

Country Analysis: Portugal

Education for Sustainability in ECEC in Portugal



Promoting children's understanding of
sustainable development through multimodal story-telling
in Early Childhood Education and Care (ECEC)

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1 Introduction

Early Childhood Education and Care (ECEC) refers to “any regulated arrangement that provides education and care for children from birth to compulsory primary school age”. Childcare constitutes a right as outlined in the European Pillar of Social Rights, since it is essential to the development and sustainability of a society (European Commission, 2017). As a future investment, it establishes the fundamental pillars for the success of youth in both education and social integration (European Commission, n.d.). Children’s development is directly shaped by their daily interactions with other children, adults, their families and the environment. Although the concept of quality in ECEC is multidimensional, curriculum frameworks establish the principles, standards, guidelines and approaches that educators could use to promote children’s learning and well-being. In light of this, curriculum and pedagogy are powerful tools for shaping interactions within early childhood education and care settings (OECD, 2021).

In Portugal, ECEC stands as a priority. As of September 1, 2020, ECEC is provided free of charge for children under three whose per capita family income is lower than 30% of the national minimum wage and for the second child and subsequent children of families whose per capita income is between 30% and 50% of the national minimum wage. However, in 2021, the campaign “First years, first priority”, identifies Portugal as one of nine countries across Europe requiring greater attention to ECEC development (First Years First Priority, 2021).

This comprehensive country analysis provides an overview of Early Childhood Education and Care (ECEC) System in Portugal. It focuses on the system’s organisational structure, regulations and administrative procedures, as well as its overarching principles and objectives. Following this preliminary study, the discussion turns to both the themes of Education for Sustainability (EfS) and Storytelling, aiming to shine light on its integration and promotion in ECEC. Additionally, the components constituting the national curriculum for pre-school education are thoroughly identified and examples of good practices implemented in Portugal are explored. Based on the country analysis, a set of recommendations arises to support future project’s activities and determine their integration and implementation.



2 Early Childhood Education and Care (ECEC) System in Portugal

2.1 Structure and Overview

Early Childhood Education and Care (ECEC) in Portugal is optional and structured into two distinct stages, which align with the categories of ISCED level 0 programmes, namely early childhood educational development and pre-primary education (UNESCO Institute for Statistics, 2012). In Portugal, the initial stage caters to younger children under the age of three years old. Its primary objective is to provide childcare, particularly in circumstances where parents or guardians are unable to look after their kids. The second stage includes older children aged three until the beginning of compulsory education, which they are legally obliged to attend. The aim is to offer fundamental educational support complementary to the educational role of families (European Commission, 2024).

The initial stage is the responsibility of the Ministry of Labour, Solidarity and Social Security (MTSSS) and the program meets the criteria and objectives outlined in the ISCED 010, emphasised in the ISCED 2011 classification. According to the OECD, approximately one-third of children enrolled in ECEC in OECD countries attend private institutions, whereas public institutions are more prevalent at other levels of education (OECD, 2021). In Portugal, childcare services are predominantly provided by private non-profit bodies, such as private social solidarity institutions or legally equivalent institutions, which maintain cooperation agreements with the MTSSS, and by private for-profit bodies with operating licenses. The subsequent stage is the responsibility of the Ministry of Education (ME), while the technical supervision is the joint responsibility of the Ministry of Education and the Ministry of Labour, Solidarity and Social Security. It is segmented into a national network comprising of both a public and private network. The public sector includes school clusters (organisational units of schools providing basic and upper secondary education) and the private sector consists of for-profit schools and not-for-profit establishments (European Commission, 2024).

The Pedagogical Guidelines for *Creches* is a guiding document for the development of pedagogical activity for children up to 3 years of age. It establishes three areas of learning: Well-being and Health; Personal, Social and Cultural Identity; Communication, Languages and Cultural Practices (Direção-Geral da Educação, 2024). The Curriculum Guidelines for Pre-School Education serves as the legal document providing guidance regarding the design and management of pre-primary curriculum. This document outlines

three domains: Personal and Social Development; Expression and Communication; Knowledge of the World (Direção-Geral da Educação, 2016).

2.2 Education for Sustainability (EfS) in Portuguese Pre-Schools

Education for Sustainability (EfS) in Portugal is present in the natural and physical sciences' domain (Folque & Oliveira, 2016). As previously stated, the Curriculum Guidelines for Pre-School Education comprises a section pertaining to Communication and Knowledge of the World, which fosters, among others, the creation of habits of respect for the environment, illustrating the interdependence between individuals and the natural world. Children come to comprehend their position and role, as well as how their actions can impact the earth. The aim is to facilitate the development of attitudes that promote responsibility and environmental awareness. The relevant learning objectives are as follows: seek explanations for phenomena and transformations observed in the physical and natural environment; exhibit behaviour that demonstrates concern for nature conservation and respect for the environment, for instance, by turning off taps or switching off lights (Direção-Geral da Educação, 2016). The guidelines for Sustainable Environmental Education emphasize the following topics in the context of early childhood education: Sustainability, Ethics and Citizenship; Sustainable Production and Consumption; Territory and Landscape; Climate Change; Biodiversity; Energy; Water; and Soil (Câmara et al., 2018).

