ECO QUEST

NARRATIVE VIDEO GAME ON CLIMATE CHANGE

PEDAGOGICAL GUIDE

Teaching about the Environment and Climate Change through Narrative Video Games

Co-funded by the European Union

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In this pedagogical guide, developed as part of the **"EcoQuest - Narrative video game on climate change"** project, we aim to strengthen local youth work by providing youth workers with resources and learning activities focused on environmental education. This guide will equip trainers with scenarios and workshop activities designed to integrate the narrative video game into their programs, encouraging young people to take active roles in addressing environmental challenges and participating in democratic life. The guide explains the educational objectives of the project and offers detailed instructions for youth workers on how to effectively use these tools to engage young people in discussions about EU environment and climate policies. Through inclusive and accessible materials, we strive to foster youth participation in shaping and supporting EU environmental actions.

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Foreword

In recent years, the urgency of addressing environmental issues has become increasingly evident. Green education, also known as environmental education, either lifelong, informal, or non-formal, emerges as a crucial response to this global challenge. With the rapid acceleration of climate change and environmental degradation, there is an urgent need to equip the younger generation with the knowledge, skills, and values necessary to address these pressing challenges. This pedagogical guide seeks to provide a comprehensive approach to teaching about the environment and climate change through innovative methods such as narrative video games, designed specifically for youth workers and trainers operating in non-formal educational settings.

Climate change, biodiversity loss, pollution, and resource depletion are no longer distant threats; they are realities affecting communities worldwide. This guide is a response to the urgent need for education that not only informs but empowers young people to take meaningful action. By focusing on an integrated approach, we aim to move beyond traditional methods of instruction and engage young people in a way that is relevant to their experiences and interests.

Youth workers and trainers who are at the forefront of implementing activities related to environmental education for young people. These individuals play a crucial role in shaping the perspectives and actions of future generations. In this guide they find two types of chapters: those introducing them to important topics to focus on in relevant activities, and those that also show how youth work itself and ultimately young people can contribute to a better and sustainable environment and raise public awareness of topics in question.

Moreover, this guide emphasises the importance of an integrated approach to environmental education. By combining knowledge from various disciplines and perspectives, we aim to provide a holistic understanding of environmental challenges and solutions. This approach encourages learners to see the interconnectedness of social, economic, and environmental systems and to recognize the importance of collaboration and collective action in addressing these issues.

We also acknowledge the necessity to create an inclusive learning environment that caters to the diverse needs of learners. This guide provides strategies to ensure accessibility, cultural relevance, and a supportive atmosphere, enabling all young people to engage fully with the learning activities.
In conclusion, this pedagogical guide is not just a resource for teaching about the environment and climate change - it is a call to action. It is an invitation to youth workers and trainers to join us in the vital task of educating and empowering the next generation. By embracing innovative methods and an integrated approach, we can inspire young people to become stewards of the planet, equipped with the knowledge, skills, and values necessary to create a sustainable and just future. We are excited to embark on this journey with you and look forward to the transformative impact we can achieve together.

Chapter 1: Green Education

In recent decades, the urgency of addressing environmental issues has become increasingly evident. Green education, also known as environmental education, either lifelong, informal, or non-formal, emerges as a crucial response to this global challenge.

1.1 Overview of environmental education objectives and principles

Objectives of environmental education

- **Awareness building** - Aiming to raise awareness about pressing environmental issues such as climate change, biodiversity loss, pollution, and resource reduction. By understanding the interrelation of human actions and their environmental impacts, individuals are empowered to make informed decisions.
- **Gain knowledge -** Providing comprehensive and accurate information about environmental processes, ecosystems, and sustainable practices forms a foundation that equips learners with the tools to critically evaluate environmental issues and propose viable solutions.
- **Skill development** - Emphasising the development of practical skills necessary for sustainable living. These skills may include waste reduction strategies, energy conservation techniques, organic gardening, and advocacy for environmental policies.
- **Attitude formation** - Encouraging pro-environmental attitudes, values, and ethics is fundamental to environmental education. By fostering empathy towards nature and promoting a sense of responsibility for environmental conservation, this educational approach cultivates a lifelong commitment to sustainable practices.

Principles of environmental education

- **Integrative approach** - Integrating knowledge from various disciplines ensures a comprehensive understanding of environmental issues and promotes holistic solutions.
- **Experiential learning** - Hands-on experiences, outdoor activities, and practical projects engage learners directly with their natural surroundings which fosters a deeper connection to the environment and reinforces learning outcomes.
- **Critical thinking** - By analysing complex environmental issues from multiple perspectives, learners are empowered to propose innovative solutions and contribute to sustainable development.
- **Participation and action** - Empowering individuals to take proactive steps towards environmental conservation is a core principle. Through community engagement, advocacy campaigns, and collective action, learners become active agents of positive change in their communities. (US EPA, 2024)

By embracing these objectives and principles, **environmental education not only equips individuals with the knowledge and skills to address current environmental challenges but also inspires a collective commitment to building a sustainable future.** (UNESCO, 2024)

Check out our EcoQuest article to learn more!

Short exercise:
Identify two environmental issues in your community and suggest one sustainable practice to address each.

🧐 **Interesting Fact! Did you know?**
Over 90% of the world's population breathes polluted air. (WHO, 2024)

1.2 Creating an inclusive learning environment

While our resources are designed to be inclusive, it is crucial to verify that all tools and methods fit your students' needs, to ensure that all students can engage and benefit from the activities.

Accessibility

- **Visual accessibility** - Inclusive font, sufficient text size and line spacing (1.5), high-contrast colour schemes, no italics, bold text for emphasis, image descriptions or alternative texts, to help students with visual impairments or learning disorders.
- **Auditory accessibility** - Clear audio content, corresponding subtitles and visual alerts, to assist students who are deaf or hard of hearing or who struggle to process information.
- **Motor accessibility** - Adaptive and assistive technologies, such as controllers or keyboards that can be navigated with minimal motor skills.

Cultural relevance

- **Reflecting diversity** - Representation of perspectives from diverse backgrounds and discussion of climate issues that affect various communities differently, to help all learners see themselves in the content and relate to different viewpoints.
- **Addressing local and global issues** - Discussions about worldwide challenges and local environmental issues to help students understand broader impacts and foster a sense of global citizenship while acknowledging issues that directly affect their community.

Supportive and collaborative environment

- **Encouraging dialogue** - Discussions for students to explain their decisions within the game and their real-world implications and to express their thoughts and feelings about the issues presented, fostering critical thinking and empowerment.
- **Promoting collaboration** - Group activities to encourage active participation, build social skills, foster a sense of community and allow learners to cooperate on problem-solving, mirroring the real collaborative efforts to tackle environmental issues.

Inclusivity checklist: Follow a checklist or step-by-step guide to ensure accessibility, diversity and support when preparing and implementing activities. Set up an adapted list or framework to make sure you consider all of your students' needs. Example by Inclusion Expert.

Example of successful practice: The Roots & Shoots program, founded by Dr. Jane Goodall, promotes inclusivity within environmental education, focusing on empowering young people from various backgrounds, to initiate positive change for marginalised communities, animal rights, and the environment.

Tips

Preparation: Organise a discussion before the game about its content, objectives, and the kind of decisions it'll ask the players to make, to set expectations and reduce any anxiety about new learning tools or harnessing new perspectives and serious issues.

Relevance: Align the game with the curriculum to justify its relevance and meaning and show how its content relates to learning standards or impacts in students' lives.

Step by step: Ensure that the tasks around the game are structured and segregated into different steps, with clear and specific instructions for each task to avoid overwhelming students who may have difficulties with multitasking or time management.

1.3 Further readings

D-ESL project. (2024). DYS-friendly practice sheets.

MOOCDys project. (2020). The MOOC.

University of Oxford - Centre for Teaching and Learning. (n.d.). IncludED: A guide to inclusive teaching.

DIGRA Digital Games Research Association. (2017). CFP: DIGRA 2017 Workshop: "Gaming the Systems: Towards a More Inclusive DIGRA."

Chapter 2: Understanding the Earth's Dynamics

In this chapter, we delve into the complex workings of our planet by explaining key terms and concepts essential for understanding the Earth's dynamic systems. We will explore the importance of biodiversity, the impacts of climate change on ecosystems, and how societal and economic activities influence the environment.

