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Digital Eco-Leadership



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Digital Eco-Leadership

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Digital Eco-Literacy Teacher Training Program



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AUTHORS

Özkan Çam

Silvia Popovici

Brîndușa Andrei

Viorica Rusu

Mihaela-Cătălina Tărcăoanu

Silvana Jovancheva

Angela Krstevska

Zoran Krstevski

Rosa Henriques

Elisabete Martins

Maria João Oliveira

Rui Raposo

Yurii Mikhelkis



INTRODUCTION

The Digital Eco-Literacy Teacher Training Program empowers teachers with practical skills and resources to bring eco-literacy into the classroom using digital tools and inclusive methodologies. This program offers

hands-on guidance across six structured modules by focusing on key areas to improve teachers' ability to teach environmental concepts in ways that are engaging, relevant, and accessible to all learners.

Through this program, teachers will learn to incorporate eco-literacy principles into their curriculum by helping students understand the interconnectedness of environmental systems and their role in sustaining them. By using digital tools and tailored instructional strategies, teachers will be better equipped to foster eco-consciousness and responsible digital citizenship among students. With an emphasis on real-world applications and inclusive practices, this training program is designed to support diverse learners in exploring environmental topics, critical thinking, and active engagement with ecological issues.

Each module offers targeted resources and activities that support teachers in embedding eco-literacy into their practices:

- Module 1: Digital Tools for Eco-Literacy Integration
- Module 2: Eco-Literacy Curriculum Design and Integration
- Module 3: Assessment Strategies for Eco-Literacy Learning
- Module 4: Digital Citizenship and Environmental Ethics
- Module 5: Technology Integration in Field-Based Learning
- Module 6: Inclusive Practices for Diverse Learners

Together, these modules provide a comprehensive pathway for teachers to enrich their classrooms with a strong foundation in digital eco-literacy.

Summary of Digital Eco-Leadership Project

The Digital Eco-Leadership (DigiEco) project focuses on helping teachers bring environmental learning into the classroom through digital skills. As a school dedicated to raising awareness of climate change, we've seen firsthand how digital skills can help students create solutions to environmental challenges. This project is designed to give teachers the tools and methods they need to teach environmental topics in a way that's engaging and relevant to students.

DigiEco is compatible with key goals like the European Green Deal and the Sustainable Development Goals by providing three intellectual outputs:

- Digital Eco-Literacy Teacher Training Program: This program helps teachers learn how to bring eco-literacy into their lessons using digital tools.
- Eco-Tech Learning Modules: These are interactive lessons for students, building their knowledge about environmental issues and how to propose solutions.
- Eco-Tech Collaboration Hub: A digital space where students, teachers, and community members can connect, share ideas, and work on eco-literacy projects.

The project's main objectives are to:

1. Improve eco-literacy and digital skills among 120 teachers, helping them bring eco-literacy into their teaching.
2. Improve eco-literacy and digital skills for 180 students, guiding them in using digital tools to explore environmental issues and solutions.
3. Provide extra support for 60 students with fewer opportunities to help them learn eco-literacy and digital skills and feel more confident.
4. Encourage teamwork among students and teachers in eco-literacy projects and community events focused on sustainability.
5. Raise environmental awareness within schools and communities through activities like awareness campaigns, clean-ups, and tree plantings.

Roadmap Of The Training Program

The Digital Eco-Literacy Teacher Training Program is organized into six modules, each building essential skills for teachers to integrate eco-literacy into their classrooms using digital tools.

Module 1: Digital Tools for Eco-Literacy Integration

In this introductory module, teachers explore various digital tools and platforms relevant to eco-literacy education. Through practical exercises, teachers learn how to use these tools to enhance environmental education engagingly.

Module 2: Eco-Literacy Curriculum Design and Integration

This module focuses on strategies for designing curriculum units that integrate digital tools. Teachers participate in interactive workshops to develop innovative lesson plans that bring environmental topics to life.

Module 3: Assessment Strategies for Eco-Literacy Learning

Teachers learn tailored assessment techniques for eco-literacy in digital settings. This includes using formative assessments, project-based tasks, and other methods to effectively evaluate students' understanding of environmental concepts.

Module 4: Digital Citizenship and Environmental Ethics

Teachers examine the ethical use of digital technology in environmental education. This module covers important topics, including responsible digital citizenship and environmental justice, to guide students in using technology thoughtfully.

Module 5: Technology Integration in Field-Based Learning

This module explores how digital tools can enhance outdoor learning. Teachers learn to use mobile devices and platforms to support hands-on environmental activities, linking classroom learning with real-world experiences.

Module 6: Inclusive Practices for Diverse Learners

The final module emphasizes inclusive teaching strategies for eco-literacy. Teachers are introduced to universal design principles and assistive technologies that support diverse learners in understanding environmental topics.

Module 1 Digital Tools for Eco-Literacy Integration



Objectives:

- To introduce how digital tools can enhance eco-literacy teaching.
- To help teachers explore and choose useful digital tools.
- To teach how to use digital tools in eco-literacy lessons.
- To encourage creative and critical thinking in students using digital tools.
- To show ways to use digital tools for teamwork and student engagement.

Learning Outcomes:

- Know how digital tools support eco-literacy teaching.
- Identify and select the right tools for eco-literacy topics.
- Create lessons that use digital tools effectively.
- Use tools like simulations or maps to make lessons interactive.
- Check if digital tools are helping students learn better.
- Adjust tools to meet the needs of all students in the classroom.



3 Hours

Key Concepts: Eco-Literacy, Digital Tools, Interactive Learning, Environmental Awareness, Inclusivity



Theoretical Component

Understanding and appreciating how natural systems are interconnected and how humans contribute to their harmony is known as eco-literacy. It requires an understanding of ecological concepts, an understanding of systems, and a dedication to sustainability. Teachers are essential in promoting eco-literacy because they assist students in understanding the value of environmental responsibility and give them the tools they need to interact with ecological challenges.

Digital tools have changed education by providing innovative techniques for teaching and learning about environmental issues. These resources improve traditional teaching methods by offering interactive and appealing methods of exploring ideas like biodiversity, climate change, and sustainable living. Students can better relate what they learn in the classroom to real-world problems using tools like simulation software, virtual field trips, and digital mapping platforms (like Google Earth and ArcGIS) that can make theoretical ecological concepts tangible.

There are several advantages to integrating digital tools into eco-literacy education: First, they engage students by making lessons easier to understand and interactive; for instance, simulations let students experiment with environmental systems, see results, and comprehend the effects of human actions; second, they give them access to real-time data and resources, which let them critically analyze current environmental issues; and third, they promote collaborative learning, which encourages students to work together and share ideas.

However, careful planning is necessary when integrating digital tools. Teachers must choose resources that complement their lesson plans and are suitable for their students' age and ability levels. Another important factor is accessibility; these resources should be usable by everyone in the class, including those with disabilities. Teachers must also set an example of ethical and responsible technology use, stressing the negative effects of technology on the environment and encouraging sustainable habits like cutting back on energy use and e-waste.

Teaching digital eco-literacy requires inclusive methods. With the help of technologies like text-to-speech, font size adjustments, and multilingual support, teachers can modify digital resources to accommodate the demands of a varied student body. To guarantee that every student feels included and involved, examples and applications should also consider diverse cultural and environmental factors.

This foundational knowledge gives teachers the foundation they need to use digital resources efficiently, guaranteeing that their eco-literacy programs are inclusive and effective. Teachers can encourage students to actively address environmental issues and develop into responsible global citizens by carefully integrating technology into their lessons.

Module Structure

Topic 1: Introduction to Eco-Literacy and Digital Tools

Topic 2: Exploring Digital Tools for Environmental Education

Topic 3: Integrating Digital Tools into Eco-Literacy Lesson Plans

Topic 4: Ensuring Accessibility and Ethical Use of Digital Tools

ACTIVITY 1: Exploring the Basics of Eco-Literacy and Digital Tools

Objective:

- To introduce the concept of eco-literacy and its importance in education.
- To highlight the role of digital tools in enhancing eco-literacy learning experiences.
- To familiarize teachers with examples of digital tools that support eco-literacy education

Description:

Teachers will investigate the core ideas of eco-literacy and the function of digital resources in promoting environmental education in this activity. An overview of eco-literacy is given at the start of the session, with a focus on how crucial it is for promoting sustainability and systems thinking. After that, teachers will be introduced to a variety of digital resources that can be utilized to teach environmental subjects, including simulations, digital mapping platforms, and virtual field trips. Teachers will consider how these tools can improve student engagement and comprehension of eco-literacy ideas through group discussions and facilitated examples, equipping them to successfully incorporate such tools into their teaching.

Materials Needed:

- [Presentation Slides \(LINK\)](#)
- Laptops or tablets
- Discussion Prompts:
 1. What features of the digital tools stood out to you as particularly engaging or useful?
 2. Which tool do you think would be easiest to use in your classroom?
 3. How could these tools enhance student learning about environmental topics?
 4. Can you think of specific lessons or projects where these tools would be valuable?
 5. What challenges might you face in using these tools with your students (e.g., technical difficulties, accessibility)?
 6. How could you address these challenges to ensure effective implementation?
 7. How do you think students would respond to these tools?
 8. Which tool do you think would best capture their interest and curiosity?



9. How can these tools be integrated into existing subjects, such as science, geography, or technology?
10. Are there opportunities to use these tools in cross-disciplinary projects?



Instructions:

Step 1:

SLIDE ([LINK](#))

- Briefly introduce the concept of eco-literacy.
- Highlight the role of teachers in promoting eco-literacy.

Step 2:

- Ask participants to use their laptops or tablets to explore one of these tools.
 1. [Google Earth](#)
 2. [EarthCam](#)
 3. [NASA Climate Change Simulators](#)
 4. [Smithsonian Learning Lab](#)
 5. [iNaturalist](#)
 6. [Project Noah](#)
 7. [EcoMUVE](#)
- a. Encourage them to test basic features, such as creating a digital map, running a simulation, or navigating a virtual field trip.

Step 3:

- Divide participants into small groups
- Ask each group to discuss the following prompts:
 - a. What features of the digital tools stood out to you?
 - b. How do you think these tools could enhance student learning about environmental topics?
 - c. What challenges might you face in using these tools in your classroom?
- Invite a few participants to share their reflections.



Assessment

- Pre- and Post-Session Assessment



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1. What is your current understanding of eco-literacy and digital tools for environmental education?
2. How has your understanding of eco-literacy and digital tools improved after this activity?
 - Quick survey at the end of the activity (Likert scale: 1–5):
 - a. The session enhanced my understanding of eco-literacy.
 - b. The digital tools presented were useful for teaching.
 - c. I feel confident using at least one of the tools in my lessons.



45 mins

ACTIVITY 2: Eco-Lesson Lab: Creating Digital Plans for Sustainable Learning

Objective:

- To teach participants how to design eco-literacy lesson plans using digital tools.
- To help teachers align lesson objectives with eco-literacy principles.
- To guide teachers in selecting appropriate digital tools for specific topics.

Description:

Teachers will learn to design eco-literacy lesson plans that integrate digital tools. Teachers will collaborate to develop a lesson plan using one or more digital tools. This activity emphasizes aligning tools with learning objectives, fostering student engagement, and incorporating eco-literacy principles into various subjects. By the end of this activity, teachers will have a draft lesson plan and a clear understanding of how to use these tools in their classrooms.

Materials Needed:

- [Lesson Plan Template \(LINK\)](#)
- [Sample Lesson Plan \(LINK\)](#)
- Laptops or tablets
- [A Guide to Aligning Eco-Literacy Principles with Educational Standards \(LINK\)](#)

Instructions:

Step 1:

- Share examples of eco-literacy lesson plans that use digital tools
- Discuss how these examples align with eco-literacy goals and encourage critical thinking in students.