Various projects tailored to pre-schools are actively promoting sustainability. The Cascais Environmental Education Guide is aimed at educators interested in implementing environmental education in pre-schools. Each thematic content is presented, along with proposals for theoretical and practical activities, designed to consolidate knowledge, and suggestions for additional information (Câmara Municipal de Cascais, 2020). The Portuguese city also developed an Environmental Education and Awareness Programme offering a multidisciplinary range of 80 activities, complementary to the curriculum, which can be conducted both in the classroom and outside of it (Câmara Municipal de Cascais, 2023). The 360 Mission is another example of a practical application promoting sustainability. The environmental awareness project provides different educational content through challenges and annual activity plans. It seeks to include the entire educational community, involving teachers and families (BIOND, n.d.). Indeed, educators have a relevant role in promoting EfS. They must stimulate and support children's curiosity in their attempts to understand the physical and natural environment (Direção-Geral da Educação, 2016).

There is also the "Primeiros Passos, Infância Saudável, Vida Feliz" project, initiated in Portugal in 2017, which aims to promote the healthy development of children, particularly those from families facing poverty and social exclusion. The project focuses on reducing inequalities and fostering physical, cognitive, emotional, and social development in children from birth to 24 months of age. It integrates sustainability principles into the daily practices of preschools involved through environmental education, eco-friendly practices, community engagement, and role modelling by educators and staff. Children learn about topics like recycling and biodiversity through hands-on activities, while preschools adopt eco-friendly measures like using recycled materials and conserving resources. Collaboration with local communities further promotes sustainability initiatives. Overall, the project fosters environmental awareness and responsibility among children from an early age (União das Misericórdias Portuguesas, 2018).

2.3 Storytelling in ECEC

The activity plan for pre-school education, developed by the Portuguese Republic, foresees reading or storytelling sessions at least daily, utilizing either paper books or digital alternatives. The story may be narrated by the educator or the child. Following the storytelling session, the child can be encouraged to retell it, engage in discussions about the characters and share their opinion on the plot. Whenever feasible, it is recommended to conduct the activity outdoors to maximize the contact with nature (República Portuguesa, n.d.). Storytelling is occasionally employed to support the integration of the Sustainable Development Goals (SDGs). The "SDG Generation" project is a Portuguese initiative centered on raising awareness of the Sustainable Development Goals. It promoted a free storytelling workshop aimed at individuals aged 15-30 years, with the goal of exploring storytelling strategies and dynamics in support of the SDGs (SDG Generation, 2020).

An example of a Portuguese storytelling initiative that enhances sustainability education is the work of the pre-school children at the "Salesianos do Estoril" school. Guided by their teachers, they created a story about recycling, aiming to demonstrate the importance of separating packaging (Recicla, 2022). Another project that focuses on storytelling for sustainability is "Stories with Science", promoted by the Lagos Living Science Centre. It provides activities aimed at pre-school and primary school children. The objective is to approach scientific content using the narrative of a story to introduce concepts, such as biology, astronomy, sustainability, among others (Centro de Ciência Viva de Lagos, n.d.). There are some resources available for educators to implement storytelling effectively, for instance the National Reading Plan's. Its mission is to implement public policies aimed at fostering reading skills and habits. It provides a curated catalogue of age-appropriate books

and offers resources to support the storytelling of various book genres in the classroom (Plano Nacional de Leitura, n.d.).

3 Curricula Analysis

The entire education system can draw valuable insights from pre-school education, since the curriculum is flexible and children are called to actively participate in the learning process (Direção-Geral da Educação, 2016). The distinction between the school system for children under 3 and those over 3 is established in legislation and justifies specific proposals for these two phases. This section provides an analysis of the curricula in Portugal concerning Early Childhood Education and Care (ECEC) and how sustainability and storytelling are incorporated in the curriculum guidelines.

3.1 National Curriculum Framework

As previously mentioned, the Pedagogical Guidelines for *Creches* establishes the following three areas of learning (Direção-Geral da Educação, 2024):

Well-being and Health	Personal, Social and Cultural Identity	Communication, Languages and Cultural Practises
Physical well-being, promoted through involvement in daily activities related to nutrition, hygiene, sleep, rest and movement.	Self-awareness, identifying one's characteristics and recognising oneself as a unique individual.	Explore the world and interact with others through touch, sight, smell, sound, speech, movement and play.
Emotional well-being and learning about emotions and how to regulate them, both in relation to one self and in interactions with others.	Self-confidence and autonomy, making decisions and solving problems.	Communicate with others by sharing objects, interests, emotions, objects and short narratives.
	Sense of community belonging, learning about the diversity of perspectives and cultures.	Participate in cultural practices and their symbolic languages.

The Curriculum Guidelines for Pre-School Education are based on the overall pedagogical objectives defined by the Law no. 5/97 of 10 February. The table below outlines the main components to be addressed in each domain of the national curriculum (Direção-Geral da Educação, 2016).