2.1 Explanation of key terms and concepts

- **Environment** - The environment encompasses all external conditions and influences that affect the life and development of organisms. This includes both natural elements, as well as human-made components. Understanding the environment is crucial for recognizing how different factors interact and affect the health and sustainability of ecosystems.
- **Ecology -** Ecology is the scientific study of interactions among organisms and their physical surroundings. It examines how organisms influence and are influenced by their environment, focusing on relationships within ecosystems.
- **Biodiversity** - Biodiversity refers to the variety and variability of life on Earth, covering the diversity within species, between species, and of ecosystems. High biodiversity ensures ecosystem resilience, enabling it to withstand disturbances and maintain functionality.
- **Climate -** Climate is the long-term weather pattern of a region, averaged over 30+ years, including temperature, precipitation, humidity, wind, and seasons. Understanding climate helps predict weather trends, manage resources, and tackle climate change.

Exercise:

Research and list three ways biodiversity benefits human life.

Do you need help?

These sources should provide valuable information and help you identify and understand how biodiversity benefits human life:

1. Use keywords like "biodiversity benefits" to find academic papers and studies on Google Scholar

2. Check out World Wildlife Fund (WWF) and United Nations Environment Programme (UNEP) for articles and reports on the importance of biodiversity and its impacts on human life.

🧐 Interesting Fact!

Did you know?

The Arctic is warming twice as fast as the rest of the planet, causing ice sheets to melt rapidly, contributing to rising sea levels, and disrupting global weather patterns. (WWF, 2024)

2.2 Understanding biodiversity and its significance

Biodiversity is fundamental to the health and stability of ecosystems. It provides a wide array of ecological services that are critical to human existence.

These services include:

- **Pollination** -Many plants, including crops, rely on insects, birds, and other animals for pollination.
- **Water purification** - Wetlands and forests filter pollutants from water, providing clean water for drinking and irrigation.
- **Soil fertility** - Diverse soil organisms decompose organic matter, recycling nutrients and maintaining soil fertility.
- **Climate regulation** - Oceans and forests act as carbon sinks, absorbing carbon dioxide and helping regulate the Earth's climate.

The loss of biodiversity can lead to the collapse of ecosystems, making them less resilient to environmental changes. Conservation of biodiversity is, therefore, essential for sustainable development and human well-being. (WWF, 2022)

How does the EU protect nature?
For more information read Biodiversity: how the EU protects nature.

Interesting Fact! Did you know?

Pollinators, such as bees, are crucial for the reproduction of approximately 87 of the world's leading food crops. Their contributions are valued at over $500 billion annually in global agriculture. (FAO, 2024)

Exercise:

Take a walk in a local park, garden, or natural area. Reflect on any changes or signs of biodiversity loss you might observe. **Maybe you can propose a local action.**

You don't know how? Check out the Save & Game Erasmus+ project with great ideas and detailed description on how to start a local action.

2.3 Impacts of climate change on ecosystems

Climate change, driven by human activities such as fossil fuel burning and deforestation, is having profound effects on ecosystems worldwide. (IPCC,2024)

Key impacts include:

- **Temperature rise** - Higher temperatures affect species distribution, with many moving towards cooler areas. Some species may face extinction if they cannot adapt or migrate.
- **Changes in rainfall** - Changed rainfall patterns can lead to droughts or floods, affecting water availability and ecosystem health.
- **Ocean acidification** - Increased carbon dioxide absorption by oceans lowers pH levels, harming marine life, especially coral reefs and shellfish.
- **Extreme weather events** - More frequent and severe storms, heatwaves, and wildfires disrupt habitats and biodiversity.

These impacts compromise ecosystem services, threatening food security, water supply, and human health. **Mitigating climate change and protecting ecosystems are critical to preserving biodiversity and sustaining life on Earth**. (IIED, 2024)

🧐 Interesting Fact! Did you know?

Coral reefs support more species per unit area than any other marine environment. They are home to roughly 25% of all marine species despite covering less than 1% of the ocean floor.(UNEP, 2024)

Exercise:

Think about and identify one way that climate change has impacted your local environment. For example, you might notice changes in local weather patterns or increased frequency of extreme weather events!

2.4 Impact of the society and economy on the environment

Human society and economic activities have a significant influence on the environment. The relationship between these factors is complex and multifaceted. (National Geographic, 2024)

From society:

- **Urbanisation** -The expansion of cities leads to habitat destruction, increased pollution, and greater resource consumption.
- **Consumption** - High levels of consumption, especially in developed countries, drive resource depletion and waste generation.
- **Cultural values** - Societal values and behaviours towards nature influence conservation efforts and environmental policies.

From economy:

- **Industrial activities** - Manufacturing, mining, and energy production are major sources of pollution and environmental degradation.
- **Agriculture** - Intensive farming practices lead to deforestation, soil erosion, and water contamination from pesticides and fertilisers.
- **Global trade** - The transportation of goods contributes to greenhouse gas emissions and environmental impacts associated with resource extraction and production.

Photo: Canva

Balancing economic development with environmental sustainability requires innovative approaches and policies that promote green technologies, resource efficiency, and equitable resource distribution. By understanding and addressing the interplay between society, economy, and the environment, we can work towards a more sustainable future.

Find out more!

Interesting Fact! Did you know?
Approximately 1.3 billion tons of food is wasted globally each year. (FAO, 2024)

2.5 Landscape diversity and its impact

Diversity is one of the defining characteristics or key words of nature and its systems. Diverse landscape is not only about a mosaic of forests, wetlands, fields, and meadows; a row of trees accompanied with some other vegetation or a wetland next to the river or around spring in the middle of a meadow are equally important. Even though it's needed to focus on global climate and actions against its change, attention should be paid on micro (local) level as well - because everything in nature is interconnected.

Fragmentation of landscape:

- Supports **biodiversity** - a variety of animals and plants that inhabit all those places (biotopes);
- Supports a favourable **microclimate** (climatic conditions in various areas on the surface of the earth) - depending on the composition, the temperatures are lower, air is cleaner and less dry, differences between two neighbouring areas are smaller, and thereby also movement between locations is rather pleasant, for both people and animals;
- Helps **keep water locally** as well as prevent big floods and pest increase.

Improving living conditions in **urban areas** is one of the key tasks of leaders and architects of modern cities. Next to traditional woodlands, parks, wetlands, and gardens, there are also new solutions such as green roofs or vertical gardens. Architects are often combining various biotopes in public spaces as well. All of that helps to minimise creation of **urban heat islands** or at least reduce their temperature. (National Geography, 2024) Last but not least, natural components can improve the aesthetic of the space.

How can anyone support biodiversity, better microclimate, and sustainability?

- Create small pond or having part of the garden where grass is not being cut;
- Contribute to greening the city through **community or guerilla gardening**. In this case, respecting legal regulations is also a must.
- Use principles of **permaculture** (land management based on what is observed in nature)
- Use principles of **organic gardening** (without chemicals).

Important note: When creating a garden that supports biodiversity, use of seeds of local plants is vital. Otherwise, so-called invasive species can spread quickly and do a lot of damage. Remember rabbits in Australia.

When it comes to bringing diversity back, one method included in the planning is to **look around and into history.** Wet places in park or terrain deformations indicate that there were various structures in the past. Old maps also show us what disappeared from our landscape and cities.

Examples of a good practice:

Turning a city green: Six Cities Making Room for Nature
Combining technology and plants for better air in cities: The CityTree
Landscaping supporting diversity in nature: Ecological Landscape Alliance
Helping people identify suitable places for afforestation: Forest and Climate project
Creating school garden: Life garden project and Life Garden on Solidarity Corps Web

Tip

When raising awareness about landscape diversity and related changes, it's very useful to use maps and aerial pictures, especially through tools that allow their direct comparison. Examples are Europe in the 19th Century and Map of Czech Republic on Geoportal.

2.6 Further readings

National Geographic - Environment. (n.d)

Save and Game project. (2024)

European Network for Rural Development. (2022). Landscape Features and Biodiversity.

EU CAP Network. (2023). Focus Group 'Enhancing the biodiversity on farmland through high-diversity landscape features'.

Jiawei Lin, Robert D. Brown. (2021). Integrating Microclimate into Landscape Architecture for Outdoor Thermal Comfort: A Systematic Review

Wei Yang, Yaolin Lin, Chun-Qing Li. (2018). Effects of Landscape Design on Urban Microclimate and Thermal Comfort in Tropical Climate

Thomas Panagopoulos. (2008). Using microclimatic landscape design to create thermal comfort and energy efficiency

Ulrich Walz. (2011). 4 Relations between landscape structure and biodiversity

Damian Holmes. (2021). Designing for change

Permaculture Research Institution. (n.d.). What is Permaculture ?

