detrimentally affects the ecosystem and biodiversity, she and the women of her village respond by recycling plastic bags and transforming them into threads with which to weave bags. As Barford and Ahmad (2021, p.768) explain it, by recovering materials from waste streams and moving them to the recycling or reuse market, this narrative illustrates how to better manage plastic waste and make a profit. In this way, Isatou decides to adopt an ecological behaviour based on recycling and reuse, starting a project with other women that becomes significant and, consequently, leads to an improvement in the immediate environment. As the writer expresses, "today Njau is much cleaner, the goats are healthier, and the gardens grow better" (Paul, 2015, n.p.). The writer even informs readers that many people travel to the city of Isatou to learn about this way of creating from recycled elements (Paul, 2015, n.p.). Therefore, this action led by

Isatou Ceesay made a decisive contribution to the environment, but also to the climate problem since the polluting gases that are released in the plastic decomposition process were reduced (UN, 2020, p.49).

Combining both actions to a certain extent, William managed to minimize the severe effects of climate change that were devastating his area. It is important to mention that these two actions are not explicitly mentioned in the literary work and, conversely, greater weight is given to the renewable energy produced by the windmill. Nonetheless, we can also extract valuable messages from the story regarding the importance of reuse, since it is from discarded material that William builds his windmill: “In the junk yard, pieces appeared like rusted treasures in the tall grass (...) a broken bicycle, rusted bottle caps, and plastic pipe, even a small generator that powered a headlight on a bike” (Kamkwamba and Mealer, 2012, n.p.). As also stated by Mohammadian and Gazzaz (2022, p.637), recognizing that the wind turbine is comprised of recycled components, provides an insight into how to reuse products so that pollution can be reduced. Similarly, the protagonist manages to build a device with which to pump water to replant crops and grow vegetation. All this without forgetting the relevant fact of obtaining wind energy that stands out as sustainable for being clean and renewable. This mill uses environmentally friendly fuel that does not emit hazardous pollutants that harm the ecosystems (Mohammadian and Gazzaz, 2022, p.637).

In light of the above, the possibility of bringing water to an arid land due to the effects of climate change, allows William's family and the rest of the inhabitants of the area to adapt and overcome an adverse climatic situation, improving their quality of life. As William thought, “electric wind can feed my country” (Kamkwamba and Mealer, 2012, n.p.). Likewise, even though the mitigation of climate change is not the main point in this storybook, the use of renewable energy, the reuse of resources, and the increase in green spaces mean contributing to some extent to improving the climate crisis.

Once analysed the behaviours developed by each character, we can observe how three of the micro-level measures for climate action proposed by the European Commission (2019) and IPADE (2006), as cited in Bahena and Méndez (2022, p.221) and those advocated by the UN (2020, p.12) are considered: tree planting, recycling, and commitment to sustainable energy. In short, with their behaviour based on sustainable environmental culture, Wangari, Isatou, and William can serve as models for the promotion of actions based on a sound and efficient use of resources and a valuation and protection of green areas that guide us towards a substantial improvement of the climate issue we are currently tackling.

It is also worth noting that these people's actions were first individualistic but later included others, producing a more significant effect. On the one hand, Wangari involves the women of her village in her project, making them aware of the benefits that planting trees will bring them: "Our lives will be better when we have trees again" (Winter, 2008, n.p.). Likewise, she gives them economic incentives, which increase and strengthen their active participation: "Wangari pays them a small amount for each seedling still living after three months - their first earnings ever" (Winter, 2008, n.p.). We can affirm that the involvement of other women was decisive for the climate action that Wangari initiated and for the success of the Green Belt Movement.

On the other hand, Isatou begins her project with her willingness to act on the problem, but it is with the help of other women, who also received an income, that the One Plastic Bag movement succeeded:

"What can we do?" – Isatou asks her friends. "Let's wash them" – says Fatim. Maram grabs a bucket, and Incha fetches water from the well. Peggy finds clothespins, and they clip the washed bags on the line. As the bags dry, Isatou watches her sister crochet. "Can you teach me?" (Paul, 2015, n.p.).