Personal and Social Development	Expression and Communication	Communication and Knowledge of the World
Building identity and self-esteem	Physical Education	Introduction to scientific methodology
Independence and autonomy	Artistic Education	Science approach
Self-awareness as a learner	Visual Arts	Knowledge of the social world
Democratic coexistence and citizenship	Drama/Theatre	Knowledge of the physical and natural world Technological World and Use of Technologies
	Music	
	Dance	
	Oral Language and Approach To Writing	
	Maths	

Environmental education for sustainability is currently a fundamental component of education. It is present in the curriculum and in numerous projects developed by schools. Regarding pre-school education, the Knowledge of the World area aims to foster an awareness of the different social and natural sciences. The Environmental Education for Sustainability Framework is organised as follows:

- Sustainability, Ethics and Citizenship: Pillars of sustainability; Ethics and citizenship; Intergenerational responsibility; Poverty reduction.
- Sustainable Production and Consumption: Waste; Labelling (goods and services);
- Territory and landscape: coastline; Landscape; Land dynamics; Landscape quality objectives.
- Climate Change: Causes of climate change; Adapting to climate change; Climate change mitigation.
- Biodiversity: The importance of biodiversity; biodiversity as a resource; Main threats to biodiversity; biodiversity conservation strategy.
- Energy: Energy resources; Energy sustainability; Sustainable mobility.
- Water: The importance of water for life on Earth; Environmental problems associated with fresh water; Ocean literacy; Sustainable management of water resources.
- Soil: Soil as a resource; Use and Abuse (Câmara et al., 2018).

3.2 Entry Points for Storytelling

Storytelling is emphasised within the curriculum guidelines. Educators, children and their parents or guardians are encouraged to utilize storytelling as a means of exploring specific topics and fostering understanding. The stories read by the educators, retold and invented by children, from memory or based on images, serve as a means to approach the narrative next, fostering the desire to read. While reading a story, the teacher can communicate their reading strategies to the children with the aim of fostering attentive listening. Additionally, storytelling creates opportunities for children to narrate their own stories. It finds expression in theatre projects, where stories and dialogues are recreated or invented. Educators and educational institutions should provide material that facilitates language development (Direção-Geral da Educação, 2016).

People have a tradition to transfer knowledge of the environment, and local traditions to the next generation through narration. In order to enhance learning outcomes related to storytelling, educators can utilize storytelling as a pedagogical tool, capturing students' attention and entertaining them. It has the capacity to make sustainability more easily accessible (Hofman, 2022).

4 Examples of Good Practices

4.1 Example 1

The project “Tapete-história Azul”, implemented in schools in the city of Coimbra, aimed to raise awareness within the school community about the importance of the SDGs and encourage environmentally sustainable behaviour, in order to mitigate the effects of climate change. It stemmed from the necessity to address the subject matter tailored to the children's age group. Although initially proposed by educators, 50 children actively participated in its development. The students, with the involvement of their families, brought old fabrics and plastics from home, which were then woven into a carpet with the support of their teacher. Additionally, they carried out research on marine animals, in particular the blue whale, and took part in a field trip to the Lisbon Oceanarium, utilizing the train as a means of transport, due to its environmental benefits. Furthermore, the children created a story defining the characters and the plot elements (UNICEF & Direção-Geral da Educação, 2017).

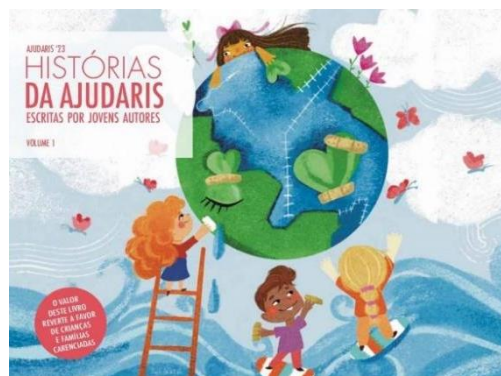
The outcome of the project resulted in the children gaining a deeper understanding of global warming, as well as the pollution affecting the seas and oceans, and their interconnection with species extinction (UNICEF & Direção-Geral da Educação, 2017).



4.2 Example 2

The Ajudaris association is a non-profit founded in June 2008. In 2009, the “Ajudaris Stories” project was initiated and established the following goals: fostering and enhancing reading and writing habits; encouraging citizenship and solidarity; and strengthening the connection between school, family and community contexts. It is an annual challenge proposed to schools nationwide to create collective stories through the imagination and creativity of the participants. The project encourages children and young people to work on a given theme under the guidance of their educators and teachers. They are invited to explore any literary genre, with the goal of producing a creative and collaborative text as the final product. The copies are then sold and the funds raised are directed towards the association's ongoing social projects. “Planet” is the theme proposed for the 2023/2024 school year (Ajudaris, n.d.).

The “Ajudaris Stories” project promotes oral expression, phonological awareness, writing skills, grammar skills and reading skills (Castro, 2016). The project saw the participation of 272 municipalities in Portugal, receiving more than 1,600 stories (Ajudaris, n.d.).



4.3 Summary of interviews with experts in storytelling

Paula Mira Fernandes

Q.1: Can you tell me about your background and experience in storytelling, particularly in educational contexts?