Think Agriculture. (2023). Sustainable Landscape Principles

Country Living. (2023). No garden? No problem. A beginner's guide to guerrilla gardening

Chapter 3: Empowering Youth and Taking Action

In this chapter, we focus on empowering youth to become proactive agents of environmental change. We emphasise the importance of youth participation and advocacy in addressing climate challenges. By engaging young people in decision-making, activism, and community involvement, this chapter provides youth workers with the tools to foster leadership, communication, and critical thinking skills. Through practical examples and strategies, we highlight how youth can influence policy and inspire collective action. The chapter also introduces debating as a method to enhance critical thinking and advocacy skills, equipping young people to effectively champion sustainable solutions for the future.

3.1 Youth participation and advocacy

Youth participation and advocacy mean getting young people involved in making decisions and helping them speak up about issues that matter to them. For youth participation to be effective, it's important to build strong relationships, offer training in how to advocate, and make sure young people's voices are truly listened to and included in policies and plans. So it is extremely important that youth workers have the proper knowledge and competencies to train and mentor them in this regard. (Corney, at all., 2022)

Youth participation can take many forms, such as:

- **Decision-making** - Involves young people in various levels of decision-making, from being consulted to collaborating and taking action. It focuses on empowering youth to have a say in matters that affect them.
- **Activism** - It is essential for youth participation, involving young people in efforts to bring about change. Examples include youth-led action or research projects aimed at improving communities.
- **Community involvement** - Includes participation in formal structures like youth councils and committees.These platforms allow young people to engage in civic processes. (Kraft, Manning, 2023)

Essential abilities for successful youth advocacy campaigns

To run a successful advocacy campaign, young people need a combination of passion and specific skills. Here are the key abilities that youth workers should train and mentor young people in:

- **Leadership skills** - Ability to lead and inspire others, to take initiative and guide the direction of the campaign.

- **Social media management skills** - It is important to know how to use social media effectively to spread their message.
- **Fundraising skills** - Raising funds to support the campaign is crucial as well as managing the resources effectively to ensure the campaign's sustainability.
- **Communication skills** - Effective campaign often involves clear and persuasive communication with policymakers. Young people have to know how to present ideas

Examples of a good practice in environmental initiatives:

Plastic Free July - Started by Rebecca Prince-Ruiz, this global movement encourages reducing single-use plastics, reaching over 100 million people in 190 countries.

Fridays For Future - Initiated by Greta Thunberg in 2018, this campaign mobilises millions globally to demand action on climate change, with protests in over 7,500 cities.

The Ocean Cleanup - Founded by Boyan Slat, this initiative aims to remove 90% of ocean plastic by 2040, inspiring young environmentalists worldwide.

GreenSquad - Started by Fahad Rizwan in 2017, this grassroots organisation in Pakistan promotes sustainable growth through waste management, urban afforestation, and habitat restoration.

Tips for youth workers

- Provide leadership, communication, and social media management workshops.
- Provide resources on advocacy strategies and instances of effective campaigns.
- Forming a mentorship group will help to foster a caring community.
- Engage young people and teach them how to use digital tools for their advocacy efforts by using social media and online platforms.
- Encourage adolescents to get involved in real-world issues to demonstrate advocacy tactics.

3.2 Debating as a bridge

Debating empowers young people to address climate change by enhancing their critical thinking, advocacy, and leadership skills. It helps them evaluate evidence, consider diverse perspectives, and confidently advocate for solutions, making it a powerful tool for climate education and youth-led change. Youth workers can boost climate advocacy by using structured debates. (Jones, et al., 2024)

Debating helps young people develop these key skills:

- **Broadening knowledge:** Encourages exploring diverse topics, expanding understanding beyond academics.
- **Boosting confidence:** Builds self-esteem through public speaking and defending viewpoints.
- **Active learning:** Engages participants in a fun, hands-on way to learn and practice new skills.

- **Critical thinking:** Requires deep analysis and evaluation of information.
- **Organising thoughts:** Helps structure ideas logically for clear communication.
- **Research skills:** Enhances ability to gather, analyze, and use information effectively.
- **Informed arguments:** Teaches forming well-reasoned, evidence-based arguments.
- **Effective communication:** Develops skills to persuade and influence others.
- **Teamwork:** Fosters collaboration as participants work together on strategies. (Global Citizen Academy, 2024)

What does the debate structure look like?

1. Introductions by the chairperson - Chairperson introduces the debate, the topic and judges. Each debater briefly introduces themselves.

2. Assigning sides - Chairperson assigns teams to either the affirmative (supporting the topic) or negative (opposing the topic).

3. Research time - Both teams are given time to research the topic and prepare their arguments.

4. Opening presentations - Each team has 3 minutes to present their opening arguments. Presentations alternate between the two teams, starting with the affirmative.

5. Judges' questions - Judge(s) ask questions to each team. Teams respond to judges' questions.

6. Audience questions and team exchanges - Audience members ask questions and share their thoughts. Teams respond to selected questions and challenge each other.

7. Final remarks - Each debater has 1 minute to sum up their argument or make a closing point or they appoint one team member to have a longer closing speech.

8. Feedback and comments from the judges - Judges provide constructive feedback on each team's performance.

9. Judges' decision - Judges present their final decision and reasoning. (Debating Matters, 2024)

There are various ways to use debating in youth work: create debate clubs on environmental topics, host workshops which will use the debate method, or integrate debates into educational programs to support climate change education.

Tip

All you need to know about debating, its forms, structure as well as many valuable tips for youth workers and educators you can find in the Civic Debate Club website. There is a curriculum, research and many supporting media materials free to use.

3.3 Public communication (including media and games)

Public communication serves as a bridge between scientific knowledge and the broader public, helping to translate complex environmental issues into relatable and actionable messages. For youth workers and trainers, narrative video games offer a unique and engaging way to teach young people how to communicate about the environment effectively. This chapter explores the critical role of public communication in environmental advocacy and how narrative video games can be used as a tool to empower youth to become effective communicators.

Understanding Public Communication

Public communication involves disseminating information to a broad audience to inform, persuade, and engage people on specific issues. It encompasses various media and platforms, including social media, traditional media, public speaking, and digital storytelling.

The Challenges of Environmental Communication

- Complexity of Issues - Environmental issues are often complex and multifaceted, making them difficult to communicate effectively.
- Misinformation and Scepticism - The prevalence of misinformation and scepticism about climate change and environmental science poses a challenge to communicators.
- Engagement Fatigue - Constant exposure to environmental issues can lead to disengagement or apathy, highlighting the need for innovative and engaging communication methods.

The Power of Narrative Video Games

Narrative video games combine storytelling, interactivity, and immersive experiences, making them a powerful medium for education and communication. They can engage players emotionally and intellectually, fostering empathy and understanding.

How Narrative Video Games Enhance Communication Skills

- **Storytelling Skills** - Games teach players how to craft compelling narratives, a crucial skill for effective public communication.
- **Critical Thinking and Problem Solving** - Players learn to analyse information, evaluate options, and make decisions, skills that are transferable to communication strategies.
- **Empathy and Perspective-Taking** - By allowing players to experience different perspectives, games enhance empathy, a vital component of persuasive communication.
- **Digital Literacy** - Games familiarise players with digital platforms and tools, essential for modern communication strategies.

Practical Example

"Fate of the World" is a strategy game where players must make decisions to manage the Earth's resources and address global environmental challenges. This game highlights the complexity of environmental decision-making and the importance of clear communication to engage stakeholders and the public in solutions.

- **Objective:** Practise developing communication strategies for complex issues.
- **Exercise:** Play a scenario in "Fate of the World" that focuses on a specific environmental challenge. Develop a communication plan to engage the public and stakeholders in addressing the issue. Learn more about "Fate of the World".

Integrating Games into Communication Training

Public communication is crucial in raising awareness and inspiring action on environmental issues. Narrative video games offer a unique and engaging approach to teaching young people how to communicate effectively about the environment. By leveraging the storytelling and interactivity of games, youth workers and trainers can empower participants to develop communication skills and become advocates for change. Through thoughtful game selection, activity design, and real-world application, educators can equip young people with the tools and confidence needed to become effective communicators and leaders in the fight against climate change.

Tools and Resources for Educators: Online Platforms and Communities

- **Games for Change** - A platform that supports using games for social impact, offering resources and communities for educators.
- **Environmental Communication Network** - A resource hub for professionals and educators focused on environmental communication.

🧐 Interesting Fact! Did you know?

Studies show that storytelling is one of the most effective ways to communicate complex information and influence public attitudes, making narrative video games an ideal tool for environmental education.