Lastly, William started his project alone. In fact, many people did not believe in what he was doing: "This boy is misala. Only crazy people play with trash!" (Kamkwamba and Mealer, 2012, n.p.). However, others got involved in his project and helped him to achieve it: "His cousin Geoffrey and best friend Gillbert soon appeared (...). Can we help with electric wind?" (Kamkwamba and Mealer, 2012, n.p.).

Can these actions be considered ecological behaviours?

By examining the three essential features advocated by Bolzan (2008), as cited in Miranda Murillo (2013, p.101), we recognize environmental behaviours in acts that result in observable alterations to the environment, being a response to a need, and planning an outcome that transcends the current circumstance, as was explained in the theoretical revision.

Wangari's story opens with one of her quotes: "The earth was naked. For me the mission was to try to cover it with green" (Winter, 2008, n.p.). Indeed, what Wangari did was reforest an area where massive logging had devastated the natural space that had formerly brought prosperity and well-being. Such deforestation resulted in a decrease in the quality of life for women and in the region's biodiversity. In this sense, we might say that Wangari's action results from the need to address an issue. Likewise, this behaviour foresaw an effective outcome as

Wangari and the other women planted "the seeds of hope" (Winter, 2008, n.p.). The hope for a better life for the women in the area and the animals that used to live in the trees. Finally, the movement was successful, generating visible changes in the environment: "The umbrella of green in Kenya returns. Women walk tall, their backs straight, for now they can gather firewood closer to home. The land is no longer barren" (Winter, 2008, n.p.).

The actions shown in *One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia* are also initiated to respond to a problem that is also negatively affecting the ecosystem and its biodiversity. Pollution from excessive non-degradable waste, including plastic bags, is the environmental problem that leads the protagonist of this story to act. More specifically, what moves Isatou Ceesay to action is observing the degradation of their environment and the consequent death of goats. Isatou and the rest of women started their recycling movement transcending the present situation and planning an effective result, finally managing to reduce the plastic waste accumulated in the village and generating visible changes: "When she passes by the pile of rubbish, she smiles because it is smaller now. She tells herself, one day it will be gone and my home will be beautiful. And one day... it was" (Paul, 2015, n.p.).

Similarly, as William Kamkwamba read science books about windmills generating electricity, he could imagine how valuable these power providers would be to his community: "Windmills can produce electricity and pump water" (Kamkwamba and Mealer, 2012, n.p.). In this sense, we can observe an anticipation of the result, transcending the current and problematic situation in which the lack of rain was leading to the destruction of the vegetation and the hunger of the community. Thereby, it was also an act that tried to satisfy a real requirement. Eventually, his behaviour caused noticeable changes to the environment since the power supply made crops grow again. Although it must be admitted that the latter does not seem to have a significant representation in the narrative. Only the last illustration shows a rich and green land, where corn grows thanks to the installation of various windmills. Mohammadian and Gazzaz (2022, p.637) state that the windmill began to emerge as an emblem of rebirth and recycling as it provides life using ecologically friendly energy.

4.3. Analysis of ecological messages

What ecological messages does the text attempt to convey to readers and how are they shown in relation to SDG 13?

The main ecological message of *Wangari's Trees of Peace: A True Story from Africa* is the importance of preserving and increasing green spaces through reforestation to improve the

quality of life on our planet. Improvements that affect both the life of human beings and the expansion of ecosystems for other species. As a result, this brings benefits in relation to climate change mitigation. In this way, according to Van Klinken (2022, pp.165-166), Maathai expresses a profound awareness of environmental urgency while communicating the hope that the earth's damage can be mended if respect for nature is spread. In light of the above, the story connects with some messages found in the ecocritical study of Vouillamoz Pajaro (2021, pp.150-155). Specifically, those that exalt nature as full of generosity (by providing goods and well-being to human beings), the relevance of planting and caring for plants, and the need to protect the surrounding natural world, abandoning behaviours of human domination. In connection with this last idea, Van Klinken (2022, p.165) points out that the most important lesson offered by Maathai is that people need to limit their never-ending desire for more since it results in environmental abuse. As Wangari expresses in *Winter* (2008, n.p.), "we need a park more than we need an office tower."