Step 2:

- Divide participants into small groups
- Provide each group with a lesson plan template.
- Groups choose one or more digital tools from the list below:
 - a. Google Earth
 - b. iNaturalist
 - c. NASA Climate Simulators
 - d. EcoMUVE
- Groups collaboratively design a lesson plan that:
 - Incorporates the chosen tool
 - Aligns with eco-literacy principles
 - Includes measurable learning objectives

Step 3:

- Each group presents their lesson plan
- Other groups provide feedback, focusing on:
 - Creativity and practicality of the lesson.
 - Effectiveness of the chosen tool for achieving objectives.
 - Alignment with eco-literacy principles.



Assessment

- Peer Feedback
 - Groups provide constructive feedback on the presented lesson plans.
- Reflection Questions
 - a. What did you learn about integrating digital tools into lesson plans?
 - b. How confident do you feel about applying these tools in your classroom?



60 mins

ACTIVITY 3: Designing Interactive Eco-Literacy Projects Using Digital Tools



Objective:

- To foster creativity in creating interactive elements for student engagement
- To provide hands-on experience with digital tools for teaching eco-literacy



Description:

This activity aims to enable teachers to create and carry out interactive, project-based learning activities that use digital tools and eco-literacy concepts. Teachers will design a cooperative eco-literacy project in small groups for the students. An interactive component for the project, whether a virtual presentation, digital map, or simulation-based exercise, will be made using digital tools. The aim is to inspire creativity and participation while coordinating the project with curriculum goals.



Materials Needed:

- Laptops or tablets with internet access
- Storyboarding Template ([Template 1](#)), ([Template 2](#)), ([Template 3](#))
- [Canva \(LINK\)](#)
- [What is Storyboarding?](#)



Instructions:

Step 1:

- Make participants into smaller groups.
- Provide each group with a storyboarding template or access to digital tools like Canva. (Each group will create new pictures and titles in the templates)
- Groups will choose an eco-literacy topic to develop a narrative around, such as:
 - a. Climate change impacts on local communities.
 - b. The journey of waste through the recycling process.
 - c. Biodiversity in urban and rural settings.



Step 2:

- Groups outline their story on the template, identifying:
 - a. Key stages of the narrative (e.g., beginning, middle, and end).
 - b. Eco-literacy principles addressed in each stage.
 - c. Digital tools used to illustrate each part of the story (e.g., maps, videos, or diagrams).
- Groups start creating their storyboard using Canva

Step 3:

- Each group presents their storyboard to the class, explaining:
 - a. The narrative and its eco-literacy focus.
 - b. How digital tools enhance the story's engagement and learning objectives.



Assessment

Questionnaire

1. How well did you understand the concept of storyboarding?
 - Very well
 - Somewhat well
 - Neutral
 - Not very well
 - Not at all
2. How engaging did you find the process of designing a storyboard for eco-literacy?
 - Extremely engaging
 - Very engaging
 - Moderately engaging
 - Slightly engaging
 - Not engaging
3. Were the instructions and materials provided clear and helpful?
 - Yes, very clear
 - Somewhat clear
 - Neutral
 - Slightly unclear
 - Not clear at all



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4. Would you consider using storyboarding as a teaching method in your classroom?
 - Definitely
 - Probably
 - Not sure
 - Probably not
 - Not
5. What did you enjoy most about creating the storyboard?
6. What challenges did you face during the activity, and how did you overcome them?
7. How do you think storyboarding can enhance students' understanding of eco-literacy concepts?
8. How could this activity be improved to better support teachers in integrating eco-literacy into their classrooms?
9. How confident are you in designing a digital storyboard independently after this activity?
 - Very confident
 - Confident
 - Neutral
 - Slightly confident
 - Not confident
10. Rate your understanding of eco-literacy principles after participating in this activity.
 - Excellent
 - Good
 - Neutral
 - Poor
 - Very poor
11. Rate your ability to integrate digital tools into eco-literacy lesson plans after this activity.
 - Excellent
 - Good
 - Neutral
 - Poor
 - Very poor



60 mins

ACTIVITY 4: Making Digital Tools Inclusive and Ethical



Objective:

- To assess the accessibility features of new digital tools for classroom use
- To identify ethical considerations
- To develop strategies to ensure inclusive use of digital tools in teaching



Description:

Through this activity, teachers can learn how to make sure digital resources are ethically and inclusively used in eco-literacy instruction. New tools such as Padlet, Animoto, and Quill will be evaluated by participants for ethical and accessibility issues. To ensure fair and considerate integration, they will recognize possible obstacles, come up with ideas for fixes, and draft rules for the appropriate use of these resources in the classroom.



Materials Needed:

- [Padlet](#), [Animoto](#), and [Quill](#) for evaluation
- Accessibility Checklist



Instructions:

Step 1:

- Divide participants into small groups.
- Assign each group one of the following tools to evaluate:
 - a. Padlet
 - b. Animoto
 - c. Quill
- Provide the Accessibility Checklist to each group. Groups will assess tools based on:

Accessibility Checklist for Evaluating Digital Tools

Use this checklist to evaluate the accessibility features of digital tools. Mark each feature as:

✅ Available, ⚠️ Partially Available, or ❌ Not Available



1. Usability for Students with Disabilities

- a. The tool can be used with screen readers for visually impaired students.
- b. All features can be accessed using a keyboard.
- c. Videos and multimedia content include captions or subtitles.
- d. Text can be resized for better readability.
- e. The tool has high-contrast options for visually impaired users.
- f. All images include alt text for screen readers.
- g. Users can adjust settings like color schemes or font styles to meet specific needs.

2. Language and Multilingual Support

- a. The tool is available in multiple languages.
- b. Users can translate content directly within the tool.
- c. Content can be displayed in easy-to-understand terms.

3. Inclusivity and Cultural Relevance

- a. The tool includes examples and features that represent diverse cultures and perspectives.
- b. Teachers can adapt content to reflect the cultural and contextual needs of their students.

4. Ease of Use for Students with Varying Skills

- a. The tool is user-friendly and easy to navigate for beginners.
- b. Includes tutorials or help guides for first-time users.
- c. Can the tool be used offline to ensure equity for students with limited internet access?

5. Device Compatibility

- a. Compatible with desktops, tablets, and smartphones.
- b. Does not require expensive or uncommon devices to use.

6. Privacy and Data Protection

- a. Does the tool have clear policies on how user data is collected and used?
- b. Students can use the tool without sharing sensitive personal data.
- c. Includes options to manage or limit access for younger students.

7. Additional Features for Accessibility

- a. Supports voice commands or dictation.
- b. Converts written text into spoken words.
- c. Allows group work with features that accommodate all learners.



Step 2:

- Each group discusses their findings and identifies:
 - a. Strengths and weaknesses of the assigned tools regarding accessibility and ethics.
 - b. Potential barriers for students and strategies to address them.

Step 3:

- As a whole group, participants collaborate to draft a “Classroom Code of Conduct” for using digital tools responsibly.
- Key points to include:
 - a. Ensure all students can access and use tools effectively.
 - b. Respect student privacy and data protection.
 - c. Balance screen time with offline activities.
 - d. Promote inclusive practices and cultural sensitivity.



Assessment

- a. What accessibility features do you now consider essential in digital tools?
- b. What ethical considerations will you prioritize in your teaching?



60 mins

Module 2 Eco-Literacy Curriculum Design and Integration



Objectives:

- To develop innovative curricula that enhance eco-literacy teaching.
- To design a curriculum with innovative lesson plans that respond to the needs of inclusive and interdisciplinary education.
- To encourage the integration of strategies for designing curriculum units that integrate digital tools.
- To integrate digital key skills such as critical thinking, digital citizenship and sustainability into the curriculum.
- To promote collaboration between institutions to align curricula with the challenges of the European partners.

Learning Outcomes:

- Understand educational practices in innovative curriculum design
- Identify the key skills necessary for an inclusive, interdisciplinary and functional curriculum.
- Create lesson plans with challenges and solutions for the integration of digital and sustainable tools.
- Apply user-centered design methodologies to create flexible curricula with adjustable plans to different contexts.
- Use digital and collaborative tools to develop and share educational contents.
- Adopt a continuous learning assessment to check the curriculum feedback.
- Encourage a collaborative interaction with students to check learning skills.



3 Hours



Key Concepts: Eco-Literacy; Curriculum Design Models; Artificial Intelligence; Digital Tools; Sustainability in Teaching and Curriculum; Integration, Awareness and Reflection skills.

Theoretical Component

Thinking about educational systems in the universe of digital transition, it is fundamental to understand the meaning of eco-literacy which is the ability to understand the natural contexts that surround us today. To be ecoliterate means understanding the principles of the organization of ecological institutions in order to create more sustainable groups or communities.

Incorporating eco-literacy into the school curriculum is a challenge for teachers and educators as they need to teach from an early stage the necessity of environmental awareness by giving

the students a sense of ownership and intrinsic values regarding sustainability. In this field, we consider that there is a lot to be done concerning strategy reflection about the integration of digital technologies into a more sustainable educational context. This issue essentially involves the understanding that all our students must have access to digital education as a form of connectivity, equality and inclusivity. On the other hand, thinking about transforming education for the digital era implies that all stakeholders have access to digital education, based on functional equipment, an organizational capacity for the methods to be integrated into the curricula and skills in the area.

Indeed, in today's society, we understand that the challenges of schools are based on digital transformation, the impact of which falls on school management, administrative, pedagogical and technological structures, which is why we must view digital transformation as a concept that is increasingly present in different institutions, not only because it is a process that allows the use of technological resources in order to increase organizational performance, but also because of the need for cultural change.

It's our general concern that the educational system must be improved in organizational terms, in order to enhance existing resources and reinvent others, in order to ensure that the school does not stop and that students continue to want to learn in contexts richer and more diverse.



Therefore, we must understand that it is the school's priority to train teaching staff to act competently in this new path of digital transformation that is underway. However, there is also a lack of technological investment in adequate and effective equipment and proactive teacher training to respond to this ambitious challenge. As Paulo Serra says, in his debate on schools and the balance between technology and human intervention, "In Europe we are very concerned with students' emotional issues. But now the question arises: what about you as a teacher? What can you do?"

Nowadays, eco-literacy is the opening of a path to new possibilities and ways of learning, greater connectivity between those involved in education and higher adaptation to the different needs of both teachers and students. Indeed, the digital transformation of schools necessarily implies the functioning of systems capable of working together in an articulated way, with aligned objectives, strategic intentions and in-depth knowledge on the subject.

In this context, several questions can be asked: how can we understand the interrelationships between school and society and human development, in the context of eco-literacy? How can teachers be trained in the implementation of ecological and technological integrative tools? How to promote the improvement of students' school and social learning in the era of digital culture, providing teachers with pedagogical tools that can be integrated into their educational practices? And, finally, how to understand the contributions of digital technologies and tools to curriculum development.

To understand better the interrelationships between school and society, in the context of eco-literacy, we must understand that society is the result of countless cultural, economic, organizational, ethnic and social transformations. We represent a generation with easy access to information, scientific and technological knowledge and we reinvent ways to learn and develop new skills. On the other hand, the school is a reflection of society and its transformation is the result of social transformation. In this way, the interrelationships between school and family are established from the moment a father or mother decides to enroll their child to be part of an educational community as an active protagonist. Based on this "relationship", it is the school's role to guarantee the educational and sustainable development of the student, developing the regular practice of citizenship, equity, inclusion and socialization experiences.

But, how is it possible to support scientific and sustainable skills, in the context of an increasingly digital era? Digital training for all education professionals is, therefore, the answer that will guarantee an adequate implementation of integrative cultural and technological tools. To develop digital training for teachers, we have to consider a set of measures based on digital education, professional training.



In addition to training, other fundamental actions also stand out, such as the provision of equipment suited to the needs of each class (and/or student) or educational level; the guarantee of a free mobile network for students and teachers; access to quality digital educational tools to promote innovation, creativity, inclusion and equality for everyone in the school community. Once these measures have been taken, we will then be able to talk about quality teaching in the broadest sense and will certainly contribute to promoting the success of our students, as well as improving school and social learning in the era of eco-literacy.