3.4 Participation tools and advocacy software

Civic, citizen, or public participation - or, simply speaking, "participation" - is happening when people have an opportunity to influence what is happening in their communities, cities, regions, countries, or the whole EU. At this moment it's important to mention **the Ladder of Citizen Participation** that was proposed by Sherry Arnstein in 1969. There are other similar concepts, but they have mostly one thing in common - division between participation and no-participation, or ostensible participation. It happens that people are invited to take part in discussions and to share their ideas, but there are no further actions, or citizens are used only as a decoration when politicians are taking photos.

Traditionally, participation was limited to discussions, round-tables, meetings to share ideas, open-doors days, or other gatherings. Nowadays, e-participation tools make it possible for people to participate while they are at home. There are mobile and web apps through which they can propose topics, vote on ideas, indicate what should be changed or repaired, report something bad (or good), decide on what city budget should be spent (**participatory budgeting)**, discuss with others, monitor or present realisation of the idea, and evaluate the results. Very often these tools include maps, as many ideas, proposals, or reports concern concrete places. It's also beneficial to connect them with data/information portals, as **there is no effective participation without quality information.** It helps people to know what is expected, what is the actual state of the things or really happening, but also to show others that their idea is needed and supported.

E-participation is part of the general trend of electronic governance and public administration, in which it's not necessary to go to a physical office and processes are faster. Pioneer and good example of this approach is Estonia, which even offers an e-citizenship.
Naturally, both approaches, traditional and digital, are often combined and support each other. Moreover, participation is encouraged in connection with projects in the fields such as economy, education, environment, or advocacy for public interests.

Have you ever heard about **LETS?** It's an abbreviation of the local exchange trading systems. These provide (virtual or physical) spaces for exchange of goods and services and usually use **local/alternative currencies**. It can be connected with participatory budgeting, for example citizens would decide what amount of local currency should be issued by town, or how much should be invested into subsidising environment friendly projects or products. Organisations can also ask people how they should use certain amounts of alternative currencies. To learn more about LETS and alternative currencies, check the website of **CETERIS Paribus.**

Participation - online or offline - doesn't need to be linked only with relationships between politicians, public administrations, and citizens. It's also increasingly used in media within the concepts of **engaged and citizen journalism**. There are tools for audiences to suggest or vote on topics, give preferences to topics that are on the agenda, send their own media pieces, or be part of the story. Civil society organisations, companies, or institutions can do the same if they want to approach the broader public and achieve a bigger impact.

Advocacy software can be used in connection with e-participation tools, but it works stand-alone as well. Generally speaking, it represents tools that are designed to help individuals or organisations to spread the word about their causes, ideas, or actions; gather and mobilise supporters; and raise money. Depending on the tool, it can be also used internally to have a quick overview of activities and access to necessary data, and to evaluate people working on advocacy - how active and successful they are. There can also be internal or external fora for discussions, as well as other e-participation instruments.

Examples of a good practice:

World Summit Awards - e-participation apps are under"Government & Citizen Engagement"
Combination or offline and e-participation - example from Belgium
CHI 311, NYC 311, Citizen app - e-participation apps from Chicago and New York City
YouthMetre - training on use of information for effective participation
Top 13 Advocacy Software Solutions

Tip

It's useful to combine e-participation or advocacy software with **gamification.** This term refers to a method of adding game elements into various environments, such as online courses or various platforms, to increase regular participation. For example, there can be badges indicating various levels of engagement or success, people can unlock new features based on their activity, etc.

3.5 Environmental law

Environmental law covers a complex and dynamic set of regulations and policies aimed at protecting the environment and encouraging sustainable practices. **These laws are crucial for managing human activities that impact the environment, ensuring responsible use of natural resources, and preserving ecosystems for future generations.** (UNEP, 2024)

Key components of environmental law include various aspects of regulation for environmental protection, such as the Clean Air Act and Clean Water Act which set limits on pollution and emissions to ensure air and water quality. Permitting systems are also crucial, as activities with potential environmental impacts, such as industrial discharges or land development, often require permits that include conditions to minimise harm. Agencies like the Environmental Protection Agency (EPA), are essential for monitoring compliance, conducting inspections, and imposing penalties for violations. Finally, international agreements, such as the Paris Agreement, demonstrate the need for global cooperation to reduce greenhouse gas emissions.

Importance of Environmental law:

- **Protection of natural resources** - Laws ensure sustainable management of resources, protecting forests, oceans, and wildlife habitats from overuse and damage.
- **Public health and safety** - By controlling pollution, these laws safeguard human health, ensuring clean air and water and preventing diseases.
- **Biodiversity conservation** - Regulations that protect endangered species and habitats are vital for maintaining biodiversity, which supports ecosystem stability and resilience.
- **Climate change reduction** - Environmental laws regulate greenhouse gas emissions and promote renewable energy, aiding the transition to a low-carbon economy and mitigating global warming effects.

How clean is the air in your city?
Check it out here!

3.6 Further readings

Generation Climate Europe. (2022). Youth Advocacy Guideline on EU Level - Clean Cities

Friends of children of Serbia. (2023). Youth Developed Guidelines for Youth Participation in Environmental Protection

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Chapter 4: Media and Information Literacy - Searching for the Information and Answers

In an era of media supremacy which provides an avalanche of information, it is important to teach students how to adequately search and verify their sources, especially for scientific or controversial topics, such as climate change.

4.1 Searching for and verifying information

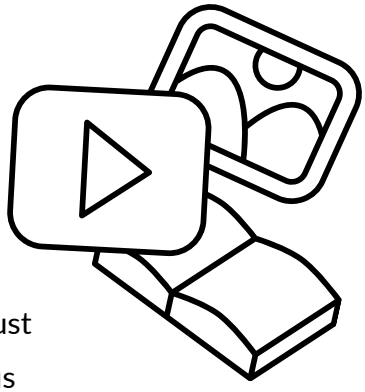
The key to searching for reliable information is to find the right source: using academic tools such as Google Scholar or Oxford Research Encyclopedias can help find credible and reliable books, papers and articles. The simplest strategy is to always use more than one source, and various methods can then be used to verify the credibility of a source, such as the **CRAAP** test:

- **Currency**: Is the source recent or up to date?
- **Relevance**: Is the source directly related to the topic?
- **Authority**: Is the website or format professional, reputable and trustworthy? Are there advertisements or mistakes? Is the author identified? Are they an expert in the field?
- **Accuracy**: Is the source supported by evidence? Is there a bibliography or references?
- **Purpose:** What was the motive behind the source? What is the goal of the site or format?

Scribbr provides many resources, such as citation generators, advice and examples of sources, databases and search engines to identify reliable, peer-reviewed sources. Check here and here to find out more.

Ecosia is a sustainable search engine that uses renewable energy to power its servers and invests its profits in tree-planting projects.

Exercise: Analyse examples of misinformation or "fake news" on climate change issues and provide case studies of media influencing public opinion on environmental issues.



4.2 Supporting critical thinking

Critical thinking is essential in media literacy, especially when students must navigate complex data and diverse perspectives. Teachers may use various strategies to promote critical thinking:

- **Questioning assumptions** - Encourage students to identify and question preconceived ideas: "What assumptions does this author make that aren't verified?" and "How would the argument change if these assumptions were different?"

- **Analysing arguments** - Teach students how to dissect arguments by observing their structure, the evidence provided, and the logic employed. Use examples from climate debates to practise identifying logical fallacies and biased reasoning.
- **Evaluating sources** - Instil a habit of evaluating the credibility of sources by observing the author's credentials, the publication's reputation, and the presence of evidence.
- **Comparative analysis** - Encourage students to compare information from different sources to identify bias, variance in presentation, and completeness of viewpoint.

Exercise: Organise **debates** on contentious climate change topics or **role-playing activities** where students must argue from assigned or chosen positions, forcing them to understand and articulate various viewpoints and to back up their stance with citations and data. Platforms like Kialo Edu can facilitate structured debates and encourage critical analysis.

Useful resource: "The Critical Thinking Workbook: Games and Activities for Developing Critical Thinking Skills" by the Global Digital Citizen Foundation offers practical exercises and gamified activities to improve argument analysis skills.

4.3 Environmental media making

Students could create their own media content related to environmental issues, tailored to their needs and goals, such as websites, videos, posters, art pieces or events. This proactive approach helps develop a deeper understanding of climate change, fosters engagement through creative expression and advocates for sustainable practices within their community.

Useful resource: Participants and organisers of "Media on Environment" training created a manual for media makers covering topics related to the environment and ecology.