I have worked for 25 years in teaching and training adults with low educational backgrounds. At the age of 45, I decided to pursue a master's degree in teaching English for the 1st cycle. During my studies, I met two professors who are national and international references: Sandie Mourão and Carolyn Leslie, from the languages department. They promote the use of picture books in teaching English in the 1st cycle. I was captivated by this new concept of the picture book, which is not just a text but also an image, and both present a story, not necessarily the same one. Over the years, I have read books at events of various scales, interpreted books at conferences, and told stories in the pediatric wing of a hospital. This year, I read 8 books to my classes, constantly adapting my storytelling to suit the day and the students' moods.

Q.2: Have you previously worked on projects that integrate storytelling with themes such as sustainability or the SDGs (Sustainable Development Goals)?

While I have not yet specifically addressed the themes of the SDGs and sustainability in my storytelling, I have covered topics such as pollution, nature protection, wild animals, bullying, inclusion, emotions, food, and transportation.

Q.3: What storytelling techniques do you consider most effective for engaging young children (ages 3-8)?

I find that stories with many repetitions help children assimilate the message better. Additionally, I use various interactive and hands-on techniques to engage young children effectively. These include finger puppets, practical activities ("realia"), and incorporating small objects like miniature vehicles to discuss transportation. I also involve real objects that are relevant to the students' reality and cultural traditions. It's important to connect the stories

to the children's reality and traditions. Furthermore, I involve parents and grandparents in storytelling activities, which excites the children and makes them more engaged.

Q.4: How can storytelling be used effectively to introduce complex concepts like sustainability and the SDGs to young children?

Storytelling can be an excellent tool to introduce complex concepts like sustainability and the SDGs by making these topics relatable and engaging for young children. For example, using a story that features characters dealing with environmental issues, such as pollution or conservation, can help children understand the importance of sustainability. An activity that complements the story could be a classroom project where children create art from recycled materials, helping them grasp the concept of recycling and environmental responsibility in a hands-on and memorable way.

Q.5: What common challenges do educators face when using storytelling to teach about sustainability, and how can they overcome them?

One challenge is ensuring that stories are relevant to the students' experiences. It's essential to spend time reading, studying a book, and coming up with creative activities that align with the educational program. Involving families in storytelling projects can also help reinforce the concepts being taught.

Q.6: How can storytelling be used to engage not only children but also their families and the wider community in sustainability practices?

Involving parents, grandparents, and other family members in storytelling activities is crucial. For example, during storytelling sessions, I have asked families to participate in making items related to the story at home. For example, when I read the story "Worry Doll," I used the concept of the rag doll to ask students to make their own rag dolls with their families' participation. Such activities make complex concepts more relatable and engaging for young children. This kind of engagement excites children and makes them more invested in the story and its message. Additionally, public events that incorporate storytelling can reach a broader audience and promote community involvement in sustainability practices.

Q.7: Do you have any suggestions for activities or projects that can extend storytelling beyond the classroom?

Absolutely. One successful activity was using the story "Shark in the Park," where children used a toilet paper roll as a telescope to look for the shark's fin. Such imaginative activities can be extended to home projects, encouraging children and their families to explore stories creatively and practically. The story about "worry dolls" also enabled me to involve families at home.

Q.8: How can educators assess the impact of storytelling on children's understanding and attitudes towards sustainability?

When the weakest student shines in the final presentation, it's an indication that the storytelling approach has been effective. Additionally, seeing students' engagement and their ability to reproduce or creatively adapt the story elements shows they have understood and internalized the concepts. For instance, when students actively participate in activities like making rag dolls at home with their families or using props during storytelling, it demonstrates their understanding and enthusiasm.

Q.9: Are there specific resources (books, websites, tools) that you would recommend to educators looking to use storytelling to teach sustainability?

While my experience is more focused on storytelling in general, I can recommend some excellent storytelling resources that can be adapted to teach sustainability. One book I have successfully used is "Just a Minute," which captivates children's attention and can be tied to various themes. Tools like Plickers are very effective in the classroom because they allow all students to participate without fear of making mistakes, as individual errors are not highlighted. By using these resources creatively, educators can incorporate sustainability themes into their storytelling sessions. Additionally, seeking out picture books that address environmental themes and adapting existing storytelling tools to focus on sustainability can be very effective.

Q.10: What kind of training or professional development do you think is necessary for educators to become proficient in using storytelling for sustainability education?

Training and professional development are crucial not only for educators but also for fostering an environment that supports innovative teaching methods like storytelling. Personally, the public school I work at provides me with the wings and freedom to dream. The school administration believes in my work and allows me to passionately pursue

storytelling as an educational tool. This supportive environment is essential for educators to feel empowered and encouraged to experiment with new approaches.

In terms of training, workshops that focus on storytelling techniques, integrating sustainability themes, and adapting storytelling for different age groups are invaluable. However, it's equally important for educators to have the autonomy and support to apply these techniques creatively within their classrooms. When educators feel supported and inspired, they can effectively engage students and their families in meaningful sustainability education through storytelling

Sónia Silva

Q.1: Can you tell me about your background and experience in storytelling, particularly in educational contexts?