Indeed, enabling students to manipulate digital technologies, allowing them to ensure the appropriation and development of knowledge, through the monitoring and monitoring of information, the exchange of ideas, reflection, dialogue and experiences is the biggest challenge for any education professional. In this context, the teacher thus presents himself as an agent of true change and transformation, using the potential of digital technologies to enrich teaching with innovative and quality strategies, to meet the community's new challenges.

Finally, it is crucial we understand the contributions of technologies and digital tools to curriculum development. Nowadays, the use of the Internet at school is a requirement of the new communicational and cultural environment that emerges with the computer network. The digital world is designed as a new space for sociability, interaction, information, knowledge and training. Digital culture therefore refers to “a way of life and behaviors assimilated and transmitted in historical and everyday life marked by computer technologies, mediating communication and information via the Internet” (European Commission, 2020).

In the current digital context, “it is essential that citizens develop skills in digital and information literacy, as technological transformation in an educational context affects the mission of the school and administrative and pedagogical processes, posing a challenge in the involvement of the various stakeholders, students, teaching and non-teaching staff” (Rof, Bikfalvi & Marques, 2020). Faced with the digital transition, the teacher stops being the transmitter of knowledge and starts to assume the role of knowledge mediator, that is, he will enable the student to use digital technologies so that he can acquire knowledge and useful information. The teacher is seen as an agent of change and transformation who uses the potential of digital technologies to enrich the student's curriculum and improve their pedagogical practices.

Practical view - Personal experience as a teacher

As a teacher working in Education and taking into account my professional experience over almost three decades, I have observed that, increasingly, competitiveness in the educational sector has been increasing and as demands and changes occur in the system, It is essential to observe and analyze the necessary transformations in the field of current pedagogical practices, in order to guarantee an assertive and creative intervention with regard to the inclusion of technologies inside and outside the classroom. In order to be able to provide adequate responses to our students and implement digital literacy in our daily teaching practices, it is crucial that



school and educational institutions are receptive and qualified to progressively incorporate the digital transformation of the various learning support materials.

In fact, if we carefully observe the numerous obstacles that schools have faced while embracing eco-literacy, we are able to diagnose the barriers that have been an obstacle to the efficient implementation of technological resources and contents that, themselves, represent the biggest challenge for education. For this reason, the teacher's role to be "an activist in the universe of young people for a happy school" because, in reality, the best way to overcome difficulties is to identify and face them.

On the other hand, in a broader perspective, we understand that the collaborative methodology in building a pedagogical project is also a strong ally in reconciling the curricular matrix with technology. In other words, including the adoption of interdisciplinarity and articulated teamwork in teaching practices is a way of promoting an environment focused on open knowledge and everyone's involvement.

Another challenge that schools should not underestimate is the Curriculum Design created to meet the needs of the Inclusive Digital Education, whose involvement is crucial so that it is not just implemented in isolation, but is permanently rooted in the structures of the educational system. Indeed, digital transformation requires that all individuals, students and teachers, are involved, with inclusion and digitalization as fundamental principles. The experience of both enables greater openness to the integration of diverse Digital Tools (such as the use of Mentioner, Quizizz, Canva, Padlet, Word wall, etc.) and Design Models (*Backward Design*, *Skills-centered model*, *modular and flexible curricula*), thus allowing for more adequate management of the planning act. Furthermore, the intervention of teachers and students confirm my desire to continue developing teaching activity based on shared work and centered on the paradigm of more active and dynamic learning, thus promoting greater student involvement, since he is at the center of this learning process.

Finally, it's important to highlight the role of the teachers who have a perspective of a modern and constructivist school which implies that "the teacher is the learning assistant who monitors, creates dynamics and makes learning less painful." Being a teacher means "believing that it is possible; it is about acting to transform dreams into possible experiences."

As a conclusion, by sharing strategies and creating new curricular designs in education, we can guarantee change by knowing that the participation of teachers in interactive workshops is essential not only to introduce and develop innovative practices, but also to promote environmental awareness.



Module Structure

Topic 1: Introduction to Curriculum Design Models (*Backward Design, Skills-centered model, modular and flexible curricula*) and AI (ChatGPT)

Topic 2: Exploring quality criteria of Digital Tools (Relevance, coherence, accessibility, innovation)

Topic 3: Integrating Design Models into Curricular Design (Identifying competences and desired results for a specific lesson plan)

Topic 4: Ensuring efficiency and effectiveness of implemented Digital Tools and Models (Maximizing input and output)

ACTIVITY 1: Introducing Different Curriculum Design Models and AI (ChatGPT)

Objectives:

- To understand the characteristics of the Curricular Design models (Backward Design, Skills-Centered Model and Modular/Flexible Curricula).
- To discuss the advantages and challenges of each model in pedagogical practice.
- To create activities, learning objectives and develop pedagogical strategies with the support of AI (Artificial Intelligence).
- To apply the concepts of AI in the construction of a lesson plan based on a Curriculum Design model with the support of ChatGPT.

Description:

In this activity, teachers will explore three curriculum design models and learn how to apply each of them to lesson planning. In order to do that, teachers will use ChatGPT as a support tool, allowing them to generate ideas, suggest pedagogical activities and structure teaching strategies in a more efficient and creative way.

Materials Needed:

- Laptops or tablets.
- Free account on the platform ChatGPT

(Teachers should be encouraged to create free accounts on the digital tool before or during the session).

- Summary Guide with the main concepts of the curriculum design models.

Instructions:

Step 1: Contextualization (Curriculum Design Models and ChatGPT)

- Present the three main Curriculum Design Models. Provide a Summary Guide with the concepts and the templates of the curriculum models.



- Demonstrate how ChatGPT can be a fundamental tool in lesson planning (show the use of ChatGPT for creative ideas and the examples of questions that can be asked to the tool to obtain pedagogical suggestions).

Step 2: Practical Exploration - Using ChatGPT in Curriculum Planning

Teachers will choose one of the presented models and will use ChatGPT to build a lesson plan.

- Divide participants into small groups.
- Each group chooses a curriculum design model and a topic to plan a lesson based on the chosen template. Each group uses ChatGPT to plan the lesson.
- Teachers will create questions by using ChatGPT to generate ideas according to the following plan:
 - a) Learning Objectives (What students should achieve by the end of the lesson).
 - b) Pedagogical Strategies (How the content will be taught).
 - c) Practical Activities (How to engage students in learning).
 - d) Assessment Methods (How to measure learning success).

Note:

Teachers will use Google Docs or Office to record the lesson plan and organize the ideas created by ChatGPT. The goal is to create visual diagrams to facilitate the structuring of ideas.

Sample questions for ChatGPT:

"Create a lesson plan using the Backward Design model to teach climate change in 9th grade."

"What are effective interactive activities for a Skills-Centered model of digital literacy?"

"Suggest strategies for modulating a high school history curriculum."

Step 3: Presentation and Reflection

- Each group shares their lesson plan and explains the following:
 - a) The curriculum design model used and the reason for choosing it.
 - b) How they used ChatGPT to develop the plan.
 - c) The benefits and challenges of the model applied.



- **Open discussion:**

Teacher will discuss the benefits and challenges of ChatGPT and AI in pedagogical practice.

- a) Do you think ChatGPT was useful in planning and organizing information? Justify your opinion.
- b) What could be improved?
- c) How can AI be integrated into lesson planning in the future?
- d) What precautions should be taken when using AI in education?



Assessment

- **Group Feedback:**

The groups will give constructive feedback on the benefits and challenges of AI and ChatGPT in teaching practice.

Final Survey - All the teachers will answer the questions below:

1. Did the activity help you better understand curriculum design models?

- ☐ Yes, I understood it clearly.
- ☐ Yes, but I still have some questions.
- ☐ No, it was confusing for me.

2. Which curriculum design model do you consider most applicable to your teaching practice?

- ☐ Backward Design.
- ☐ Skills-Centered Model.
- ☐ Modular and Flexible Curricula.
- ☐ I don't know yet.

3. Was ChatGPT useful in creating the lesson plan?

- ☐ Yes, it helped me a lot with structuring and organization.
- ☐ Yes, but I still have doubts about how to optimize its use.
- ☐ No, I prefer to create lesson plans without AI.



4. What impact do you think ChatGPT can have on teaching and curriculum planning?
5. What were the main challenges or difficulties you found in the activity?
6. What did you like most about this session?
7. What improvements would you suggest for further activities?

Teachers will write short answers to questions 4, 5, 6 and 7.



60 mins

ACTIVITY 2: Exploring Quality Criteria of Digital Tools



Objectives:

- To raise awareness among teachers about the need to integrate digital and ecological literacy in school curriculum.
- To explore Digital Tools for sustainability teaching.
- To empower teachers for practical implementation of Digital Tools.



Description:

Teachers will be able to explore Digital Tools for sustainability teaching. In this activity, participants will be presented the quality criteria for selecting a digital tool, having in mind relevance, coherence, accessibility and innovation. They will also have the opportunity to explore Digital Tools (*such as Mentimeter, Quizizz, Canva, Padlet and Word Wall*) through interactive activities and innovative strategies.

By the end of the activity, teachers will share their opinions on the possibility to integrate some tools and models in the educational context.



Materials Needed:

- Laptops or tablets.
- Activity Guide which includes a summary of the main concepts covered, an explanation on the criteria of educational design models and basic instructions for exploring the digital tools.



Instructions:

Step 1: Introduction and Contextualization

- Introduce briefly Digital Eco-Literacy and the importance of sustainability in the curriculum.
- Implement Digital Tools (*Mentimeter, Quizizz, Canva, Padlet and Word Wall*).
- Present the quality criteria for the use of Digital Tools (relevance, coherence, accessibility, innovation).
- Discuss how these tools match eco-literacy goals and encourage critical awareness in students.



Step 2: Exploring Digital Tools

- Divide participants into small groups.
- Each group chooses a digital tool to explore:
 - a) Mentimeter (for Interactive presentations);
 - b) Quizizz (for customizable questionnaires, with game elements such as scores, rankings and avatars);
 - c) Canva (for Graphic design and presentations);
 - d) Padlet (collaborative mural);
 - e) Word Wall (educational games).
- Each group creates a small practical activity using the chosen digital tool, focusing on sustainability topic.

Step 3: Presentation and Reflection (Group interaction – feedback)

- Each group shares their activity and provides feedback, focusing on:
 - a) The importance of the tool for the learning process;
 - b) The alignment of the digital tool with educational design models;
 - c) How the tool meets the quality criteria discussed.
- **Open discussion:** reflection on the potential and application of the digital tool in the classrooms.



Assessment

• Group feedback:

The groups give constructive feedback on the impact of the different tools and activities to measure the engagement and learning of the participants, ensuring that the objectives have been achieved.

• Questions for reflection:

1. Have you implemented any of the following educational design models before?

- a) Backward Design
- b) Skills-Centered



- c) Modular/Flexible
- d) None

2) Which of these digital tools have you used?

- a) Mentimeter
- b) Quizizz
- c) Canva
- d) Padlet
- e) Word Wall
- f) None

3) What future expectations do you have for the use of the tools and activities presented in the session? *(Open-ended question).*



60 mins

ACTIVITY 3: Integrating Design Models into Curricular Design

Objectives:

- To understand how educational Design Models can improve student learning and contribute to school curriculum.
- To integrate different Design Models and reflect on their impact on teaching.
- To apply Design Models to curriculum planning using Backward Design, Skills-Centered Model and Modular/Flexible Curricula.

Description:

This activity aims to enable teachers to organize and structure contents in a more intuitive and dynamic way. Teachers will create interactive and personalized resources to better engage participants / students in their learning process. During the activity, participants will explore different educational Design Models and learn how to apply these models to build a lesson plan, by using **Notion** software as the main digital tool. The aim is to inspire collaboration and participation and creativity among participants, allowing more enriched planning.