The key components for implementing environmental media projects are:

1. Choosing the medium: Introduce different types of media (digital storytelling, video documentaries, podcasts, interactive websites, posters or physical pieces) and discuss the strengths and suitability of each medium for different messages and audiences.

Use software like Adobe Spark or Canva to create visually appealing stories and infographics.

2. Research and planning: Guide students through the process of researching their chosen environmental topic (identifying credible sources, structuring facts).

Create a project plan that outlines their goals, target audience, key messages, and timeline.

3. Content creation: Guide and share tips on effective narratives, persuasive language, and informative, visual and audio elements depending on the chosen medium.

Use software like Audacity for audio editing and DaVinci Resolve 19 for video editing.

4. Peer review and revisions: Establish a peer review process where students present their drafts to classmates and receive feedback, to encourage a collaborative learning environment and improve the quality of the media output.

Implement a structured feedback form focused on accuracy, clarity, and engagement.

5. Distribution and impact measurement: Assist students in distributing their projects through classrooms, websites, social media, community centres, newspapers or blogs.

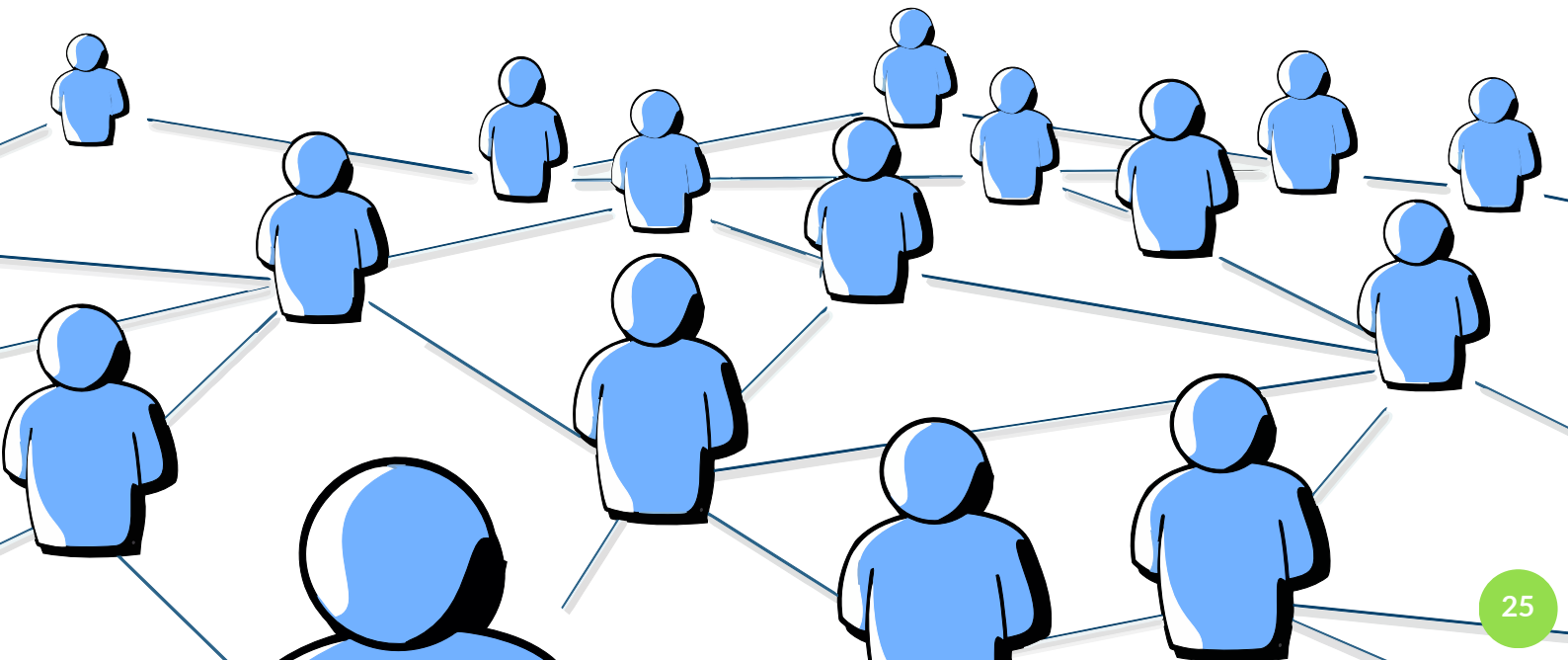
Use surveys or analytics to assess their impact on the audience's knowledge and attitudes.

Useful tool: Climate Alternative offers tools like the C-ROADS Climate Change Simulator, which help visualise the impact of climate policy and emissions on global temperatures.

Documentary screening: Students can collaboratively create a documentary on local environmental challenges and solutions. The school can host a screening event for the community, followed by a debate or panel discussion with local environmental experts.

Interactive web experience: Students can develop a blog or website that maps or discloses local pollution and allows their community to submit observations, opinions and photographs.

Interactive storyteller: Students can create interactive stories by using tools such as My Storybook or Storyboard That, allowing readers to make choices that affect the outcome.



4.4 Working with data (and information)

Working accurately and effectively with data is very important when it comes to ecology and environment, and tackling an increasing amount of misinformation. There are several steps that can be taken to reach high-quality results. School of Data summarises them in a methodology called **Data Pipeline**. Those steps are: define (the problem, topic), find (search for what is needed), get (collect, download, scrape data), verify (check veracity and accuracy of data, check meta-data), clean (make sure the datasets are not containing errors or data that are not related to the topic), analyse, and present (including visualisations). First golden rule to remember is that data can be as easily manipulated as any piece of information.

The difference between data and information is that the latter is basically the former with meaning and context. There is also **meta-data**, basically data about data, providing answers on questions such as when the picture was taken, who collected the data, or what methodology was used. Checking them can help verify whether data and pieces of media were manipulated, or not.

Data can be extracted from various media. Special method is **photogrammetry** that works with photographs. It has several variants: extraction of 3D data, values representing colour or metallicity, or data from pictures taken from orbit or a lesser distance. Results are realistic models (assets, visual information) that can be used to restore historic objects, or to create virtual classrooms and repositories of objects.

Data (and information) visualisations. First things first, there is one golden rule. Good visual representation of data shows them accurately and clearly, as it takes into account that it will be used not only by authors as a demonstration, but also by others as a resource. Visualisations of data are often putting them in the context (time, spatial) and accompanying them with additional content, thereby eventually turning data into pieces of information. There are several types:

- **Tables** - the most basic visual representation of data, but current software contains various tools for searching, analysis, and further processing;
- **Charts, graphs, histograms, diagrams, climographs and similar graphical techniques** (2D or 3D; graph uses horizontal and vertical axes);
- **Info-graphics** (using texts, pictures, graphics, etc.);
- **Timelines** (often interactive and using accompanying information and resources);
- **Maps**: there is a possibility to add additional materials, such as documents, videos, or pictures. One special type is called a story map, where various locations are connected.

GIS - geographic information system. It's technology used as a basis of numerous tools. All of them allow storage, extraction, management, analysis, editing, and visualisations of geographic data and information. There are versions that are now including 3D visualisation options.

Did you know?

The art of data visualisations is not a domain of the recent decades. As early as in 1869, Charles Joseph Minard created a piece which is regarded as one of the best data visualisations. It depicts Napoleon's invasion of Russia and his retreat. The visualisation accompanied by a story about its creation and structure is available here.(Open Culture, 2019)

Useful tools:

Interactive visualisations: Tableau, Flourish, Infogram, Piktochart, or Datawrapper. The other recommendations are available here.

Direct map comparison.

Mapping and spatial analytics, data visualisations, story-maps: Esri.

Interactive data visualisation tools: Knight Lab

Examples of a good practice:

European Environment Agency

The Fallen of World War II (data video visualisation)

Top 10 Data Journalism Projects from 2023

The best data journalism stories of 2022

Attention: correlation is not causation!

While correlation refers to basically any dependence in any statistical relationship, causation means that one event influences the other. Two trends might be correlated, but that doesn't mean that one causes the other. Wrong assumptions are made on the basis of confusion between these two terms, not only in the media. There are some examples made for fun, but also to raise public awareness, for example Spurious Correlations.

4.5 Positive use of fiction to raise public awareness

Various forms of fiction can be a powerful tool in activism and environmental education, to raise awareness and stimulate discussion about climate change and sustainability in a creative manner.