One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia shows the reader the inspiring action of Isatou, who wanted to improve her surroundings (Dávila et al., 2017, p.75). This story promotes ecological awareness and responsibility by trying to solve a complex situation by recycling non-biodegradable materials such as plastic and reusing it to create useful products. Furthermore, it raises readers' awareness of the need to reduce our consumption and waste production to reduce plastic pollution, which leads to an assertion of the effects of climate change. All aspects considered make us recognize that the message of the story revolves around the sustainable measures commonly known as the "three Rs" (reduce, reuse, and recycle) to lessen the harmful effects on the environment and, consequently, contribute to SDG 13. In connection with it, some messages detected in the ecocritical reading developed by Vouillamoz Pajaro (2021, pp.150-155) can also be highlighted, such as the negative impacts of human activity on the natural world and the denouncement of over-consumption that generates a high rate of non-biodegradable waste.

In *The Boy Who Harnessed the Wind*, we also find reference to the messages underlined by Vouillamoz Pajaro (2021, pp.150-155), fundamentally the generosity of nature from which we can extract clean energy and the human activity's detrimental consequences on the environment reflected in the drought. Similarly, we find other ideas that are characteristic of this children's literary work. In this sense, we highlight the value of finding new uses for discarded materials, appealing to recycling and reuse; the importance of pursuing climate change mitigation to continue ensuring life on our planet; and the perseverance and desire to

improve the living conditions of his people through the use of renewable energy instead of other polluting sources.

Finally, it is important to note that neither Wangari, Isatou, nor William care that they are not the cause of such problems, they intend to be part of the change and improvement of their places of residence. This way, the three works transmit to the readers the great level of empathy and commitment to the natural environment of such people.

5. CONCLUSION

Stories are present in our lives from an early age. We all have grown up with stories that have somehow filled our thoughts and hearts. All lovers of stories have experienced situations through reading that have made us discover and value new ideas or ways of thinking and go through emotions that would have been difficult to reveal otherwise. This is supported by Pulimeno et al. (2020, p.18), who affirm that an appropriate book allows individuals to explore different situations with which to broaden their minds and reflect on their behaviours while providing entertainment. Consequently, authors such as Gaitán Castro and Mosquera Collazos (2016, p.137) allude to the relevance of literature in the classroom as a way to promote knowledge of the context and develop attitudes. That is why in this dissertation, we have focused on children's literary works as a transmitter of powerful environmental values that can encourage students to take action towards environmental protection (Yangali Vicente et al., 2021, p.4), contributing to their comprehensive development.

The reason behind the fact of focusing on environmental values lies in the ecological crisis that we are suffering in current times, resulting from the overexploitation of the natural resources (Sutariya, 2020, p.130). Following Jiménez (2021, p.32), this overuse of assets shows a real decline in the relationship between humans and the preservation of the natural surroundings. As a direct consequence, we are currently witnessing the problem of climate change (Bahena and Méndez, 2022, p.221), which requires a global commitment to stop its catastrophic consequences from getting worse (UN, 2020, p.50). In this sense, SDG 13 is drafted and included in the United Nations 2030 Agenda, focused on developing climate-friendly actions (Yangali Vicente et al., 2021, p.2).

The preceding discussion shows an evident need to address education on ecological values to achieve the sustainability that our planet demands to cope with the challenges caused by this climate change. The need to contribute to the mitigation of the climate crisis alongside the fact that literary works are relevant sources of values for children (Kurtde Fidan and Ulu,

2021, p. 103), has led us to unite literature and the environment in this paper. The purpose has always been to provide English teachers of primary education valuable insights into how to get the most out of children's literature concerning environmental education, going beyond mere didactic use for linguistic purposes. For this goal, an ecocritical reading of the selected children's stories has been considered. Ecocriticism is growing in significance today due, primarily, to the uncomfortable assumption that we are living in an era of environmental constraints in which the consequences of human activities are destroying the planet's basic life support systems (Jiménez, 2021, p. 32).

Attempting to respond to our general objective aimed at exploring how children's literature based on true events and personalities address the climate crisis and transmit values and behaviours aimed at mitigating climate change, such aspects have been theoretically delimited to later analyse their presence in a corpus made up of three children's picture storybooks. This literary analysis from the perspective of ecocriticism has led us to overriding conclusions about how useful literature can be to promote environmental awareness in children. As stories, they invite the reader to understand the viewpoint, feelings, and motivations for acting of the characters and, given that they are based on true events, readers can learn how climate change is actually affecting people, awakening in them the need to act. Apart from that, the measures adopted in the stories can also be easily replicated to some extent. Planting seeds, caring for plants and trees, recycling or giving materials a second life, and encouraging others to engage in similar actions can even be motivating activities for students inside and outside of schools.