Materials Needed:

- Laptops or tablets with internet access.
- Projector and screen.
- Free account on the platform **Notion**.

(Creation of free accounts on the digital tool will be required before or during the session).

- Documents with examples of educational design models (participants will have access to documents with a summary of the main concepts covered and the explanation of educational design models).



Instructions:

Step 1: Contextualization and demonstration

- Demonstrate the importance of educational design models in curriculum planning, highlighting Notion as a digital tool for organizing and structuring lesson plans.
- Show an example of a structured page in Notion with organized data (technical elements and quick tips to use in Notion).

Step 2: Exploring and using the tool Notion to organize a lesson plan based on an educational Design Model

- Divide participants into small groups.
- Each group chooses a theme and an Educational Design Model.

Example: *Sustainability and Responsible Consumption*

- Each group will create a structured page in Notion, by including the following information in the lesson plan (participants will follow the guidelines below):

a) Lesson Title and Level of Education

Example: Impact of Climate Change (9th grade).

b) Skills to be Developed

Examples: Critical thinking, data analysis, teamwork.

c) Learning Objectives

Example: Students will be able to identify sustainable consumption habits.

d) Planned Activities

Examples: Analysis of a film, group debate, creation of a sustainable action plan.

e) Assessment Methods (evaluation)

Examples: Final presentation, online questionnaire, written reflection.

Step 3: Presentation and Reflection

- Each group will present their lesson plan created in Notion.

They will explain and show:

- a) The design model they chose and why;
- b) The topic they chose for the plan;
- c) How they structured the lesson plan in Notion bearing in mind the given example;
- d) How they plan to assess student learning (Evaluation methods – which method they will use).



Assessment

Final Feedback – Questionnaire

Teachers will provide their feedback by completing the questionnaire below:

1. How well did you understand educational Design Models in curriculum planning?

- ☐ Very well
- ☐ Somewhat well
- ☐ Neutral
- ☐ Not very well
- ☐ Not at all

2. How well did you understand the relevance of the use of the tool Notion?

- ☐ Very well
- ☐ Somewhat well
- ☐ Neutral
- ☐ Not very well
- ☐ Not at all

3. Do you believe the use of the platform Notion helps you structure your lesson plan better?

- ☐ I totally disagree
- ☐ I disagree
- ☐ I am indifferent (or neutral)
- ☐ I agree
- ☐ I totally agree

4. How engaging did you find the process of planning by using Design Models?

- ☐ Extremely engaging
- ☐ Very engaging
- ☐ Moderately engaging
- ☐ Slightly engaging
- ☐ Not engaging



5. Were the instructions and materials provided clear and helpful?
- Yes, very clear
 - Somewhat clear
 - Neutral
 - Slightly unclear
 - Not clear at all
6. How do you maximize the use of the platform?
7. What challenges did you face during the activity planning, and how did you overcome them?
8. How do you think the different tools presented can enhance students' understanding of eco-literacy concepts?
9. How confident do you feel in using digital tools and Design Models in curriculum planning?
- Very confident
 - Confident
 - Neutral
 - Slightly confident
 - Not confident



60 mins

ACTIVITY 4: Ensuring efficiency and effectiveness of implemented Digital Tools and Design Models

Objectives:

- To understand the importance of efficiency and effectiveness in implementing digital tools.
- To analyze and evaluate the use of different digital tools, platforms and educational models.
- To create a comparative chart of digital tools and discuss which ones offer the greatest educational feedback.

Description:

Through this activity, participants will be able to evaluate different digital tools and design models used in the classroom, analyzing their impact and efficiency. New tools such as *Canva*, *Quizizz*, *Metimenter*, *Padlet*, *Word Wall* and *Notion* will be evaluated by participants to determine whether the tool maximizes the relationship between input (effort and resources invested) and output (learning results). In the end of this activity, teachers will have a more critical and strategic view of the digital tools they use in their classroom to optimize their potential.

Materials Needed:

- Free account on the different platforms to be used (Participants should have their free accounts on the various digital tools).
- Guide to Criteria for Evaluating Digital Tools (Table with efficiency and effectiveness indicators).

Instructions:

Step 1:

- Divide participants into small groups.
- Assign each group one of the following digital tools to analyse / evaluate:
 - a) Canva
 - b) Quizizz
 - c) Metimenter
 - d) Padlet
 - e) Word Wall

f) Notion

- Provide the Guide to Criteria for Evaluating Digital Tools.
- Groups will analyse and assess tools based on the table with efficiency and effectiveness indicators.

The guide below will be used in order to evaluate the efficiency and effectiveness of digital tools used during the session:

Criteria	Description	Score (1-5)
Ease of Use	Is the tool intuitive and easy to learn for teachers and students?	☐ ☐ ☐ ☐ ☐
Learning Curve	Does the initial setup and learning of the tool take little time?	☐ ☐ ☐ ☐ ☐
Accessibility	Is the tool available on different devices and does it support students with special needs?	☐ ☐ ☐ ☐ ☐
Curriculum Integration	Can the tool be easily integrated into curricular objectives and activities?	☐ ☐ ☐ ☐ ☐
Personalization	Can it be adapted to different teaching and learning styles?	☐ ☐ ☐ ☐ ☐
Interactivity	Does the tool promote active student participation and encourage engagement?	☐ ☐ ☐ ☐ ☐
Feedback and Assessment	Does it allow for automated or real-time collection of data on student progress?	☐ ☐ ☐ ☐ ☐
Security and Privacy	Does the tool comply with data protection standards (e.g. GDPR) and does it not expose sensitive information?	☐ ☐ ☐ ☐ ☐
Value for Money	Does the pedagogical return justify the investment of time or money in the tool?	☐ ☐ ☐ ☐ ☐

Student-Teacher Interaction	Does it facilitate communication and monitoring of student progress?	☐ ☐ ☐ ☐ ☐
Student Collaboration	Does it offer features for collaborative work and sharing of ideas?	☐ ☐ ☐ ☐ ☐
Compatibility with Other Platforms	Does it integrate easily with other digital tools used in the school?	☐ ☐ ☐ ☐ ☐
Sustainability and Longevity	Is the tool regularly updated and does it have technical support?	☐ ☐ ☐ ☐ ☐
Adaptability to Different Teaching Methods	Can the tool be used in face-to-face, hybrid or distance learning?	☐ ☐ ☐ ☐ ☐

Provide these guidelines to participants (how to use this chart):

1. Choose the digital tool to be evaluated;
2. Assign a score from 1 (poor) to 5 (excellent) for each criterion;
3. Add up the total score to get an overview of the tool;
4. Compare with other tools to make an informed decision;
5. Reflect on how to adapt the tool to optimize teaching.

Step 2:

• Group discussion:

In groups, participants will do a practical analysis of the digital tool they were assigned after testing it. This task will be done during the session.

They will analyze and discuss the following questions:

Criteria	Questions
Ease of use	Is the tool you chose intuitive for teachers and students?
Implementation time	How long does it take to set up and implement in the classroom?
Accessibility	Is it available on different devices? Does it support students with special needs?
Curricular integration	Can it be easily integrated into curricular objectives and activities?
Student engagement	Does it encourage active participation and improve the learning experience?
Security and privacy	Does it protect user data?
Cost-effectiveness	Does the educational return justify the investment of time or money?



Step 3:

• Presentation:

Each group will present their digital tool, explaining the pros and cons of the chosen one.

• Final discussion:

Participants will share their opinions on the implementation of each tool to maximize results in the students' learning process. They will also discuss the good practices that teachers can adopt in order to optimize the use of technology in teaching.



Assessment

• Questionnaire

Participants will complete the survey below having in mind the practices they adopted before and after the session.

Initial Diagnosis

- a) Which digital tool do you regularly use in class? (Open-ended answer.
- b) Have you evaluated the efficiency and effectiveness of the tool(s) you use in your classroom?
 - Yes
 - No
 - Little experience
- c) What are the biggest challenges in implementing technology in education? (Open-ended answer).

Self-Assessment and Final Feedback (at the end of the session)

- a) Did the activity help you identify ways to improve the efficiency and effectiveness of digital tools? Justify your answer.
- b) Which digital tool is most interesting and applicable to your reality? (Open-ended answer)
- c) How could you improve the use of digital tools in your context? (Open-ended answer)



d) Do you intend to regularly evaluate the digital tools used?

- ☐ Yes
- ☐ Maybe
- ☐ No
- ☐ Justify your answer.



60 mins

Module 3

Assessment Strategies for Eco-Literacy Learning



Objective:

- To introduce different types of assessment strategies for eco-literacy learning.
- To provide effective and innovative examples of assessment strategies for eco-literacy learning.
- To increase knowledge, skills and competences of eco-literacy and interdisciplinary teaching.
- To improve creativity, collaboration problem solving and critical thinking skills.
- To empower teachers with awareness and behaviour changing tools.

Learning Outcomes:

- Understand the role of assessment in providing leadership attitude in eco-literacy.
- Choose appropriate assessment strategies according to the students and lesson.
- Improve eco-literacy knowledge, skills and competences.
- Enhance eco-friendly attitudes and behaviours in their students.
- Enhance collaboration, innovation and digitalisation in the class.
- Improve leadership values related to the environment.



3 Hours

Key Concepts: eco-literacy, formative assessment, summative assessment, collaborative assessment, interactive assessment, project based assessment, eco-friendly behaviour changes

Theoretical Component

The assessment of eco-literacy learning can be approached using various effective assessment strategies which should evaluate knowledge and skills, but also foster critical thinking, problem-solving, and behavioural change related to environment. The focus should be on understanding of environmental issues, sustainability and the interconnectedness of human and ecological systems.

Several strategies of assessment may be effectively used for eco-literacy learning and positive behaviour change, such as:

- **Formative Assessment techniques:**
 - **Nature journals** documenting students' thoughts, reflections and learning throughout an eco-literacy course or project and focusing on what they observe, their understanding of eco-systems, and how their views on sustainability evolve;
 - **Nature scavenger hunts** assessing knowledge of local flora and fauna, observation skills, and teamwork;
 - **Ecological footprint calculators;**
 - **Concept mapping or mind maps** about key topics (e.g., climate change, biodiversity, water cycles) helping assess students' understanding of relationships and systems thinking.
- **Summative Assessment techniques:**
 - **Quizzes** or written exams;
 - **Presentations** that demonstrate students' understanding of an environmental issue and propose solutions;
 - **Portfolios** of students' work throughout the course, including research papers, projects, reflections, and other assignments that can be assessed for both depth of knowledge and the ability to apply eco-literacy principles in different contexts.
- **Project-Based Assessment techniques:**
 - **Sustainability projects** on real-world sustainability initiatives (e.g., waste reduction campaigns, community gardens, energy audits). The assessment can involve evaluating the process, the impact of the project, and the reflection on learning outcomes.
 - **Environmental case studies** (e.g., deforestation, water scarcity, urban planning) in which students can be asked to propose solutions or assess the effectiveness of existing responses.
 - **Design challenges:** students may be engaged in designing sustainable solutions (e.g., designing a sustainable house, creating an eco-friendly transportation system) which requires both creativity and an understanding of ecological principles, and can be assessed through a rubric focused on feasibility, innovation, and environmental impact.