I have a degree in Portuguese and English teaching. I initially worked with middle school students, but now I teach English in the elementary school. I have been a teacher for 24 years. As an author, I have two works: one titled "O Tomé" and the more recent "O João sem Coração," both related to children's literature. I also engage in poetry and participate in literature-related events.

I have a project focused on using picture books written in English, in collaboration with Erasmus+ partners ([ICEKits – Icepell](#)). This project explores Interculturality and citizenship, and "Ice Kids," where children help teachers incorporate books into classroom contexts. Through a book, we create interdisciplinary projects, integrating various subjects.

Storytelling was the focus of my master's thesis. I consider that storytelling allows for connecting various themes and bridging disciplines and topics, especially sustainability and the SDGs.

Q.2: Have you previously worked on projects that integrate storytelling with themes such as sustainability or the SDGs (Sustainable Development Goals)?

Regarding the SDGs, they are always implicitly present, interconnected, and underlying, though not specifically. I do address environmental themes, but not specifically the SDGs.

Q.3: What storytelling techniques do you consider most effective for engaging young children (ages 3-8)?

I always start by physically exploring the book, examining the cover, back cover, etc. Then, I relate the anticipated concepts to what the students already know, fostering creativity and listening to their opinions. Next, we read the story broadly the first time and then page by page, before transitioning to digital support. We engage in pre-reading activities related to the book's context, such as recycling games. Bodily and gestural language is crucial and directly linked to the book being studied, demanding significant expressiveness. Subsequently, the work is associated with the context and specific objectives of the story. Physical contact with books is very important in storytelling.

Q.4: How can storytelling be used effectively to introduce complex concepts like sustainability and the SDGs to young children?

Storytelling can effectively introduce complex concepts like sustainability and the SDGs to young children by making them relatable and engaging through the use of picture books and hands-on activities. For instance, by using a picture book related to recycling, we can adapt its context to the local reality of our students. In Fafe, we did this by involving students in a project where they spent time with street sweepers, learning about their work and participating in cleaning parts of the city. This hands-on experience, coupled with the storytelling, helps children understand the importance of recycling and environmental stewardship in a tangible and memorable way. Additionally, we explore themes like global warming through stories and community projects, such as involving parents who work in wind and hydraulic energy sectors. This approach connects the story to real-life applications, making abstract concepts more concrete and comprehensible for young learners.

Q.5: What common challenges do educators face when using storytelling to teach about sustainability, and how can they overcome them?

Educators often face challenges in maintaining student motivation and capturing their attention with physical books. Therefore, I emphasize having students touch and handle the books before transitioning to digital formats. A storyteller, when narrating, needs to have an

educational objective behind it. Anyone can be a storyteller, even a child, as long as they know what they are doing and depending on the objective they want to achieve. The main characteristic is being an actor, because without this aspect, it is not easy to capture the students' attention and bring the story to life in a way that motivates and engages them with the book, which is the main goal. Having knowledge of what you are doing is essential, just like actors study their scripts.

Q.6: How can storytelling be used to engage not only children but also their families and the wider community in sustainability practices?

Storytelling can involve a variety of activities, beginning with studying the community and local context where we live. For example, in Fafe, we explore the use of wind and hydraulic energy, involving parents and the municipality.

Q.7: Do you have any suggestions for activities or projects that can extend storytelling beyond the classroom?

We take a picture book and identify how each subject can contribute, promoting community action such as with the "Clean Up" book related to recycling. We adapt the book's context to our local reality, city, and students.

In my city, Fafe, we collaborate with street sweepers, a profession facing extinction, not well-known in other countries. We conduct interviews and spend time with them cleaning specific areas of the city. We also address themes of feelings and respect for others through book presentations.

Q.8: How can educators assess the impact of storytelling on children's understanding and attitudes towards sustainability?

The impact can be assessed throughout the storytelling implementation process. After listening to a story, we evaluate students' reactions using smileys or forms to gauge their enjoyment. Evaluation is crucial and can involve methods like the "star" method, where students indicate what they would change or keep in the story at various points and in the final assessment. The community's receptivity, the attitude of staff, the involvement of participating companies, and parental participation in activities are also evaluated. Methods are tailored according to the age group of the students.

Q.9: Are there specific resources (books, websites, tools) that you would recommend to educators looking to use storytelling to teach sustainability?

There is a diversity of children's literature that can be used for storytelling on various themes, including sustainability. For instance, picture books like "Clean Up" about recycling can be used to address the SDGs. Other examples include "Sad Cloud," which deals with water usage, conservation, and preservation. Utilizing a range of picture books can help make sustainability concepts more accessible and engaging for young children.

Q.10: What kind of training or professional development do you think is necessary for educators to become proficient in using storytelling for sustainability education?

Specific training should include workshops on storytelling techniques, integrating sustainability themes, and adapting storytelling for different age groups. Additionally, understanding how to explore and utilize the structure of a book is important. Educators need to be able to make the connection between the book, the story, and the educational objectives. Having knowledge of how to engage students, similar to how actors study their scripts, is also vital for effectively bringing stories to life in a way that motivates and captivates students.