The objectives of using fiction in environmental education

- **Engage emotionally**: Harness the emotional impact of fictional narratives to connect students with environmental issues on a personal level.
- **Improve relatability**: Explore complex issues through relatable stories, making abstract or overwhelming data less harsh and more tangible.
- **Foster creative thinking**: Encourage questions and creative approaches to problem-solving by exploring fictional scenarios related to climate change.
- **Promote discussion:** Use fictional stories as a catalyst for discussions and debates on environmental policies, ethics, and responsibilities.

The key strategies and methods to incorporate a fiction into green education

- **Selecting appropriate fiction:** Choose books, films, shows and other fictional media that incorporate environmental themes and provoke thought about environmental challenges.

  Novels like “The Overstory” by Richard Powers (2018), movies such as “WALL-E” by Disney Pixar (2008), or video games like “Flower” by that game company (2009).

- **Integrative learning activities**: Design activities that compare the fictional treatment and factual data related to environmental issues presented in a work of fiction.

Activity: What if? Create a project where students imagine the future of their own community if certain environmental issues are not addressed, inspired by fictional scenarios.

- **Critical analysis discussions:** Discuss and criticise the impact of environmental narratives in fiction (plausibility, scientific accuracy, influence on public perception).

Suggest points to question and discuss: How does the story's narrative affect our understanding of climate change? What might be the consequences of the portrayed future?

- **Creative writing projects:** Encourage students to write short stories or fictions that incorporate environmental themes, to creatively apply what they've learned.

  Use Storybird or Wattpad to publish stories online and receive broader feedback.

Examples of fiction and stories created to raise awareness on environmental topics

The Czechoslovak short film "**Oil Gobblers"** (1988, directed by Jan Svěrák) depicts fictional creatures that need a polluted environment to survive, drawing attention to the level of air pollution and landscape destruction in some regions of the country. **Geopark Malé Karpaty** (Slovakia) uses stories of "Permoníks" to raise public awareness of geological diversity and history of mining.

4.6 Informing public - Code of Conduct

There are ethical responsibilities that teachers and students must adhere to when using media to inform the public about topics such as environmental issues.

The objectives of a Code of Conduct

- **Ensure accuracy:** Uphold standards of accuracy and reliability of the information.
- **Promote respect:** Foster an environment of respect and open mindedness, avoiding sensationalism or alarmism that can lead to public distrust or disengagement.
- **Encourage responsibility:** Instil a sense of responsibility as students learn to navigate and contribute to public discussions on sensitive issues.

The key components of a Code of Conduct

- **Accuracy and verification:** Teach students the importance of verifying information, using credible sources and cross-referencing facts.
- **Transparency:** Ensure that students disclose their sources and any potential biases and encourage acceptance of one's limited understanding of the complex data presented.
- **Respect for different perspectives:** Train students to engage constructively and respectfully in debates by acknowledging different viewpoints and scientific evidence.
- **Avoidance of sensationalism:** Avoid using exaggerated language that might mislead or alarm and focus on presenting information in an engaging yet factual way.
- **Privacy and confidentiality**: Educate students on the ethical and legal implications of data privacy, particularly when using or sharing sensitive or personal information.

4.7 Further readings

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Chapter 5: Storytelling and Gamification

In an increasingly digital and interconnected world, the art of storytelling and the implementation of gamification have become powerful tools for engaging and educating learners. This chapter explores the intersection of these two concepts, revealing how narrative-driven approaches and game-based learning can transform traditional learning and engagement strategies, specifically in climate change education.

5.1 Storytelling

Storytelling is the art of sharing stories. It involves the creation of a plot, characters and a narrative point of view. Storytelling includes:

1. Exposition
2. Rising action
3. Climax
4. Falling action
5. Resolution

It is mainly used as an entertaining activity to raise the listener's or reader's interest. Historically, it was used to share and pass along certain knowledge and values. It is in literature, comics, film, and even in everyday discussions.

Find out more! Why do we tell stories?

The New York Times, in part of a series called "Turning Points", asked people "why do we tell stories?".

There is also an interesting article from Millán M. on Genially blog called "What is storytelling? The guide to telling great stories" (October 5, 2023)

Storytelling and learning process

Storytelling is widely used for educational purposes. Why? Because learners' engagement in learning is driven by three aspects: meaningfulness, safety and availability of resources (Kahn, 1990). Storytelling has the power to gather these three aspects.

Vanessa Boris and Lani Peterson (2017) emphasize that storytelling connects people by fostering a shared culture, history, and values, which builds trust and encourages openness among learners. Storytelling is particularly effective in education because it humanizes the learning process, requiring students to use their imagination and focus on the story, thus deepening their cognitive engagement.

Image from Freepik

Storytelling is also highly beneficial for information retention. It engages learners through a blend of visual, audio, and emotional elements—evoking mental images, using the storyteller's voice, and eliciting feelings that resonate with the narrative. This comprehensive approach makes storytelling adaptable to any learner, enhancing their ability to remember and recall information, especially when the story ties into their existing knowledge and experiences.

Moreover, V. Brinia from the Athens University of Economics and Business points out that storytelling skills—whether in creating, listening to, or understanding a story—significantly improve students' verbal and writing abilities, as well as their critical thinking and capacity to analyze and synthesize information.

To go further

To know more about the use of storytelling in the learning process, you can read this article from Boris V. and Peterson L.: "What Makes Storytelling So Effective For Learning" (2017)

Storytelling and climate change

The Executive Director of the Global Oneness Project, Cleary Vaughan-Lee, explained in an article written for UNESCO MGIEP, how immersive storytelling can be a powerful tool in educating people about climate change while fostering social-emotional learning (SEL) skills. It emphasises that immersive experiences can help learners better understand and empathise with the impacts of climate change, encouraging more profound emotional connections and actions towards environmental and social issues. This approach can contribute to both personal and global healing by promoting empathy and responsible action.

Storytelling is a relevant tool to teach and make people aware of climate change as it allows for making complex scientific data more relatable and emotionally engaging. Through narratives, learners can better understand the real-world impacts of climate change, see the consequences on communities and ecosystems, and connect with personal and collective responsibility. This emotional connection can inspire action and foster a deeper sense of empathy, motivating people to support sustainable practices and policies. Storytelling thus becomes a powerful tool in climate education and advocacy.

5.2 Gamification

Gamification is the process of applying mechanics or principles from games to something that is not a game to improve the engagement of an activity. It can include scoring, competition with others, rules of play, etc. Next to the gamification there are also serious games, which are based on adding some learning content into a game.

Why use gamification?

Playing a game can be seen as only an entertainment activity. However, the concept of gamification allows the participants to find meaning in a real-world activity and encourages transformative learning (Nicholson, 2012).

Image from Freepik

Actually, gamification is more than just establishing a scoring system for a real-world activity. It focuses on the players. The main goals are:

- to create motivation and engagement,
- to provoke emotions which improve memorization,
- to innovate and provide new learning processes to learners,
- to tone down failure, therefore, encouraging learners to try,
- to place learners at the heart of the pedagogical process.

If a game is meant to be fun, it should not feel like a compulsory exercise to students. The key is to consider gamification in the learning process as a way to genuinely engage students and foster a deeper connection to the subject, rather than merely using games as a trick to promote learning. Gamification's objective in the learning process is to help players find a deeper connection to a specific topic by providing information and choices and encouraging critical thinking (Nicholson, 2012).

Therefore, the goals for the meaningful gamification course were to first teach students about reward-based gamification and then explore meaningful gamification.

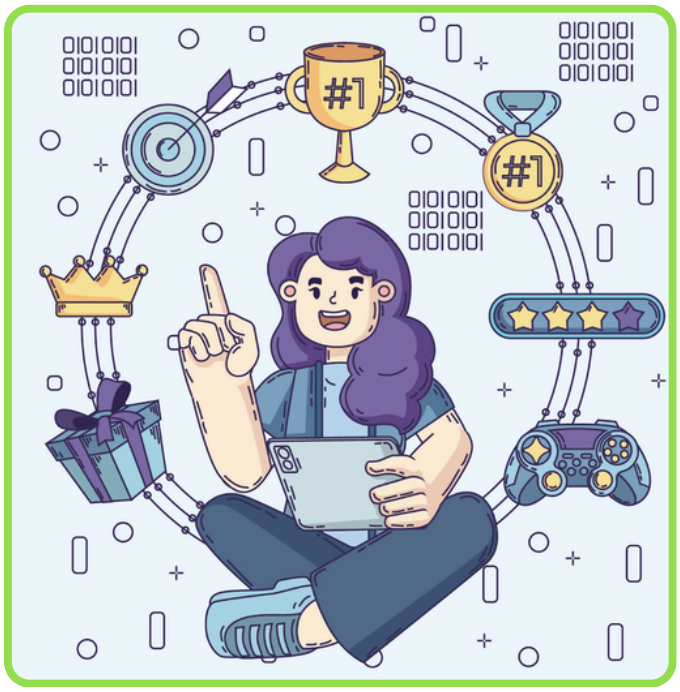

Image from Freepik

Video games and learning process or game-based learning

Game-based learning is an active educational approach that utilises games to enhance student learning. This method encourages critical thinking and problem-solving skills by engaging students in gameplay. The educational benefits stem from the interactive nature of games, which can be digital or non-digital, offering simulations that provide practical, hands-on learning experiences.