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- **Behavioural and Action-Based Assessments**
 - **Behavioural Change Logs:** asking students to track personal behaviour changes over time (e.g., reducing waste, using public transportation, conserving water). Reflection on these changes can indicate a deeper understanding of how individual actions connect to broader ecological outcomes.
 - **Community Engagement:** engaging in community outreach programs related to environmental issues, and assessing their impact on the community (e.g., educational campaigns, local sustainability initiatives) based on participation, engagement, and outcomes.
- **Collaborative and Interactive Assessments**
 - **Group Work and Collaborative Learning:** assigning group tasks that require students to work together—such as designing a sustainability plan for their school or developing a local environmental policy—can assess teamwork, problem-solving, and communication skills. Peer evaluations can also be part of the assessment.
 - **Role-Playing and Simulations:** Organize role-playing scenarios where students take on the roles of different stakeholders in an environmental issue (e.g., government, industry, local community). Their ability to understand diverse perspectives and negotiate solutions can be assessed.
- **Integration of Sustainability Metrics:**
 - **Sustainability indicators** (e.g., carbon footprint, water usage, biodiversity) for assessing projects or behaviours;
 - **Eco-literacy scorecards or rubrics** used to assess the environmental impact of students' work related to areas like resource use, waste, environmental justice, and long-term sustainability.
- **Feedback and Continuous Improvement:**
 - **Teacher/trainer's feedback:** providing ongoing, personalized feedback on student work can encourage growth in both knowledge and action.
 - **Peer Review:** encouraging peer feedback, especially for collaborative projects can help students gain diverse perspectives and improve their projects based on constructive criticism.



Module Structure

Topic 1: Eco-friendly behaviours. Formative assessment techniques

Topic 2: Environment famous personalities. Summative assessment

Topic 3: Project-based assessment

ACTIVITY 1: Formative Assessment Techniques



Objective:

- To introduce techniques of formative assessment in eco-literacy learning.
- To familiarize teachers with examples of formative assessment techniques related to eco-literacy.
- To practice formative assessment exercises applied to eco-literacy.
- To improve reflection and self-reflection on the human's relation to the environment.



Description:

The activity will focus on introducing several formative assessment techniques that might be applied at the end of the eco-literacy lessons. Teachers will work some practical examples of formative eco-literacy assessment individually, in small groups and with the entire class which they will be able to effectively replicate with their classes. The activity is centred on attitudes and behaviours changing related to environment. All the exercises provided may be done in a traditional, as well as using ICT skills.



Materials Needed:

- Sheets of paper, pens, coloured pencils
- Laptops or tablets
- Worksheets



Instructions:

Step 1:

- Warm-up activity: Ask participants to stand in a circle and brainstorm about "Eco-friendly behaviours" until no more answers come up. E.g.: plant trees...



- Discuss the importance of evaluating eco-literacy knowledge, skills and competences, using the following questions:
 - How do you usually assess eco-literacy knowledge?
 - What about eco-literacy behaviours?
 - What interactive strategies do you use?
 - How can you make assessment friendly and fun?
 - How often do you use non-formal assessment methods in class?
- Summarize the class discussion.

Step 2:

- Invite participants to assess their sustainable behaviours by writing a diary page for one day at their choice in which to mention their eco-friendly practices, as well as practices that need to be changed or improved. You may use the following template:
[Eco-friendly practices](#)
- Ask some participants to share their inputs with the class. Invite them to discuss about the feasibility and deadlines of implementing changes and improvements.

Step 3:

- Split participants into small groups of 3 to 5 participants.
- Ask each group to create a concept map or mind map about one key topic, such as: biodiversity, climate change, sustainable transportation, ecological urban development, food waste, green energy, etc. Groups may write it on paper or use the following online example:
[DigiEco Mind Map Template](#)
- Invite participants to share their mind maps with the class and explain in which lessons they could use this technique with the class and with what benefits.



Assessment

- Pre- and Post-Session Assessment
 - 1.What techniques of formative assessment can you apply for eco-literacy learning? (multiple choice answer)



- a. Diary/Journal
 - b. Mind mapping
 - c. Peer assessment
 - d. Self-assessment
2. What is important to assess related to eco-literacy learning? (multiple choice answer)
- a. Knowledge
 - b. Skills
 - c. Behaviours
 - d. Attitudes
3. Suggest a formative assessment exercise for the topic Eco-friendly behaviours.



60 mins

ACTIVITY 2: Summative Assessment Techniques



Objective:

- To introduce techniques of summative assessment in eco-literacy learning.
- To familiarize teachers with examples of summative assessment techniques related to eco-literacy
- To practice summative assessment exercises applied to eco-literacy.
- To increase environment leadership skills through summative assessment.



Description:

Participants will become familiar with summative assessment techniques and will have the chance to experiment a complex activity which will familiarize them with leadership values and famous personalities in the environment field. Teachers will also be provided with objective criteria for a written and oral presentation and will be asked to discuss the correlation between the



Materials Needed:

- Sheets of paper, pens, coloured pencils
- Laptops or tablets
- Worksheets: List of environment personalities, Presentation Assessment.



Instructions:

Step 1:

- Brainstorm with participants about leadership and specific skills proved along history by environmental activists, such as: love for nature, curiosity, courage, vision, communication, critical thinking, collaboration, creativity, adaptability...

Step 2:

- Split participants into groups of 4-5 participants.
- Provide a [list of environment famous personalities](#) and ask participants to web quest about them and elaborate a group presentation using the following prompts:



- Who was she/he (name, country, year and birth place, studies, relevant personal information)?
- What did she/he do related to the environment?
- What is she/he famous for? How did she/he influence people mentality about environment?

- Ask each group to give a presentation.
- Participants should evaluate their colleagues presentations taking into consideration the following criteria: 1. Organization, 2.Content: if information is accurate, clear, relevant, objective, sufficient, interesting, complete, and adapted to the purpose of the presentation, 3.Clarity, 4. Positive outlook, 5. Quality of the given presentation. Participants may use the following [Presentation Assessment Worksheet](#).

Step 3:

- Discuss with the class about the results of the assessment of the presentation and correlate the quality of the presentations provided with the level of knowledge and skills acquired.



Assessment

- Pre- and Post-Session Assessment
 - 1.What techniques of summative assessment can you apply for eco-literacy learning? (multiple choice answer)
 - a.Quizzes
 - b.Tests
 - c.Presentations
 - d.Portfolios
 2. What criteria can you use for assessing a written and oral presentation?
 - a.organisation, content, outlook.
 - b.content, clarity, quality of the oral presentation.
 - c.organisation, content, clarity, positive outlook, quality of the oral presentation
 - d. clarity, positive outlook, quality of the given presentation.
 - 3.Suggest a summative assessment exercise for the topic environmental leadership.



60 mins

ACTIVITY 3: Project-based assessment



Objective:

- To introduce project-based assessment techniques in eco-literacy learning.
- To familiarize teachers with project-based examples of assessment applied to eco-literacy
- To empower participants to build environmental initiatives.



Description:

Participants will be introduced into project-based assessment strategies following a period of teaching environment topics. Teachers will also be provided a list of environment assessment criteria which they can use as a guide in elaborating the presentations, as well as in assessing the presentations achieved. A list of environment top urgency subjects is also provided for the presentations. Group work abilities, fair distribution of tasks, knowledge sharing, critical thinking are highly encouraged.



Materials Needed:

- Sheets of paper, pens, coloured pencils
- Laptops or tablets
- Worksheets



Instructions:

Step 1:

- The trainer introduces the [criteria for project environment assessment](#) to the participants and invites them to take them into consideration in the next activity.

Step 2:

- Participants are asked to work in small groups. Each group should elaborate a sustainability project which seems of maximum urgency for the local community. They may choose among the following topics:
 - climate change and global warming,



- air, soil and water pollution,
- biodiversity loss and conservation,
- water scarcity and management
- assessing water consumption patterns, waste, and conservation methods.
- deforestation and land degradation
- sustainable agriculture and food systems,
- energy consumption and renewable energy,
- environmental justice and equity.

Participants are invited to share roles and web quest for information. The activity should last for 20 - 25 minutes. The presentation should fit into maximum one page.

Step 3:

- Each group is invited to present briefly their local community project, while the other groups are should evaluate each project according to the given criteria and make recommendations for the projects' improvement.

Step 4: The class will vote for the best project.



Assessment

- Pre- and Post-Session Assessment
 1. What criteria for project-based environment learning can you use? (multiple choice answer)
 - a. Environmental impact
 - b. Social impact
 - c. Economic sustainability
 - d. Innovation
 - e. Replicability
 - f. All the above
 2. What skills are most valuable in environment project-based assessment? (multiple choice answer)
 - a. Knowledge
 - b. Team work
 - c. Web search abilities
 - d. Knowledge sharing abilities
 - e. Critical thinking
 - f. All the above
 3. Suggest a project-based exercise for an interdisciplinary workshop you would like to organize.



60 min



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Module 4 Digital citizenship and environmental ethics



Objectives:

Digital citizenship

- Strengthening responsible digital participation.
- Promoting digital literacy.
- Encouraging lifelong learning.
- Integrating resilience.

Ethics in the environment - Environmental ethics

- Fostering sustainability.
- Promoting ethical awareness.
- Encouraging individual responsibility.
- Increasing interconnectedness.

Learning outcomes:

Learning outcomes for digital citizenship

- Understanding and application of digitization.
- Development of digital skills.
- Practical implementation.

Learning outcomes for environmental ethics

- Ethical frameworks.
- Critical thinking.
- Practical implementation



3 Hours

Key concepts: Digital access, digital literacy, digital etiquette, rights and responsibilities, digital healthy relationship, intrinsic value, ethical judgments, human values.

Theoretical Component

Digital citizenship and environmental ethics

Digital citizenship and environmental ethics intersect in encouraging responsible, ethical and sustainable behavior in the digital age. The moral and ethical issues related to life itself, with all levels and degrees of development, today, are far more present than before. A new interdisciplinary science has appeared - ecological bioethics, which systematically studies and evaluates human behavior in the field of life and health sciences, in the light of moral-ethical values and principles. With this, an attempt is made to cover all the problems that appear in the relationship with life. But at the same time, apart from issues related to human life, bioethics also investigates the attitude towards life in general, all its levels, it also covers the issue of favorable and unfavorable conditions for life and health, as well as the issue of the environment, or rather the entire area of the biosphere. It is difficult, if not impossible, to be without the Internet these days, both in your professional and personal life. Although the Internet is everywhere, we need to learn to use it in the best possible way, which requires more control and a better understanding of our digital life.

What is digital citizenship?

Digital citizenship shows how internet users behave and communicate online - on the internet. This is essentially the behavior we adopt when interacting online with other users about sensitive social or political topics. The rights and responsibilities we have in real life are the same online. Our behavior and our interactions online define how others perceive us. The way we communicate online isn't just limited to our behavior or our posts, but also the way we protect our privacy, whether it's our passwords, location or online history. Digital citizenship educates us to have a more critical view of the internet, as well as the way we use it, especially regarding the personal data we share,... sometimes without even knowing it.

Key aspects of digital citizenship

- **Digital citizenship** involves using digital technologies responsibly, ethically and empathetically, while ensuring cyber security, privacy and inclusiveness.
- **Basic elements** - digital literacy: skills to be responsible for accessing, evaluating and creating digital content.
- **Ethics and empathy** - promoting respectful interactions and understanding of different perspectives.



- **Privacy and security** - protection of personal data and respect for the privacy of others.

- **Rights and Responsibilities** - respecting freedom of expression, adhering to laws such as copyright and anti-discrimination ethics in digital technology.

- **Impact assessment** - Strategies for measuring and minimizing the environmental footprint of technology development.

- **Sustainability** - advocacy of eco-friendly practices in the production and use of technology, such as recycling electronic waste.

- **Digital literacy** as environmental ethics: encouraging the conscious use of digital resources, in order to reduce harm to the environment. Creating a conscious society where individuals behave responsibly - online and offline - while addressing the challenges of social inclusion, equity and sustainability.

Why is digital citizenship important?

Digital citizenship refers to the responsible, ethical and safe use of digital technologies. It covers skills such as protecting personal information, identifying credible sources, behaving respectfully online and understanding the impact of digital actions on oneself and others.

Online Safety - Educates individuals to avoid cyber threats such as fraud, cyberbullying and invasion of privacy.

Critical thinking - promotes media literacy to distinguish reliable information from misinformation.

Respectful Activities - encourages empathy, tolerance and ethical behavior in digital interactions.