4.4 Summary of interviews with experts in sustainability

Ángeles Villaverde

How to Implement the SDGs in Education: design of STEAM learning situations

The conference began by identifying global challenges and exploring their impact on learning and education. The expert addressed the methodologies employed in STEAM and the HiTech tools. It was outlined that the school curriculum contains superfluous content, while essential topics for the 21st-century society are often excluded.

An example of a STEAM project focusing on refugee camps was presented. Titled “Improving Living Conditions in Refugees Camps through Design and Technology”, the project aimed to implement innovative and sustainable solutions to enhance the quality of life for refugees. The students advanced their research, creativity, and collaboration skills. Their work covered a range of topics, including biology and health, physics and materials, ecology and sustainability, climate analysis, design and space optimization, budgeting and resource management, structural and functional design, energy efficiency, logistics and resource management, 3D modelling and visualization, material and technology selection, and technical documentation. Students created designs for containers to function as classrooms, counselling rooms, and recreational areas.

The project comprised the following stages: problem definition and investigation, brainstorming, needs assessment, design and prototyping, material selection and feasibility, service integration, sustainability and environmental impact, and documentation and evaluation. The project's dissemination strategy included the creation of a website to serve as a central platform for information and results. Additionally, there was a commitment to the local community through the organisation of presentations and exhibitions aimed at educating individuals about the realities of refugee camps and the use of containers. At last, the students reviewed their peers' work and received feedback from refugees and organizations.

The processes employed, the final product, and the competencies acquired throughout the project were evaluated. To conclude the conference, Ángeles Villaverde provided a brief overview of other relevant projects.

Diogo Vidal

Education for Post-Sustainability: Teachers as Agents of Change

The conference addressed the topic of education within the framework of post-sustainability, emphasizing the crucial role of teachers as agents of change. It began by clarifying the concept of sustainability, outlining its various interpretations provided by physicians, scientists and other experts on the subject. The term “Anthropocene” was then introduced.

Originally, proposed by Paul Crutzen and Eugene Stoermer in 2000 and popularized in 2012, it refers to a new geological period characterized by human activity having a significant impact on the planet's climate and ecosystems. The term prompts discussions about human responsibility and presents two scenarios: one of tragedy, where humanity proves incapable of change, and another of transformation, where an alternative future emerges in which humanity learns and evolves. Environmental objections of technological solutions, which frequently convey a catastrophic outlook for the future, have sparked questions about the viability of existing development models and the need for new approaches that better integrate environmental concerns.

The United Nations World Commission of Development and Environment defined Sustainable Development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. This definition implies maintaining current living standards while avoiding environmental damage. The notions of weak and strong sustainability, which encompass the dimensions of nature, society and environment, were explored. Weak sustainability suggests that sustainability can be replaced by other necessities, whereas strong sustainability argues that sustainability is irreplaceable and constitutes the most fundamental necessity. The expert clarified the origin and evolution of the term Sustainability, including its application across various contexts. It was noted that there are criticisms regarding the superficial use of the term.

Sustainability has its limitations, such as passive logic, focused primarily on preservation, and framed within an Anthropocene perspective. The expert analysed the concept of planetary boundaries, which identifies a set of nine boundaries within which humanity can develop and thrive in the future. Furthermore, it was mentioned that the challenge of sustainability is human unsustainability. Diogo Vidal discussed the limitations of the traditional environmental education, focused on problem-solving and neglecting contemporary social and ecological issues. It was highlighted the need for new educational approaches that are inclusive and transformative. Simply incorporating additional content into school curricula is insufficient, since it is essential to reframe the vision of education. Edgar González-Gaudio introduced the concept of “empty signifiers” to highlight the flaws in the approach of education for sustainable development. In fact, the coining of new terms does not address the underlying issues. Therefore, it becomes necessary to fundamentally reframe education by addressing cultural, social, and environmental issues. This involves fostering education that cultivates deep respect and sustainable relationships with the world. In this context, new educational practices were identified and analysed.

To conclude, post-sustainability entails transformative change, challenging established power structures and developing alternative models that prioritize well-being and environmental preservation. Changes in individual behaviour are insufficient. In closing the conference, the concepts of both regenerative and degenerative systems were presented and discussed.

Vítor Ribeiro

Education for Sustainability: Contributions of GIT and Interdisciplinarity

The conference with the expert emphasized that environmental education for sustainability constitutes a fundamental component of education, as it fosters awareness, promotes values, and facilitates behavioural change. Additionally, it was highlighted that environmental education is integrated into curricula and reflected in projects developed by schools in collaboration with other institutions. At present, technology holds a significant place in education. However, video as an interdisciplinary tool has yet to be fully integrated into pedagogical practices. Incorporating video to assist the education process and display real-life situations can be more successful in teaching than text, since advancements in laptops and mobile devices enhanced students' engagement with video content. Given the current challenges, the expert recognized the digital era as a strength and the development of Geographic Information Systems (GIS) and video (as a pedagogical tool) as substantial opportunities.

Place-based learning is a non-traditional pedagogical approach centred in engaging students with their environment, including physical surroundings, cultural aspects, historical context and individuals. It enables the resolution of current community issues and the achievement of the Sustainable Development Goals (SDGs), by fostering critical thinking and encouraging student autonomy to address social and environmental challenges.