To go further

To learn more about game-based learning and its benefits, you can read this article from Tamosevicius R. on the eLearning Industry website, discussing "Why Is Game-Based Learning Important?"

Here, we will deal specifically with video games. If they follow specific educational and pedagogical approaches, they can be effectively developed for educational purposes.
In fact, proper design is crucial when integrating video games into classroom settings or for general educational reasons. To achieve educational goals and enhance learner motivation and interest, video games should possess certain characteristics such as:

- Simulate real-life contexts to allow safe decision-making without real consequences.
- Promote the acquisition of transferable skills through engaging activities.
- Incorporate inquiry and observation-based learning activities.
- Foster empathy through role-playing activities, enabling exploration and understanding of diverse ideas and opinions.
- Provide collaborative environments where all participants can achieve similar levels of knowledge, supported by mentoring and coaching from teachers or educators.

Video games are known to enhance learning by improving problem-solving skills, mood, and cognitive abilities like spatial navigation and memory. Video games can also foster social-emotional learning (SEL), teamwork, and creativity.

🧐 Interesting Fact! Did you know that... ?

Countries like Poland and Belgium have integrated video games into their educational systems, using them as tools for engagement and learning? Specific examples include "Re-Mission" developed by Realtime Associates and published by Hopelab for cancer patients and "Kerbal Space Program" developed by Squad, Flying Tiger Entertainment, Inc for teaching physics and engineering principles.

5.3 How to use (narrative) video games

What is a narrative in a video game?

Narrative in video games is the use of storytelling as a component of the game, along with other visual aspects. It allows defining how the game moves forward, creating characters and a world, and making the player feel emotions. It is a story structure, with a theme, a plot, dialogues, and emotional elements so that players can connect to the story.

Narrative video games are a type of video game that emphasises storytelling. These games immerse players in the story, making them an integral part of the narrative through interactive choices and gameplay. The narrative can drive the player's actions and decisions, influencing the game's outcome and the player's experience. It can be adventure games, role-playing games (RPGs), and visual novels, where the storyline is central to the gameplay experience.

Image from Freepik

Why use narrative video games?

Using narrative video games in education involves selecting games that offer rich storylines and immersive experiences. These games can be used to explore historical events, develop empathy through character-driven stories, or enhance language skills through in-game dialogues.

Storytelling in a game is the main way to share a message, and it is really important to care about this message while doing or using a video game. For instance, in our case, we want to use a narrative video game on climate change to educate learners about this topic. For that, the storytelling of the video game must be worked and relevant. Many games, according to the storytelling and unintentionally, can share messages such as promoting colonialism, when the hero needs to save the local population but win their treasure, for instance, extractivist, when the hero needs to accumulate lots of resources to create stuff during the game; or survival of the fittest when the hero needs to kill everyone and be the last to survive (Fayolle A., 2022).

To share a positive message on climate change and allow learners to gain some knowledge and skills, here are several ways to share an ecological message in a video game:

- **Telling the story of people already facing the climate change consequences.**
- **Educating the players on topics related to climate change without any judgmental aspects.**
- **Using climate change as a threat to humanity instead of fictive reasons.**
- **Sharing indirect ecological messages as a side story.**

Educators can design activities around the game's narrative, such as discussions, writing assignments, or problem-solving tasks, to deepen learners' understanding and engagement with a specific topic.

5.4 Examples of storytelling and gamification in environmental education initiatives

Eco Rangers is an educational program, developed in several countries, that uses practical exploration, storytelling and gamification to reconnect children with nature and teach them about biodiversity and conservation. The program transforms local parks and natural areas into interactive learning environments where students embark on quests to save the environment.

The Climate Game, developed by the Financial Times, is a digital game that simulates real-world climate change scenarios. Players make decisions to manage resources and implement policies, experiencing the consequences of their actions through immediate feedback in the game, with the goal of reaching net zero in carbon dioxide emissions by 2050.

Climate Connected: Outbreak is a narrative single-player game (using simple screens or VR) that supports players in their affective and behavioural connection to climate change as a planetary health issue, connecting day-to-day objects with systemic issues.

Water Guardians is a storytelling campaign where participants follow the journey of a drop of water through various ecosystems around the world, learning about water conservation and the impacts of pollution. It takes the form of a free curriculum with five lesson plans, including videos and worksheets, that take students on an inspiring adventure to make a change.

Roleplay quests: Design missions where participants are assigned a specific role (farmer, biologist, conservationist, etc.) and are tasked with solving environmental challenges (identifying native plant species, collecting recyclables, etc.).

Tip Use the environment, such as local flora and fauna, relevant and relatable stories, or mobile apps and online platforms where students can observe or research their impact.

Using video games as a learning support

All types of video games can be used in the learning process. You don't need to create a video game, which could seem very time-consuming and difficult. A great resource you can use is the Erasmus+ project Gaming for Skills, which provides pedagogical sequences using already existing video games. According to your target, you can search for a specific topic, skill, or age. For more ideas on how to implement the EcoQuest video game into youth activities, refer to our supporting learning activities, which we will develop during the project.

How to use game-based learning?

Here are some practical tips for implementing game-based learning into your youth work:

1. Think about your pedagogical objectives first.
2. Choose your game type according to your pedagogical objectives (role-play, video game, board game, puzzles, etc.).
3. Integrate the game into a sequence/workshop with a briefing session, several steps, and a debriefing.
4. Put learners at the heart of the learning process by letting them play and provide some food for thought so that they become active players.
5. Provide immediate feedback to allow learners to improve during the game and encourage reflection and transformative actions.
6. Promote cooperation between learners.
7. Gather feedback from learners to improve your next experiences and evaluate learning outcomes.

5.5 Further readings

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Chapter 6: EU Environment and Climate Policies & Participation Opportunities

In this chapter we explore the innovative use of video games as tools for environmental education. By leveraging the interactive and immersive nature of games, educators can engage young people in complex environmental issues in a compelling way. This chapter discusses how video games can enhance learning by fostering critical thinking, empathy, and problem-solving skills. It provides practical guidance for selecting and using games that effectively illustrate environmental challenges and solutions.

6.1 Overview of EU Environmental Policies

General principles and basic framework of the EU environmental policies are provided on the website of the European Parliament. Special attention is dedicated to the following areas: combating climate change; biodiversity, land use, and forestry; water protection and management; air and noise pollution; resource efficiency and the circular economy; sustainable consumption and production; and chemicals and pesticides.

Additional information - covering also topics such as marine and coastal environment or horizontal legislation (rather procedural regulations, e.g. Directive to protect the environment through criminal law) - is provided on the website of the European Union – Central Asia Water, Environment and Climate Change Cooperation (WECOOP).

NATURA 2000 is a network of nature protected areas in the European Union. It's based on both the EU and national legislations.

The Council Recommendation on learning for the green transition "emphasises the need to provide learners of all ages with opportunities to find out about the climate crisis and sustainability through both formal and non-formal education, and to make learning for the green transition a priority in education and training policies and programmes". EU Youth Strategy 2019-2027 introduced 11 European Youth Goals and number ten is Sustainable Green Europe.

Environment and fighting against climate change are two of key matters of importance for the European Union. That is why they are also among priorities of the Erasmus+ Programme and European Solidarity Corps Programme, meaning each supported project should take them into account (e.g. organisers should at least encourage green travelling and reduce the environmental footprint of their projects).

On institutional and organisational level, in the period 2019-2024 the European Commission had an Executive vice-president focusing on European Green Deal and Commissioners for Climate.

🧐 **Interesting Fact! Did you know?**

there is water and climate diplomacy. They are specific branches focusing on dialogues and cooperation between the countries and other stakeholders about topics in question.

Action and Environment, Oceans, and Fisheries. Each of them had a thematic Directorate-General. There is also the Executive agency for European climate, infrastructure and environment and body that is providing independent information is the European Environment Agency. One of the main funding instruments is the LIFE programme, providing support to a wide range of thematic project (until 2027).