Empowerment - enables individuals to use technology to advocate, solve problems and build community. The increasing use of the digital world means that digital citizenship is vital to fostering a safe and productive online environment, while preparing people to act responsibly across complex digital spaces.

Digital citizenship can significantly contribute to environmental sustainability in the following ways:

1. **Promoting sustainable practices.** Digital tools and platforms enable individuals to use low-waste practices, such as reducing the use of paper in education, by shifting resources to digital, thereby minimizing carbon emissions.

2. **Raising awareness.** Digital citizens can use online platforms to advocate for climate justice, educate others about environmental issues, and promote sustainable behavior globally.

3. **Encouraging green skills.** By fostering digital literacy and green skills, digital citizenship helps individuals effectively manage their carbon emissions and make sustainable decisions in their daily lives.



4. **Leveraging technology for sustainability.** Technologies such as artificial intelligence can optimize resource use, reduce pollution and support renewable energy initiatives, aligning with sustainable development goals. Through responsible digital engagement, individuals can lead collective action towards a more sustainable future.

5. **Good digital practices** - The term good practices also refers to the way we should behave in order to contribute to the internet space of freedom and mutual respect, but also rules that websites and applications require us to respect. Many websites and web services impose rules that define the behavior to be observed as well as the rights of users.

How digital citizenship skills influence attitudes towards sustainable development

- Digital citizenship skills significantly influence attitudes towards sustainable development by fostering awareness, responsibility and action.

Key findings:

1. **Positive correlation.** Research shows a strong positive relationship between digital citizenship skills and attitudes towards sustainable development. These skills enhance individuals' ability to engage in ethical digital practices that align with sustainability goals, such as resource optimization and pollution control.

2. **The impact of training.** Digital citizenship skills training programs have been found to improve students' attitudes towards sustainable development. Those who had such training showed more positive attitudes compared to those who had no training.

3. **Strengthening action.** Digital citizenship skills empower individuals to use technology for sustainable development initiatives, such as promoting environmental awareness, supporting eco-innovation, and collaborating in global sustainability efforts.

By integrating these skills into education, students can better contribute to the achievement of the Sustainable Development Goals.

What is environmental ethics?

Digital citizenship and digital ethics are closely related concepts of how to behave responsibly and ethically in the age of artificial intelligence in the digital world. Digital ethics are rules and moral principles that govern the interpersonal behavior of individuals. In general, digital citizenship and ethics are related concepts that deal with the moral and social aspects of digital technology.

Ethics - is conceptually a set of temperament, behavior and activities of a person in society. We call ethical - moral laws the laws that regulate the behavior of individuals in society. Ethics is a set of rules that shape people's lives. In this concept of ethics, which facilitates people to live together in the same environment, they have a responsibility towards the natural environment in which they live. Environmental ethics covers the role of ethics in the relationship between man and the environment. All creatures are part of society and are considered functional elements of life. Therefore, according to environmental ethics, each individual should consider



moral and environmental values in their behavior towards others. Their common goal is to make the human environment more pleasant, cleaner and safer to live in.

- Ethics is the basis for balancing environmental protection and development activities.
- Ensures sustainable use of natural resources and protects the rights of future generations.
- All principles are based on justice and equality.
- Regulates the relationship between man, society and nature, accepts the principle of non-dominance. Man is part of the universe and must continue to behave ethically towards nature.
- Environmental laws are very important in this regard. Each element of the ecosphere depends on many different elements.
- The balance of the ecosphere is maintained.
- An ecosystem is compatible and consistent with itself and all the elements it contains. The deterioration of the ecological ethical balance leads to negative effects.

The meaning of environmental ethics

Fostering sustainability. Meeting current needs without endangering future generations through sustainable use of resources and preservation of the environment.

Promoting ethical awareness. It develops frameworks to address issues such as pollution, biodiversity loss and climate change, while respecting the intrinsic value of nature.

Encouraging individual responsibility. It inspires actions that lead to resource conservation, that reduce waste and support ecological balance on a personal and societal level.

Advanced interconnectivity. It highlights the interplay between humans, ecosystems and technology to create a harmonious relationship with nature.

Module Structure

Topic 1: What is digital citizenship?

Approach to the concept of digital citizenship.

Topic 2: What is environmental ethics - Ethics for the environment?

Topic 3: Key Concepts for Digital Citizenship and Environmental Ethics.

Topic 4: Good digital practices.

Finding concrete examples of good practice on the Internet.

Examining ethical use of digital tech in environmental education, covering digital citizenship and environmental justice topics

Activity 1: Digital Citizenship

- **Objectives:**

- Education for digital citizenship
- Online scenarios for learning through play
- Creation of digital campaigns
- Fact-checking challenges
- Public announcements
- Fair for digital citizenship



Description:

Digital citizenship education is very important for all people. Nowadays, children spend a lot of time connected to digital technology. To communicate, learn, work and play responsibly in this environment, they need to develop a whole range of competencies that will enable them to take advantage of the benefits and opportunities of digitization and overcome the negatives they will encounter. This is the goal of digital citizenship education to provide young people with innovative opportunities to develop the values, attitudes, skills and knowledge necessary for everyone to participate and assume their responsibilities in society.

Fact-Checking Challenges -Participants research news headlines to distinguish between credible and fake information, strengthening critical thinking and digital literacy.

<https://www.moepp.gov.mk/ministerstvo/organi-sostav/uprava-zivotna-sredina>

Public announcements - Groups create short messages on digital citizenship topics such as cyberbullying or privacy using creative tools such as Animoto or Green Screen.



Materials Needed:

Technology tools: - Computers, tablets or smartphones to create digital content

- Presentations - link
- Online tools like Animoto, Adobe Spark or Google Docs for collaboration and content creation



- Access to platforms like Interland or Pear Deck for interactive lessons.

https://beinternetlegends.withgoogle.com/en_ie/interland

<https://app.peardeck.com>

- Visual aids: - Informative videos on digital citizenship topics

<https://www.ekoloji.com/mk>

<https://www.unicef.org/northmacedonia/mk>

<https://faktor.mk/upravuvanje-na-kvalitetot-na-zivotnata-sredina->



Instructions:

Around 40 participants will participate in this activity and will be divided into smaller groups (they will be divided into around 6 groups)

Step 1: Introduction to Digital Citizenship

- Powerpoint presentation link
- Lecture on how these activities can improve digital citizenship skills

Step 2: Group Assignment - Participants will be divided into smaller groups

Training on how to use online tools like Animoto, Adobe Spark or Google Docs to create digital citizenship content

<https://animoto.com/projects>

<https://express.adobe.com/page>

<https://docs.google.com/document>

Step 3: Individual Assignment - Each participant will try to review and use these online tools, to see how they work and to create a short content on one of the digital citizenship topics. Presentations of few of them.

Step 3: Individual Task - Each participant will try to review and use these online tools, to see how they work and to create a short content on one of the digital citizenship topics

Step 4: Group Discussions - Each group will express how these activities can improve digital citizenship skills and how these activities can improve digital citizenship skills.

Debate with the group on the following topics: - Each group will give their own suggestions on how to merge digital citizenship with education and how this will impact the environment



Here are some essential questions about digital citizenship that teachers can ask students to promote responsible and safe online behavior:

1. Digital Literacy & Critical Thinking

- How can you tell if an online source is trustworthy?
- What should you do if you see information online that seems biased or false?
- Why is it important to think before sharing or reposting something?

2. Online Safety & Privacy

- What personal information should you never share online?
- How can you create a strong password, and why is it important?
- What should you do if someone you don't know contacts you online?

At the end of this step all of participant will tell their opinion about these topics and make conclusion.



Assessment - For digital citizenship:

1. Frameworks and models: - includes digital access, literacy, manners, rights, safety and health.
 - Other models emphasize political activism, technical skills, and global awareness.
 - Tools such as questionnaires and scenario-based evaluations are commonly used to measure competencies such as online manners - etiquette and privacy awareness.
2. **Methods** - Assessment often includes test-type evaluations, self-assessment and performance-based assignments.



60 mins

Activity 2: Environmental ethics



Objectives:

1. What is environmental ethics?
2. Debate on ethical issues
3. Analysis of environmental news
4. Projects for active values
5. Community-based projects
6. Blog about ethics and climate change



Description:

Introducing what is environmental ethics

Environmental ethics - ethics for the environment, is conceptually a set of character, behavior and movements of the person. We call fundamental moral laws the laws that regulate the behavior of individuals in society. Ethics is a set of rules that shape people's lives. In this concept of ethics, which facilitates people to live together in the same environment, they have a responsibility towards the natural environment in which they live. Environmental ethics covers the role of ethics in the relationship between man and the environment. All creatures are part of society and are considered functional elements of life. Therefore, according to environmental ethics, each individual should consider moral and environmental values in their behavior towards others. Their common goal is to make the human environment more pleasant, cleaner and safer to live in.

Environmental Ethics - key concepts

Fostering sustainability. Commit to meeting current needs without endangering future generations through sustainable use of resources and preservation of the environment.

Promoting ethical awareness. Develop frameworks to address issues such as pollution, biodiversity loss and climate change, while respecting the intrinsic value of nature.

Encouraging individual responsibility. Inspire actions that protect resources, reduce waste, and support ecological balance on a personal and societal level.



Advanced interconnectivity. Highlight the interplay between humans, ecosystems and technology to create a harmonious relationship with nature.



Materials Needed:

Materials for activities on digital citizenship and environmental ethics

Smartphones, laptops, tablets, internet, presentations.

- Computers, tablets or smartphones to create digital content
- Online tools like Animoto, Adobe Spark or Google Docs for collaboration and content creation.
- Access to various information platforms.

<https://talmil.org/>, <https://www.ecolabel.org/mk>, <https://ecologic.mk>,



Instructions:

About 40 participants will be in this activity divided into small groups

Step 1. Introducing Environmental ethics activities

Debate Ethical Issues - Participants debate environmental dilemmas e.g. carbon emission, water use, by presenting arguments supported by scientific documents and ethical principles.

<https://www.nano-lab.com.tr/mk/blog/detail/co2-3820>

Step 2. Environmental News Analysis - Participants analyze local and national environmental news, summarizing ethical conflicts and presenting their future initiatives.

<https://www.ekoloji.com/mk>

<https://www.unicef.org/northmacedonia/mk>

<https://faktor.mk/upravuvanje-na-kvalitetot-na-zivotnata-sredina->

After analyzing the news, each group provides initiatives for future activities to be undertaken regarding ethics and the environment.

Step 3. - Active Values Projects - Participants research organizations that engage in environmental ethics and propose actions to support causes such as sustainability or environmental conservation.

<https://ecologic.mk>

<https://www.ecolabel.net/mk/eco-label/eco-label-uluslararası-standartlarda-eko-etiket-programi/>



Step 4. Community-based projects - Participants identify local environmental challenges and develop solutions using digital tools, such as creating awareness campaigns through digital applications.

<https://www.nrs.mk>

Step 5. Ethics and Climate Change Blog - Participants explore ethical principles related to sustainability and present their ideas through collaborative blogs or videos.

<https://klimatskipromeni.mk/blog>

Group debate about these topics: Ethical Use of Technology

- Is it okay to use AI tools (like ChatGPT) for schoolwork? When is it helpful, and when is it cheating?
- Should you report if you see someone hacking or cheating online? Why or why not?
- How can technology be used to make a positive impact in your community?

They share their opinions about this topics and discuss about them. At the end they sublimates their opinions and make conclusion.



Assessment

On environmental ethics:

1. Frameworks for ethical analysis: - Ethical impact assessments focus on principles such as sustainability, justice and non-maleficence.

- Tools such as stakeholder analysis, predictive methods (eg environmental scanning) and participatory approaches are used for environmental ethics evaluations.

2. Rubrics and tools: - Instruments such as the Global Digital Citizen Rubric assess environmental stewardship by evaluating the understanding of individual and community impacts on the environment.