Vítor Ribeiro introduced a project aimed at developing a pedagogical tool designed to enhance learning through video. The goals are to foster active learning, research, and

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collaboration within the classroom setting. In 2022, the project involved 32 students, while in 2023, it included 18 students. Participants were tasked with creating a 10-minute video about a street in the city of Porto, Portugal. Following the selection of the location, they conducted research, analysed the space through interactive maps and other tools, and conveyed a narrative through their videos. The deliverables consisted of an intermediate guide and a final video. The results of a final survey to assess students' perception were presented at the conference, revealing that nearly all students believe video is a valuable resource for learning about sustainability. The primary filming resource was a mobile phone, while the main source for localization was Google Earth. Students expressed the intention to employ this methodology in the future.

5 Recommendations

Incorporating storytelling into early childhood education has proven to be a powerful tool for fostering creativity, language development, and critical thinking skills among young children. Moreover, integrating storytelling with sustainability education presents a unique opportunity to instil environmental awareness and promote social responsibility from an early age. In light of this, the following recommendations outline strategies for enhancing CST activities by integrating storytelling with sustainability education, utilizing multimodal approaches, linking storytelling with Sustainable Development Goals (SDGs), supporting educator training, fostering collaboration, and sharing best practices. These recommendations aim to enrich the learning experience of children in early childhood settings while fostering a deeper understanding of sustainability concepts.

1. **Integrating Storytelling with Sustainability Education:** Encourage the integration of storytelling techniques into sustainability education initiatives within early childhood education and care (ECEC) settings. Develop storytelling initiatives that specifically focus on sustainability themes, such as recycling, climate change, biodiversity, and energy conservation. Provide training and resources for educators on how to effectively use storytelling to communicate sustainability concepts to young children.
2. **Utilizing Multimodal Storytelling Approaches:** Explore diverse tools, methods, and approaches for multimodal storytelling in pre-schools, including both traditional and digital storytelling formats. Emphasize the use of storytelling sessions that incorporate different senses and encourage interactive engagement among children.
3. **Linking Storytelling with Sustainable Development Goals (SDGs):** Promote storytelling initiatives that explicitly aim to support the integration of Sustainable Development Goals (SDGs) into early childhood education. Encourage educators to develop storytelling activities that highlight the importance of environmental stewardship, social responsibility, and economic sustainability in achieving the SDGs.
4. **Supporting Educator Training and Professional Development:** Provide professional development opportunities for educators to enhance their storytelling skills and effectively integrate storytelling into the curriculum. Offer resources and guidance on selecting age-appropriate books, creating engaging storytelling sessions, and facilitating meaningful discussions around story themes.
5. **Fostering Collaboration and Community Engagement:** Encourage collaboration among educators, parents, local communities, and relevant stakeholders to support storytelling initiatives in pre-schools. Foster partnerships with organizations, such as non-profits or local libraries, to access additional storytelling resources and expertise.

6. **Evaluating and Sharing Best Practices:** Establish mechanisms for evaluating the impact of storytelling initiatives on children's learning outcomes, including their understanding of sustainability concepts. Share successful storytelling practices and case studies from Portugal and other regions to inspire and inform future CST activities.

By implementing these recommendations, Creative StoryTellers can enhance their activities and contribute to the holistic development of children, while also promoting sustainability education in early childhood settings. Through engaging storytelling sessions and interactive activities, Creative StoryTellers have the opportunity to instil environmental awareness and social responsibility in young learners.

Project partners play a crucial role in supporting the integration of storytelling and sustainability elements more effectively. By offering tailored training programs and providing necessary resources, project partners empower Creative StoryTellers to effectively implement sustainability education initiatives. This collaborative approach ensures that early childhood educators have the tools and support they need to inspire the next generation of environmentally conscious citizens. Here is how they can do it:

1. **Training Programs for Educators:** Develop comprehensive training programs specifically designed for educators working in early childhood education and care (ECEC) settings. These programs should focus on enhancing educators' storytelling skills, deepening their understanding of sustainability concepts, and providing practical strategies for integrating storytelling with sustainability education.
2. **Professional Development Workshops:** Organize regular professional development workshops or seminars where educators can learn new storytelling techniques, share best practices, and collaborate with peers. These workshops can also feature guest speakers or experts in sustainability education to provide additional insights and inspiration.
3. **Resource Materials:** Provide educators with a range of resource materials to support their storytelling efforts and sustainability education initiatives. This could include age-appropriate books, storytelling kits, multimedia resources, and lesson plans that incorporate sustainability themes.
4. **Online Learning Platforms:** Create online learning platforms or portals where educators can access training modules, instructional videos, and other educational resources at their convenience. These platforms can also facilitate communication and collaboration among educators, allowing them to share ideas and experiences.

5. **Mentorship Programs:** Establish mentorship programs where experienced educators can mentor newer colleagues in integrating storytelling and sustainability elements into their teaching practices. This peer-to-peer support can be invaluable in helping educators implement new strategies effectively.
6. **Community Engagement Initiatives:** Engage parents, caregivers, and local community members in supporting storytelling and sustainability education initiatives. This could involve organizing community storytelling events, hosting sustainability workshops, or inviting community members to share their knowledge and expertise with children.