Therefore, we conceive that literary and environmental education can go hand in hand, contributing to the formation of an environmental culture that encourages our students to adopt environmentally responsible behaviours, acting in favour of the climate. As we see it, this can be possible to a large extent because they are real stories and characters that have existed, which gives them veracity and feasibility. Acting on environmental problems through sustainable solutions, as the characters in our stories did, make students discover that they can be part of the change that our planet demands. Children can learn from these storybooks how one person's actions can intervene in the improvement of the world (UN, 2023, p.74). Even more, involving those around us can add value and weight to our actions and results.

All this has allowed us to verify how, in connection with the ideas of Quiles Cabrera and Sánchez García (2017, p.70), the children's literature analysed attempts to inspire readers and awaken consciousness. As Dávila et al. (2017, p.75) expressed, through the genuinely

remarkable story of an extraordinary woman who fights against environmental degradation, *Wangari's Trees of Peace* provides a model and a source of motivation for students to act in their natural surroundings to repair the harm that other humans have caused. We might conclude the same argument regarding the rest reviewed nonfiction narratives. All of this without ignoring some voices such as Echterling (2016, p.78), who warns that the narrative simplicity required by illustrated stories for children carries the danger of representing environmental crises as too simplistic, isolated, and easy to resolve, as well as an approach of environmentalism that prioritizes individual actions over the group and social efforts. The latter reveals the possibility that other readers may develop alternative ideas to those offered in this study as a result of reading the examined literary productions.

Apart from that, we must admit that the fact of using a list of children's works provided by the UN (2023) has left valuable stories from an ecological perspective out of consideration. That is why, for undertaking future research in this field, it may be enriching to select stories based on a specific context, attending to the interests, ages, levels, or concrete needs of the students in a group. By the same token, the endeavour of forming young readers committed to their environment may lead us to consider other environmental issues or SDGs that fall outside of the scope of this dissertation. Along the same lines, an ecocritical reading of stories from publishers related to environmental education could be opted for. What is more, adding social value to the ecocritical approach, it would be equally interesting to address literary works from ecofeminism, beginning with two of the stories that have made up the corpus of this dissertation; those based on the personalities of Wangari and Isatou. Finally, taking a step beyond literary studies, interesting future lines of work could be based on the didactic application of the works analysed in the foreign language classroom, addressing a sequence of activities that allows their pedagogical environmental use.

With all of the above, we have tried to share with the teaching community a corpus of children's literature analysed from an ecocritical perspective to be applied in the educational field, contributing to the enrichment of the teaching process and the student development. Therefore, to conclude, we hope that with the readings offered in this dissertation, we can bring to classrooms the beginning of many narrative adventures that lead students to question their world and the problems they face, rethink new scenarios and sustainable actions, and dream new ways of understanding and relating to the natural environment. Dreams that lead them towards a more sustainable world, committed to the environment and to the people and living beings that inhabit it.