- ETHAS (Ethical Assessment Tool) provides a structured method for ethical self-evaluation tailored to specific topics. These frameworks combine digital literacy with ethical principles to foster responsible citizenship in both the digital and environmental domains.



60 mins



ACTIVITY 3: Key Concepts for Digital Citizenship and Environmental Ethics

Objectives:

Key Concepts for Digital Citizenship and Environmental Ethics

- Digital access
- Digital literacy
- Digital good manners
- Rights and responsibilities
- A digital healthy relationship
- Good digital practices.
- Intrinsic value
- Anthropocentrism vs. Ecocentrism
- Ethical decisions
- Human values

Description:

About 40 participants will be in this activity divided into small groups

Will discuss about:

1. Digital citizenship and environmental ethics intersect in encouraging responsible, ethical and sustainable behavior in the digital age.
2. Digital citizenship and about the responsible and ethical use of technology to engage with society.
3. Environmental ethics explores the moral relationships between humans and the natural world.

Materials Needed:

Materials needed for digital citizenship activities



- Digital tools for creating online video materials (eg Animoto, Adobe Spark)
- Smartphones, computers, tablets and video projector
- Collaboration platforms (eg Google Docs, Office).
- Fact-checking and digital literacy: - Lists of statements or news headlines

<https://journalift.org/mk>

<https://mim.org.mk>

- Research tools (eg, internet access, fact-checking websites) - Templates for creating source information.

https://en.wikipedia.org/wiki/List_of_fact-checking_websites



Instructions:

Step 1. Introducing the key concepts for digital citizenship

Debate on what key concepts include.

Key concepts include:

Digital access. Ensuring equal access to technology for all.

<https://www.linkedin.com/advice/1/what-strategies-can-you-use-ensure-equal-lc6rf>

<https://www.microsoft.com/en-us/digital-literacy>

Digital literacy. Developing skills for evaluating online information, protecting privacy and responsible content creation

Digital etiquette. Promoting Respect and Appropriate Behavior Online Privacy and Security. Managing personal data and ensuring safe online practices.

Rights and responsibilities. Balancing freedom of expression with responsibility in digital spaces.

A digital healthy relationship. Maintaining a healthy relationship with technology by managing screen time and mental well-being.

Finally, the groups will debate on the topic:

What are the best practices for respectful online communication?

How can I avoid misinformation and check sources before sharing content?



What steps can I take to reduce screen time and digital fatigue?

How can I protect my mental health from cyberbullying or toxic online behavior?

Conclusion: What are the best ways to behave online?

Step 2. - Key Principles of Environmental Ethics

Discussing about environmental ethics explores the moral relationships between humans and the natural world. Debate on the topic:

What are the ethical considerations when sharing another people's content?

How can I teach my children about safe and responsible internet use?

What should I do if I come across hate speech or harmful content online?

Skills learned: online privacy, responsible posting, digital reputation.

Key principles include:

Intrinsic value - The recognition that all elements of nature have inherent value, independent of their usefulness to humans.

Anthropocentrism vs. Ecocentrism - The debate over whether humans are custodians of nature or equal participants in the ecological community.

Sustainability - Advocating for the responsible use of resources to preserve ecosystems for future generations.

Ethical judgments - Making decisions that prioritize environmental integrity and minimize harm to the environment.

Human Values - Understanding how cultural and individual values shape environmental decisions, such as balancing development with conservation.



Assessment

Intrinsic value - The recognition that all elements of nature have inherent value, independent of their usefulness to humans.

Anthropocentrism vs. Ecocentrism - The debate over whether humans are custodians of nature or equal participants in the ecological community.



Sustainability. Advocacy for responsible use of resources to preserve ecosystems for future generations.

Ethical Decisions - Making decisions that prioritize environmental integrity and minimize harm to the environment.

Human Values - Understanding how cultural and individual values shape environmental decisions, such as balancing development with conservation.

Digital citizenship skills significantly influence attitudes towards sustainable development by fostering awareness, responsibility and action.

Key findings:

1. **Positive correlation.** Research shows a strong positive relationship between digital citizenship skills and attitudes towards sustainable development. These skills enhance individuals' ability to engage in ethical digital practices that align with sustainability goals, such as resource optimization and pollution control.

2. **The impact of training.** Digital citizenship skills training programs have been found to improve students' attitudes towards sustainable development. Those who had such training showed more positive attitudes compared to those who had no training.

3. **Action to strengthen.** Digital citizenship skills empower individuals to use technology for sustainable development initiatives, such as promoting environmental awareness, supporting eco-innovation, and collaborating in global sustainability efforts.

By integrating these skills into education, teachers and students can better contribute to the achievement of the Sustainable Development Goals.



60 mins

ACTIVITY 4: Good digital practices. Finding concrete examples of good practice on the Internet.

Objectives:

Inclusive group project
Conflict resolution
Self representation
Bullying prevention
Environmental teamwork

Description:

Good digital practices - The term good practices refers to the way we should behave in order to contribute to a free internet space and mutual respect, but also rules that websites and applications require us to respect. Many websites and web services impose rules that define the behaviour that should be respected on the Internet, but also what are the rights of users.

Concepts for good digital practices:

Inclusive group project
Conflict resolution
Self representation
Bullying prevention
Environmental teamwork

Materials Needed:

- Media tools - videos with environmental case studies (e.g. environmental award winners).
- Canva or PowerPoint slides and lecture notes on environmental principles.
- Community engagement materials - organizing community projects that address environmental issues.



Instructions:

This activity will involve around 40 participants, divided into smaller groups

Step 1. - Inclusive Group Project

Roles: Participants with different perspectives.

- Scenario: Work together on a group project, ensuring everyone contributes and feels included in the activity.

Objective: Practice empathy, active listening and respectful communication.

Step 2. - Conflict resolution

Roles: Participants involved in misunderstanding or conflict.

Scenario: Role play to solve the problem through respectful dialogue and compromise.

Objective: Develop conflict resolution skills and empathy.

Step 3. - Bullying prevention

Roles - bystander, victim and perpetrator.

Scenario - Scenarios where bystanders support victims and criticize inappropriate behavior.

Goal: Promote empathy and positive bystander behavior.

Step 4. - Environmental teamwork

Roles - Community members with different perspectives on environmental issues.

Scenario - Collaborate to solve an environmental problem in the community.

Purpose: Encouraging teamwork and environmental awareness.

After completing the activity, each group will debate the following questions:

- Digital literacy and critical thinking
- How can you tell if an online source is trustworthy?
- What should you do if you see information online that seems biased or false?
- Why is it important to think before you share or repost something?
- Online safety and privacy
- What personal information should you never share online?



- How can you create a strong password and why is it important?
- What should you do if someone you don't know contacts you online?
- Cyberbullying and respectful communication
- What is cyberbullying and how can you respond if you see it happening?
- How can you disagree with someone online respectfully?
- Why is tone important in digital communication (emails, comments, messages)?
- Ethical use of technology
- Is it okay to use AI tools (like ChatGPT) for schoolwork? When is it useful and when is it not?
- Should you report someone if you see them hacking or cheating online? Why or why not?
- How can technology be used to have a positive impact in your community?

Step 5. – Conclusions for good digital practices - The term good practices also refer to the way we should behave in order to contribute to the internet space of freedom and mutual respect, but also rules that internet pages and applications require us to respect. Indeed, many websites and web services impose rules that define the behavior to be respected as well as the rights of users. <https://masit.org.mk>, <https://talmil.org.mk>

Examining ethical use of digital tech in environmental education, covering digital citizenship and environmental justice topics. Ethical use of digital technology in environmental education, the intersection of digital technology, environmental education, digital citizenship, and environmental justice presents opportunities and challenges.

- Digital Tools in Environmental Education

Empowering Educators: Digital tools like apps, geospatial technologies, and virtual reality (VR) can enhance environmental awareness and sustainability education. For example, VR creates immersive experiences that improve environmental citizenship by fostering emotional connections to ecological issues.

Sustainability Awareness: Digital platforms enable interdisciplinary teaching methods aligned with Sustainable Development Goals (SDGs), nurturing eco-literacy among students.

Challenges: Despite their benefits, digital tools can exacerbate inequalities due to the digital divide, leaving marginalized communities with limited access to these resources.



- Digital Citizenship and Environmental Justice

Digital Literacy for Justice: Digital citizenship education emphasizes critical thinking and ethical use of technology to address global challenges like climate change.

Addressing Inequities: Many communities most affected by climate change lack access to reliable digital resources. Bridging this gap is essential for inclusive environmental justice.

Ethical Concerns: The production and disposal of digital technologies have significant environmental impacts, raising questions about sustainable digitalization.

Here are some important questions about good digital practices that can help teachers and students stay safe, productive, and responsible online:

Security & Privacy

How can I create strong, unique passwords for all my accounts?
What are the benefits of using a password manager?
How does two-factor authentication (2FA) improve security?
What should I do if I suspect a phishing attack?
Why is it important to regularly update software and apps?
How can I recognize and avoid malware or ransomware attacks?
What privacy settings should I check on social media platforms?
Is using public Wi-Fi safe, and how can I protect myself if I must use it?

Data Management & Backup

How often should I back up my important files?
What is the best cloud storage and local backup solutions?
How can I securely delete sensitive data from my devices?
What is encryption, and how can it protect my files and communications?

Online Etiquette & Digital Wellness

What are some best practices for respectful online communication?
How can I avoid misinformation and verify sources before sharing content?
What steps can I take to reduce screen time and digital fatigue?
How can I protect my mental health from cyberbullying or toxic online behavior?

Productivity & Organization

What tools can help me manage my digital tasks efficiently?
How can I organize my emails and reduce inbox clutter?
What are some techniques to minimize digital distractions while working?

How can I maintain a good balance between digital and offline activities?



Responsible Digital Citizenship

What are the ethical considerations when sharing someone else's content?

How can I teach children about safe and responsible internet use?

What should I do if I encounter hate speech or harmful content online?

How can I reduce my digital carbon footprint?

Key Recommendations

1. Integrate Digital Rights with Environmental Goals: Foster collaboration between digital rights and climate justice movements to address shared challenges like misinformation and surveillance of activists.

2. Promote Inclusive Access: Develop policies ensuring equitable access to digital tools for underserved communities, enabling them to participate in environmental education and advocacy.

3. Sustainable EdTech Development: Encourage environmentally conscious design and use of educational technologies to minimize their ecological footprint while maximizing learning outcomes. By combining ethical digital practices with a focus on environmental justice, educators can create transformative learning experiences that empower participants as global citizens and stewards of the planet.



Assessment

Digital citizenship

1. Positive Online Behavior - Participants must decide how to respond respectfully or report a problem, to maintain a positive digital environment, empathy and constructive communication.

2. Ethical use of technology - Participants use artificial intelligence to complete homework. Class discussions could explore academic integrity and the consequences of dishonesty, where AI is used inappropriately, how to balance the benefits of AI with personal responsibility.

3. Digital Literacy - Participants are educated how to verify online news information, to distinguish between real information and misinformation, fact or fiction to research and verify information online.



Environmental ethics

1. Sustainability Awareness - The environmental impact of their daily habits, such as waste generation or energy use, and propose active changes.

2. Outdoor Education: More frequent visits to local and national parks, in order to study ecosystems and the importance of biodiversity conservation. Developing plans for environmental protection in direct connection with nature.

3. Ethical responsibility: Participants increasingly debate whether industries should prioritize profits over environmental sustainability and create persuasive presentations advocating ethical environmental practices, integrating research into real-world examples.



60 mins

Module 5 Technology Integration in Field-Based Learning



Objective:

- Introduce the integration of digital tools in field-based learning environments.
- Equip participants with the skills needed to apply digital tools effectively in outdoor and field activities.
- Foster the practical application of eco-technology principles in real-world contexts.
- Encourage collaboration, critical thinking, and innovation through the use of technology.
- Ensure inclusivity and accessibility when integrating digital tools into field-based learning.