The European Parliament has a Committee on the Environment, Public Health and Food Safety. At a political level, Greens/EFA Group connects national parties in the European Parliament that have environment and ecology in their core. The European Green Party is based on the same principle, but its members do not need to be represented in the European Parliament.

6.2 EU Climate Change Policies

Resource:
Environmental information systems.

Understanding climate change policies

Climate change policies are actions and strategies used by governments worldwide to tackle climate change challenges. These policies are divided into two main types:

1. **Adaptation policies:** These are designed to help communities and ecosystems adjust to the effects of climate change, such as rising sea levels or extreme weather, to minimise damage and take advantage of any potential benefits.
2. **Mitigation policies**: These focus on reducing greenhouse gas emissions to slow down or stop climate change. This includes using renewable energy sources like wind and solar, improving energy efficiency, and promoting cleaner transportation options. (Dolšak, Prakash, 2018)

So to sum up, climate change policies are essential tools used to address the impacts of climate change. These policies aim to:

- **Reduce greenhouse gas emissions** - They implement measures to cut down emissions from various sources.
- **Promote renewable energy** - They encourage the use of wind, solar, and other renewable energy sources.
- **Enhance energy efficiency** - They improve how we use energy in homes, businesses, and transportation.

- **Optimise transportation** - They develop cleaner transportation options, such as electric vehicles and public transit.
- **Foster sustainable land use** - Support practices that protect forests, manage agriculture sustainably, and reduce land degradation. (Giddens, 2009)

The European Union has developed several important policies to combat global warming and reduce greenhouse gas emissions. Here's a list of these key initiatives:

European Green Deal: Aiming for net-zero greenhouse gas emissions by 2050, the EGD is a comprehensive plan to make Europe climate-neutral. It includes strategies to reduce pollution, enhance biodiversity, and promote a circular economy.

Net-Zero Emissions Goal: The EU targets achieving net-zero emissions in the second half of the 21st century by both reducing emissions and enhancing methods to remove carbon from the atmosphere.

EU Emissions Trading Scheme: This is a crucial tool designed to reduce greenhouse gas emissions by setting a cap on the total amount of certain greenhouse gases that can be emitted by installations covered by the system. Companies receive or buy emission allowances which they can trade with one another as needed.

EU Burden-Sharing Agreement: This agreement ensures that obligations to reduce emissions are distributed among member states according to their economic capabilities. It helps balance the responsibilities so that all countries can contribute fairly to the overall goal.

Fiscal Policies: These include carbon pricing and green investments, which are vital for achieving the EU's greenhouse gas emission reduction targets. Carbon pricing helps make polluters pay for their emissions, while green investments fund sustainable projects and technologies. (Cifuentes-Faura, 2022)

6.3 Integrating EU Policies into Youth Activities

Educators can use many strategies and tools to incorporate EU climate policies into their curriculum and empower youth to participate in sustainable practices and policy dialogues.

Educational workshops: Organise educational workshops that dissect EU policies, discussing their objectives and implications. Root those activities in relatable contexts, such as local issues, use interactive methods like group discussions, debates, and role-playing.

Role-play audit: Students could assume the roles of EU policymakers, local representatives, activists and community members to debate the implementation of a policy, researching various standpoints and providing data on the roots and impacts of those policies.

Environmental projects: Design and implement practical and creative projects that align with EU environmental goals, such as local clean-up drives, biodiversity monitoring, initiatives to reduce plastic use or climate walks, while disclosing the concerned policies and global issues.

Biodiversity projects: Use the EU Biodiversity Strategy as a framework to guide projects on local wildlife conservation or habitat restoration. Have students observe, analyse and use the nature around them and put what they've learned about those policies in practice.

Circular challenges: Students could create products or systems that minimise waste, to be used in their classroom, school or community, reflecting the Circular Economy Action Plan.

Advocacy campaigns: Encourage young people to lead and participate in campaigns that advocate for policy adherence or promote broader awareness of EU policies, by acknowledging local needs and impacts on community members through discussions and surveys.

Digital campaigns: Create a social media page or blog and guide students through harnessing online platforms to share information, stories, and data related to EU climate actions and their importance, analysing their impact on online audiences through surveys and discussions.

Community engagement: Organise or join town hall meetings where youth can discuss the local relevance of EU policies with community members, organisations, NGOs and stakeholders to display the real impact of climate responsibility.

Participation in policy-making: Help youth engage directly with policymakers through forums, youth parliaments, or dialogues to share their views and suggestions on environmental policies.

Youth parliaments: Organise sessions where young people can present their views and recommendations on environmental issues to local and national lawmakers.

Feedback sessions: Set up workshops where youth can draft responses to public consultations by the European Commission on upcoming environmental legislation.

6.4 Participation opportunities for youth

The easiest way to find about participation opportunities (including mobilities, such as trainings) is to visit the following websites:

- Salto Trainings Calendar
- European Solidarity Corps
- European Youth Portal
- European Youth Foundation

Youth and Environment Europe (YEE) is a European non-profit organisation and platform for other youth organisations that focus on environmental protection. It's possible to get involved with them directly or attend their activities, or check what their members offer. Another network, which has a close relation with the topic of environment, is Rural Youth Europe.

Local example: Youth for Equality from Slovakia is a non-profit organisation that holds training and other activities focused on the environment. Many of them are local, but some events are also international, such as Erasmus+ training. Its website is available under.

There is also a think-tank (not an EU institution) called the **Institute for European Environmental Policy**. It provides various resources and learning opportunities.

Organisations, which provide various opportunities to get involved - volunteering, working on projects together (or getting funding), internships - are for example these below. It's worthy to check also their country offices or local members:

- WWF
- UNEP
- Greenpeace
- NATURE
- EEB
- UNESCO

Conclusion and Final Remarks

It is crucial to reflect on the transformative potential of integrating innovative educational methods into climate change and environmental education. In this guide, but also in the whole EcoQuest project, we aim to empower youth workers and trainers to equip young people with the knowledge and skills necessary to understand and address pressing environmental issues. By leveraging tools such as narrative video games, we can engage learners in meaningful and interactive ways, fostering a deeper connection to the environment and enhancing their critical thinking and problem-solving abilities.

The video game we are developing for this project represents a significant step forward in youth activities. By involving learners as active participants in a dynamic storytelling environment, we enable them to make decisions, observe the consequences of their actions, and engage with complex environmental challenges in a simulated, risk-free setting. This approach not only enhances learning but also empowers young people to apply these lessons in real-world scenarios, fostering a sense of responsibility and agency.

Key Points to Remember

- **Interactive Learning** - Narrative video games offer an immersive experience that enhances engagement and retention of environmental knowledge. By allowing players to explore scenarios and make decisions, games foster critical thinking and empathy.
- **Holistic Education** - An integrated approach combines scientific, social, and ethical perspectives, providing learners with a comprehensive understanding of environmental challenges and solutions.
- **Youth Empowerment** - Encouraging active participation in environmental advocacy helps young people develop leadership skills and a sense of agency, enabling them to influence positive change in their communities.
- **Inclusivity and Accessibility** - Ensuring that learning resources are accessible and culturally relevant is essential for engaging diverse groups of learners and promoting equitable education.

Implementation Strategies for Youth Workers

- **Integrate Gaming** - Use the video game as a core activity in workshops and training sessions, facilitating discussions around the choices made and their real-world implications.

- **Encourage Debate and Discussion -** Foster an environment where young people can express their ideas, debate different perspectives, and develop informed opinions on environmental issues.
- **Facilitate Real-world Applications -** Encourage learners to apply the knowledge and skills gained from the game to real-world environmental projects and advocacy initiatives.

Resources for further learning

To support continuous professional development and deepen understanding of environmental education, youth workers and trainers are encouraged to explore the following resources:

- **Games for Change** offers a platform for learning how games can be used for social impact.
- **National Geographic Education** provides resources on environmental science and geography education.
- **Green Education Foundation** focuses on sustainability education resources and initiatives.

In conclusion, the journey towards equipping young people with the tools to address climate change and environmental challenges is ongoing. By embracing innovative educational methods and fostering a culture of curiosity and critical thinking, youth workers can inspire the next generation to become leaders in environmental sustainability. We encourage you to implement the strategies outlined in this guide and to continue seeking out new opportunities for learning and collaboration.

Together, we can make a significant impact in creating a more sustainable and just future for all.

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NARRATIVE VIDEO GAME ON CLIMATE CHANGE

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