6. REFERENCES

Bibliography

- Abdul-Rahman, F., & Wright, S. E. (2014). Reduce, reuse, recycle: alternatives for waste management. *College of Agricultural, Consumer plus Environmental Sciences, New Canada State University* https://pubs.nmsu.edu/_g/G314.pdf
- Andricaín, S., Cerrillo, P. C., & Rodríguez, A. O. (2013). *De raíces y sueños: 50 libros para niños y jóvenes de autores latinos de Estados Unidos*. Ediciones de la Universidad de Castilla-La Mancha. <https://cuatrogatos.org/docs/pdf/Deraicesysuenos-1.pdf>
- Bahena, M. H. R., & Méndez, C. R. (2022). Educación y acción por el clima: ODS 13 un reto inmediato para la humanidad. In *Los ODS: avanzando hacia una educación sostenible: modelos y experiencias en el Máster en Profesor de Educación Secundaria Obligatoria y Bachillerato, Formación Profesional y Enseñanzas de Idiomas* (pp. 213-228). Ediciones Universidad de Salamanca. <https://doi.org/10.14201/0AQ0327>
- Barboza Bustamante, R., Vásquez Vásquez, M., & Díaz Sotomayor, S. L. M. (2018). Cultura ambiental sostenible en los estudiantes de la universidad César Vallejo de Chiclayo 2017. *Ingeniería: ciencia, Tecnología Innovación*, 5(1). <https://doi.org/10.26495/icti.v5i1.853>
- Barford, A., & Ahmad, S. R. (2021). A call for a socially restorative circular economy: Waste pickers in the recycled plastics supply chain. *Circular Economy and Sustainability*, 1, 761-782. <https://doi.org/10.1007/s43615-021-00056-7>
- Chen, M. (2015). Teaching English as a foreign language through literature. *International Journal of Media Culture and Literature*, 7(2), 189-200.
- Chitando, A. (2017). African Children's Literature, Spirituality, and Climate Change. *Ecumenical Review*, 69, 375-385. <https://doi.org/10.1111/erev.12300>
- Dávila, D., Ladd, S. M., Melilli, A., Xu, Y., & Carbaugh, J. (2017). Convenient Books for Inconvenient Truths About Earth's Ecosystem and Human Activities. *Journal of Children's Literature*, 43(2), 70-78. <https://tinyurl.com/bmy53k6j>
- Dement, L. (2012). The Boy Who Harnessed the Wind. *Journal of College Orientation, Transition, and Retention*, 19(3), 26-28. <https://doi.org/10.24926/jcotr.v19i3.2814>

- Echterling, C. (2016). Individualism, environmentalisms, and the pastoral in the picture book biographies of Wangari Maathai. *Children's Literature*, 44(1), 78-95. <https://doi.org/10.1353/chl.2016.0002>
- Gaitán Castro, A. L., & Mosquera Collazos, J. (2016). Estado de las investigaciones sobre la relación entre la literatura infantil y el proceso docente-educativo. *Actualidades pedagógicas*, 1(67), 135-172. <https://doi.org/10.19052/ap.3210>
- García Única, J. (2017). Ecocrítica, ecologismo y educación literaria: una relación problemática. *RIFOP: Revista Interuniversitaria de Formación del Profesorado*, 31(3), 79-90. <http://hdl.handle.net/11162/172665>
- Hartsfield, D. E. (2021). "Not Just for Us Nerds": Examining Elementary Teachers' Perspectives of Contemporary Children's Nonfiction. *International Journal of Research in Education and Science (IJRES)*, 7(1), 1-26. <https://doi.org/10.46328/ijres.1786>.
- Jiménez, M. G. (2021). La fábula de Faetón: el valor de un mito frente al cambio climático. Una llamada de atención desde la literatura española1. In *Nuevos horizontes de la literatura comparada (Vol. 2): Literatura y naturaleza: voces ecocríticas en poesía y prosa* (pp. 31-42). Sociedad Española de Literatura General y Comparada (SELGIC).
- Kundzewicz, Z. W., Matczak, P., Otto, I. M., & Otto, P. E. (2020). From “atmosfear” to climate action. *Environmental Science & Policy*, 105, 75-83. <https://doi.org/10.1016/j.envsci.2019.12.012>
- Kurtdede Fidan, N. & Ulu, H. (2021). An analysis of the studies on “the values in children’s literature products” in Turkey. *International Journal of Contemporary Educational Research*, 8(3), 103-118. DOI: <https://doi.org/10.33200/ijcer.881495>
- Mago, P., & Gunwal, I. (January, 2019). Role of women in environment conservation. *SSRN Electronic Journal*. <http://dx.doi.org/10.2139/ssrn.3368066>
- Malu, K.F. (2013). Exploring Children's Picture Storybooks with Adult and Adolescent EFL Learners. *English Teaching Forum*, 51 (3), 10-18. <https://eric.ed.gov/?id=EJ1020720>
- Mata Anaya, J. (2016). Neurociencia, lectura y literatura infantil. *Lazarillo: Revista De La Asociación De Amigos Del Libro Infantil Y Juvenil*, (34), 48-51. <https://dialnet.unirioja.es/servlet/extart?codigo=5626755>
- Mateos Jiménez, A., Bejarano Franco, M., y Moreno García, D. (2014). Los cuentos y los juegos de simulación para trabajar la justicia social en el ámbito de las ciencias en las primeras