By providing targeted training programs, resource materials, and opportunities for collaboration and mentorship, project partners can empower educators to effectively integrate storytelling and sustainability elements into their teaching practices, ultimately enhancing the learning experience for children in ECEC settings. However, implementing these recommendations may encounter several challenges.

One potential challenge is limited awareness and understanding among educators and project partners. They may have insufficient knowledge or understanding of how to effectively integrate storytelling with sustainability education. To address this challenge, it is essential to provide comprehensive training and professional development opportunities. Workshops, seminars, and online resources can be offered to increase educators' knowledge and skills in this area.

Another challenge is resource constraints, including a lack of books, materials, and training facilities. This shortage may hinder the implementation of storytelling and sustainability initiatives. Seeking funding opportunities to procure necessary resources and collaborating with local libraries, non-profit organizations, and community partners can help mitigate this challenge.

Resistance to change is also a potential obstacle, as some educators or stakeholders may be resistant to new approaches to teaching. Fostering a culture of openness to experimentation and continuous improvement within the organization can address this challenge. Providing ongoing support and encouragement to educators as they explore new methods and strategies is crucial.

Time constraints may pose another challenge, as educators may feel overwhelmed by existing curriculum demands and limited time. Integrating storytelling and sustainability elements into existing curriculum frameworks can help minimize additional workload. Emphasizing the value and benefits of these initiatives in enhancing learning outcomes and fostering holistic development in children is important.

Ensuring active engagement and participation from children, educators, parents, and community members in storytelling and sustainability activities may also be challenging. Implementing interactive and participatory storytelling techniques that captivate children's interest and involve parents and caregivers through family storytelling events and workshops can help address this challenge.

Finally, evaluating and monitoring the impact and effectiveness of storytelling and sustainability initiatives may be difficult without adequate evaluation mechanisms. Establishing clear goals, objectives, and evaluation criteria and implementing regular assessments, surveys, and feedback mechanisms can help gather data on learning outcomes and participant satisfaction.

By proactively addressing these challenges and implementing appropriate solutions, CST can successfully integrate storytelling and sustainability elements into their activities, enriching the learning experience for children and fostering a deeper understanding of environmental stewardship and social responsibility.



6 Conclusion

In conclusion, the analysis of Early Childhood Education and Care (ECEC) in Portugal reveals a comprehensive framework aimed at fostering the holistic development of children while addressing societal needs and challenges. The country has made significant strides in providing accessible and quality ECEC services, as evidenced by initiatives such as "Primeiros passos, infância saudável, vida feliz" and the provision of free ECEC for disadvantaged families.

However, despite these efforts, there are areas for improvement, particularly in the integration of sustainability education and storytelling into ECEC settings. While sustainability education is present in the curriculum guidelines, there is a need for more robust implementation strategies and resources to support educators in effectively incorporating sustainability themes into their teaching practices. Similarly, while storytelling is recognized as a valuable pedagogical tool, there is room for enhancing its integration with sustainability education initiatives.

To address these challenges and capitalize on opportunities for improvement, several recommendations are proposed. These include encouraging the integration of storytelling techniques into sustainability education initiatives, exploring diverse tools and approaches for multimodal storytelling, linking storytelling with Sustainable Development Goals (SDGs), providing professional development opportunities for educators, fostering collaboration and community engagement, and evaluating and sharing best practices.

In addition to national initiatives, various local projects and programs contribute to the promotion of sustainability education and storytelling in ECEC settings. For example, the Cascais Environmental Education Guide offers practical activities and resources for educators interested in implementing environmental education in preschools. Similarly, the Cascais Environmental Education and Awareness Programme provides a multidisciplinary range of activities complementary to the curriculum, promoting environmental awareness among children.

Furthermore, initiatives like the 360 Mission engage the entire educational community, including teachers and families, in environmental awareness projects. Meanwhile, projects like the "Tapete-história Azul" and the Ajudaris association's storytelling project foster creativity, literacy skills, and environmental consciousness among children through collaborative storytelling initiatives.

By implementing these recommendations and leveraging the resources and expertise offered by local projects and initiatives, Creative StoryTellers can enhance their activities and

contribute to the holistic development of children, while also promoting sustainability education in early childhood settings. Project partners play a crucial role in supporting these efforts through tailored training programs and the provision of necessary resources.

However, challenges such as limited awareness, resource constraints, resistance to change, time constraints, and ensuring active engagement may arise during implementation. Despite these challenges, proactive measures such as comprehensive training, seeking funding opportunities, fostering a culture of openness to experimentation, integrating storytelling and sustainability elements into existing curriculum frameworks, and establishing evaluation mechanisms can help overcome obstacles and ensure the successful integration of storytelling and sustainability elements into ECEC activities.

In conclusion, by addressing these challenges and implementing appropriate solutions, Portugal can further enhance its ECEC system, promote sustainability education, and empower the next generation to become environmentally conscious and socially responsible citizens.



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