- edades. *Revista Internacional de Educación para la justicia social*, 3(1), 97-119. <https://dialnet.unirioja.es/servlet/extart?codigo=5144646>
- Miranda Murillo, L. M. (2013). Cultura ambiental: un estudio desde las dimensiones de valor, creencias, actitudes y comportamientos ambientales. *Producción + Limpia*, 8(2), 94-105. <https://tinyurl.com/ytye3bw3>
- Mohammadian, H. D., & Gazzaz, R. A. (2022). A literary analysis of The Boy Who Harnessed the Wind: Creating Currents of Electricity and Hope (2009) towards sustainable development through i-Sustainability Plus theory. *AIMS Geosciences*, 8(4), 627-644. <https://doi.org/10.3934/geosci.2022034>
- Nikolajeva, M. (2015). *Children's literature comes of age: toward a new aesthetic*. Routledge.
- Ong, P. A. L. (2022). Critical multiculturalism and countering cultural hegemony through children's literature. *Waikato Journal of Education*, 27(1), 51-65. <https://doi.org/10.15663/wje.v%vi%i.884>
- Oniang'o, R. (2011). Eulogy for Wangari Maathai. Action for Africa and the Earth. *World Nutrition*, 2(10), 515-533. <https://tinyurl.com/25c3kj4p>
- Opoku, A. (2015). The Role of Culture in a Sustainable Built Environment. In A. Chiarini (Ed.), *Sustainable Operations Management. Measuring Operations Performance*, pp. 37-52. Springer, Cham. https://doi.org/10.1007/978-3-319-14002-5_3
- O'sullivan, E. (2023). *Historical dictionary of children's literature*. Rowman & Littlefield.
- Pulimeno, M., Piscitelli, P., & Colazzo, S. (2020). Children's literature to promote students' global development and wellbeing. *Health Promotion Perspectives*, 10(1), 13-23. <https://doi.org/10.15171/hpp.2020.05>
- Quiles Cabrera, M. D., & Sánchez García, R. (2017). Educación medioambiental a través de la LIJ: Claves para la formación del profesorado en los grados de magisterio. *Revista Interuniversitaria de Formación del Profesorado*, 31(3), 65-77. <https://www.redalyc.org/articulo.oa?id=27453789006>
- REDS (2021). *Objetivos de Desarrollo Sostenible y sus metas desde la perspectiva cultural. Una lectura transversal*. Red Española para el Desarrollo Sostenible (REDS / SDSN Spain).

- Rieckmann, M. (2017). *Education for sustainable development goals: Learning objectives*. UNESCO publishing. <https://tinyurl.com/3rrsep9e>
- Robison, T. L. (2022). *The Portrayal of African American Characters in Award Winning Picture Books from 2006-2016: A Content Analysis* (Doctoral dissertation, Texas A&M University-Commerce).
- Rosales López, C. (2019). ¿Cuáles son los ámbitos de transversalidad educativa? *Innovación Educativa*, (29), 109-123. <https://doi.org/10.15304/ie.29.6023>
- Sutariya, C. K. (2020). Ecocriticism: A literary theory. *Journal of Higher Education and Research Society: A Refereed International*, 8 (2), 124-131. <https://tinyurl.com/53ntvsz2>
- United Nations (2020). *The sustainable development goals report 2020*. United Nations. ISBN: 978-92-1-101425-9 <https://unstats.un.org/sdgs/report/2020/>
- United Nations (2023). *Sustainable Development Goals Book Club Reading Catalogue*. <https://www.un.org/sustainabledevelopment/wp-content/uploads/2023/02/SDG-BookClub-Reading-Catalogue-website.pdf>
- United Nations. (n.d.). *Sustainable Development Goals*. Retrieved May 4, 2023, from <https://sdgs.un.org/goals>
- Van Klinken, A. (2022). Wangari Maathai's Environmental Bible as an African Knowledge: Eco-spirituality, Christianity, and Decolonial Thought, Eastern African Literary and Cultural Studies. *Eastern African Literary and Cultural Studies*, 8(3), 156-175. <https://doi.org/10.1080/23277408.2021.1922129>
- Vázquez Ramil, R. & Porto Ucha, A. S. (2020). Temas transversales, ciudadanía y educación en valores: de la LOGSE (1990) a la LOMLOE (2020). *Innovación Educativa*, (30), 113-125. <https://doi.org/10.15304/ie.30.7092>
- Vispo Rodríguez, Yanelis, & Leyva Abreu, Yanelis. (2021). Lectura ecocrítica de “a pollito pito se le va la mano”, de Margaret Atwood. *Revista de Ciencias Humanísticas y Sociales (ReHuSo)*, 6(1), 57-66. <https://doi.org/10.5281/zenodo.5512761>
- Vouillamoz Pajaro, N. (2021). Ecocrítica y Literatura Infantil y Juvenil. La naturaleza en el álbum ilustrado. In *Nuevos horizontes de la literatura comparada (Vol. 2): Literatura y naturaleza: voces ecocríticas en poesía y prosa* (pp. 146-157). Sociedad Española de Literatura General y Comparada (SELGIC).

Yangali Vicente, J. S., Vásquez Tomás, M. R., Huaita Acha, D. M., & Baldeón De La Cruz, M. D. (2021). Comportamiento ecológico y cultura ambiental, fomentada mediante la educación virtual en estudiantes de Lima-Perú. *Revista de Ciencias Sociales* (Ve), XXVII (1), 385-398. <https://www.redalyc.org/journal/280/28065533031/>

Legislation

Ley Orgánica 3/2020, de 29 de diciembre, por la que se modifica la Ley Orgánica 2/2006, de 3 de mayo, de Educación. Boletín Oficial del Estado, núm. 340, de 30 de diciembre de 2020, pp. 122868 a 122953. <https://www.boe.es/buscar/doc.php?id=BOE-A-2020-17264>

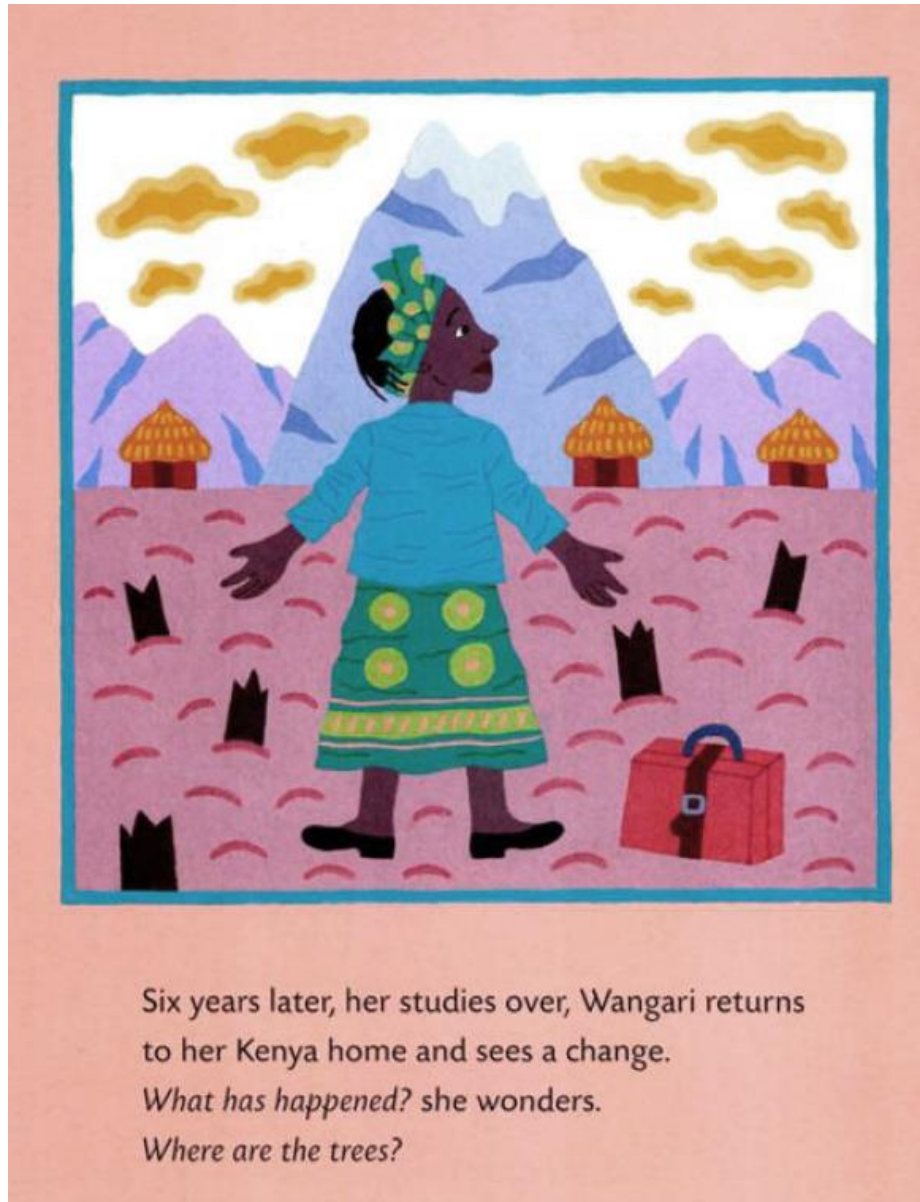
Children's picture storybooks

Kamkwamba, W. and Mealer, B. (2012). *The boy who harnessed the wind*. (E. Zunon, Illus.). Picture Book Edition. New York, NY: Dial Books for Young Readers.

Paul, M. (2015). *One plastic bag: Isatou Ceesay and the recycling women of the Gambia*. (E. Zunon, Illus.). Minneapolis, MN: Millbrook Press.

Winter, J. (2008). *Wangari's Trees of Peace: A True Story from Africa*. (J. Winter, Illus.). Orlando, FL: Harcourt.

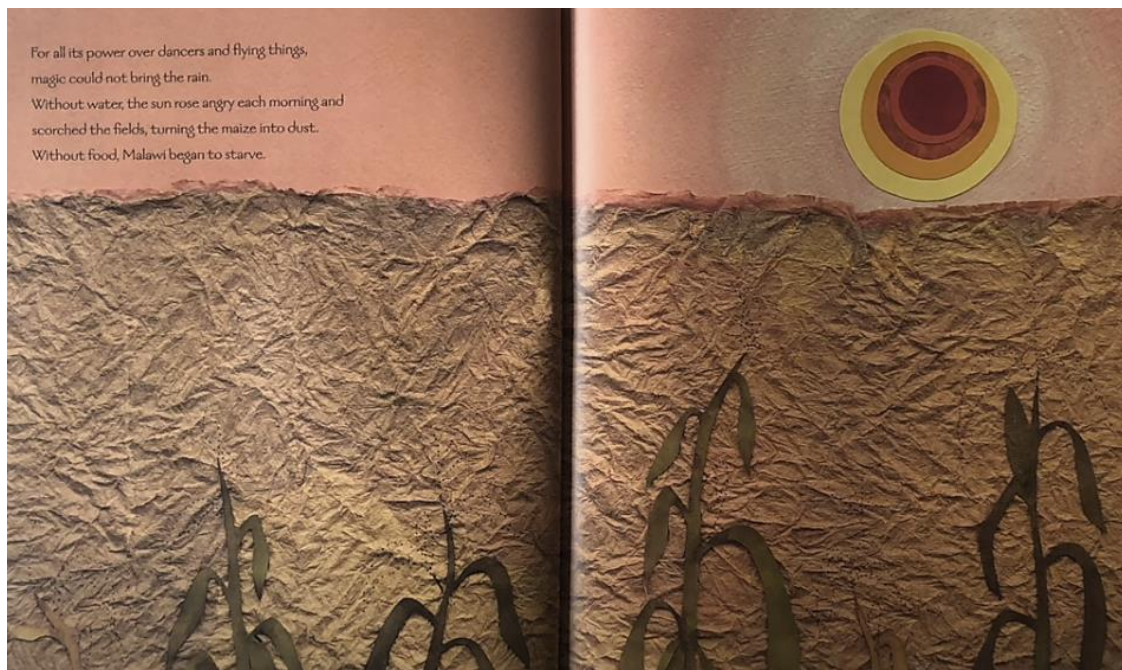
7. APPENDIX



“Wangari’s Trees of Peace”, by Jeanette Winter



“One Plastic Bag: Isatou Ceesay and the Recycling Women of Gambia”, by Miranda Paul



“The Boy Who Harnessed the Wind”, by William Kamkwamba and Bryan Mealer