Learning Outcomes:

- Understand the role of digital tools in enhancing field-based learning.
- Identify and select appropriate digital tools for specific field activities.
- Create lesson plans that effectively integrate digital tools with outdoor learning.
- Use tools such as mobile apps, mapping software, and data collection devices for field learning.
- Assess the impact of technology on student engagement and learning outcomes.
- Adapt digital tools to meet diverse student needs in outdoor settings.



3 Hours

Key Concepts: Field-Based Learning, Digital Tools, Practical Applications, Eco-Technology, Accessibility, Inclusivity

Theoretical Component

Field-based learning offers a powerful educational approach that bridges the gap between theoretical classroom instruction and the practical realities of the outside world by placing students directly in the context of their studies. This hands-on, experiential method allows learners to interact with their environment, fostering a deeper connection to the material and



enhancing their ability to apply knowledge in real-life scenarios. For instance, a biology class studying ecosystems can conduct fieldwork in a nearby forest or wetland, observing species diversity and ecological relationships firsthand. Similarly, geography students can explore urban planning by analyzing city layouts and infrastructure. By situating learning within real-world contexts, students not only gain a more tangible understanding of the concepts but also develop critical thinking and problem-solving skills that are often difficult to cultivate in traditional classroom settings.

The integration of technology amplifies the benefits of field-based learning by equipping students and educators with advanced tools to collect, analyze, and visualize data in real time. Mobile mapping platforms, such as GIS (Geographic Information Systems) applications, allow learners to create and interpret detailed spatial data. Augmented reality (AR) apps further enhance engagement by overlaying digital information onto the physical world, helping students visualize historical changes in landscapes, geological processes, or even the migration patterns of animals. These technological tools not only make the learning experience more dynamic and interactive but also help break down complex concepts into more manageable and understandable components.

Teachers are pivotal in ensuring the successful integration of these technologies into field-based learning. Effective planning is essential to align the tools with students' age, skill levels, and the educational objectives of the lesson. For younger students, user-friendly and intuitive platforms may be necessary, while older or more advanced learners might benefit from more sophisticated software and tools. Educators must also provide appropriate training and support to ensure students can use these technologies effectively, enabling them to focus on learning rather than struggling with the technical aspects of the tools.

Inclusivity and ethical considerations are critical when implementing technology in field-based learning environments. Accessibility is a key concern—educators must ensure that the tools and activities are usable by all students, including those with disabilities or limited access to personal devices. Additionally, data privacy and ethical considerations around the collection and use of information must be addressed to ensure that learning activities adhere to responsible practices.

By combining immersive, hands-on experiences with the strategic use of technology, field-based learning can transform education. It empowers students to engage actively with their surroundings, enhances their understanding of theoretical concepts, and prepares them for real-world challenges, all while fostering a sense of responsibility and ethical awareness.

Module Structure

Topic 1: Introduction to Field-Based Learning and Digital Tools

Topic 2: Tools for Enhancing Field-Based Learning

Topic 3: Monitoring and Evaluating Field-Based Learning Outcomes with Technology

Topic 4: Accessibility and Ethical Use of Technology in Field-Based Learning

ACTIVITY 1: Discovering Digital Tools for Field-Based Learning



Objective:

- Introduce participants to digital tools that support field-based learning.



Description:

Participants will explore a variety of digital tools that enhance field-based learning, including GPS applications, interactive mapping platforms, and specialized environmental apps. These tools will allow participants to engage in a wide range of outdoor educational activities, such as biodiversity studies, habitat assessments, and environmental mapping. Through hands-on exploration of these tools, participants will gain practical insights into how digital technology can enhance real-world data collection, improve observational skills, and facilitate more meaningful connections with the natural environment.



Materials Needed:

- [Presentation Slides](#)
- Laptops, tablets, or smartphones
- Discussions prompts:
 - Could you elaborate on your prior experience with outdoor learning?
 - How can digital tools enhance student engagement in field-based learning?
 - What challenges might educators face when integrating digital tools into field activities?



Instructions:

1. **Introduction:**
 - a. Explain the importance of digital tools in field-based learning.
 - b. Provide an overview of the different types of digital tools available.
2. **Demonstration:**
 - a. Show how to use each tool through live demonstrations.
 - b. Highlight key features and benefits of each tool.
3. **Hands-on Exploration:**
 - a. Each participant tests one tool.
 - b. Encourage them to experiment with different functions.
4. **Group Discussion:**
 - a. Have participants discuss their experiences using the tools.
 - b. Address any challenges or questions that arise.



Assessment

- Gather participant feedback on tool usability and potential classroom applications.
- Reflection
 - How do digital tools enhance outdoor learning?
 - How can digital tools facilitate collaboration among students in field-based projects?
 - What could be potential risks using digital tools in class?
 - How can educators ensure that technology use does not overshadow hands-on experiential learning?



60 mins

ACTIVITY 2: Developing Technology-Enhanced Field Lesson



Objective:

- Guide participants in creating one lesson each integrating technology for outdoor learning.



Description:

Participants will collaborate in small groups to design a comprehensive lesson incorporating one or more digital tools to enhance the learning experience. Throughout this process, they will identify clear learning objectives, carefully select appropriate technological tools, and outline structured implementation steps to ensure the lesson is both engaging and effective. Additionally, they will consider factors such as student engagement, accessibility, and assessment methods to create a well-rounded, technology-driven field lesson that fosters interactive and immersive learning experiences.



Materials Needed:

- [Lesson Plan Template](#)
- [Sample Lesson Plan](#)
- Laptops or tablets



Instructions:

1. **Introduction to Lesson Planning:**
 - a. Discuss the essential components of a lesson plan.
 - b. Provide examples of effective technology-enhanced field lessons.
2. **Brainstorming Session:**
 - a. In small groups, participants brainstorm lesson ideas that integrate digital tools.
 - b. Encourage creativity and cross-disciplinary applications.
3. **Lesson Plan Development:**
 - a. Each group drafts a lesson plan using the provided template.
 - b. Each group outlines key learning objectives, activities, and assessment methods.
4. **Presentation and Feedback:**
 - a. Groups present their lesson plans to the class.
 - b. Peers provide constructive feedback on clarity, feasibility, and engagement.
5. **Final Adjustments and Reflection:**
 - a. Allow groups to refine their lesson plan based on feedback.
 - b. Discuss challenges and potential improvements.



Assessment

- Peer review on creativity and practicality of the plans.
- Reflection:
 - How does technology enhance your lesson's objectives?
 - What factors should be considered when selecting digital tools for different student groups?
 - What challenges might arise in implementation?
 - How can educators measure the success of a lesson that incorporates digital tools?



60 mins

ACTIVITY 3: Using Technology to Monitor Field-Based Learning



Objective:

- Teach participants how to use digital tools to monitor and evaluate student learning during field activities.



Description:

Participants will explore a range of data collection applications, such as Survey123 and KoboToolbox, along with various visualization platforms to effectively assess student progress and engagement in real time. They will gain hands-on experience in configuring these tools to collect, organize, and analyze data efficiently, allowing for dynamic tracking of learning outcomes. Additionally, participants will design and simulate comprehensive monitoring frameworks tailored for field activities, ensuring they align with educational objectives.



Materials Needed:

- Data Collection Apps
- Sample Data Sheets (Download Sheets)
- Laptops or tablets



Instructions:

1. **Introduction to Monitoring Tools:**
 - a. Explain the importance of monitoring student learning in field-based activities.
 - b. Introduce data collection tools and their role in tracking progress.
2. **Demonstration:**
 - a. Show how to set up and use apps like Survey123 and KoboToolbox for data collection.
 - b. Explain how to customize data fields for different types of environmental data.
3. **Practice Session:**
 - a. Participants will conduct a mock field activity and collect sample data.
 - b. They will document their findings using the provided apps.
4. **Data Analysis:**
 - a. Guide participants in organizing and analyzing the collected data.
 - b. Demonstrate how to use visualization tools to interpret trends.
5. **Group Discussion:**
 - a. Participants will share insights from their monitoring experience.
 - b. Discuss ways to incorporate these tools in real classroom settings.
6. **Final Reflection:**
 - a. Summarize key takeaways and discuss best practices for monitoring field-based learning.
 - b. Provide additional resources for continued exploration.



Assessment

- Reflection on the effectiveness of the tools for monitoring learning.
- Group presentations on their monitoring frameworks.



30 mins

ACTIVITY 4: Creating Virtual Field Trips



Objective:

- Teach participants how to create virtual field trips as an alternative to physical field activities.



Description:

Participants will utilize a variety of digital tools, including Google Expeditions and ThingLink, to design immersive and interactive virtual field trips that enhance student engagement and learning. They will explore how to create dynamic, visually rich experiences that bring real-world locations into the classroom, allowing learners to explore remote or otherwise inaccessible sites. Additionally, they will consider pedagogical strategies to ensure that virtual field trips align with learning objectives, promote critical thinking, and foster active student participation. Through this process, they will gain a deeper understanding of how digital tools can be leveraged to create compelling and educational virtual experiences.



Materials Needed:

- Virtual Field Trip Tools
- Sample Virtual Tour
- Laptops or tablets



Instructions:

1. **Introduction to Virtual Field Trips:**
 - a. Explain the purpose and benefits of virtual field trips.
 - b. Provide examples of successful virtual field experiences.
2. **Tool Demonstration:**
 - a. Show how to navigate and use features of Google Earth, Google Expeditions, and ThingLink.
 - b. Explain how to integrate multimedia elements such as images, videos, and interactive questions.
3. **Hands-on Activity:**
 - a. Participants will brainstorm topics for their virtual field trips.
 - b. Using the provided tools, participants will create a short virtual tour.
4. **Group Presentations:**
 - a. Each group will present their virtual tour to the class.
 - b. Peers will provide constructive feedback on engagement and interactivity.
5. **Final Reflection:**
 - a. Discuss how virtual field trips can complement traditional field-based learning.
 - b. Address any challenges or technical limitations.
 - c. Provide additional resources for further exploration.



Assessment

- Peer feedback on the interactivity and creativity of the virtual tours.
- Reflection questions:
 - How could virtual field trips complement physical field activities?
 - What are the key differences between physical and virtual field trips in terms of learning outcomes?
 - What challenges might educators face when implementing virtual field trips, and how can they be mitigated?



30 mins

Module 6 Inclusive Practices for Diverse Learners



Objectives:

- Apply Universal Design for Learning (UDL) principles to support diverse learners.
- Develop eco-literacy activities that are accessible and engaging for diverse learners.
- Develop eco-literacy activities that leverage technology to engage and support diverse learners inclusively.
- Empower teaching staff to integrate assistive technologies into lesson plans, addressing individual learning needs and creating inclusive learning environments.
- Equip educators with practical tools by designing a Universal Design for Learning (UDL) toolkit that integrates assistive technologies for inclusive eco-literacy education.

Learning Outcomes:

- Universal Design for Learning (UDL) principles to support diverse learners applied by teachers.
- Principles identified to support diverse learners, through an inclusion learning plan.
- Participants will leave with a designed eco-literacy activity and peer-reviewed feedback.
- Participants will design a lesson plan that incorporates assistive technologies to support diverse learners.
- Collaborative and reflective practices in diverse classrooms (gifted students and special needs students, ethnic groups, national minorities) fostered.
- Teaching methods to ensure inclusivity and accessibility evaluated and adapted.



3 Hours

Key Concepts: Digital Eco-Leadership, Inclusion and Accessibility, Universal Design for Learning (UDL), Culturally Responsive Teaching, Assistive Technologies, Empathy and Equity in Digital Spaces

Theoretical Component

Creating a future for us all
(Sir Ken Robinson, *Imagine If...*)

How can we create a future that belongs to all of us?

We are living in a time when it's more important than ever to recognize that nature is not beneath us — it's something we must live in harmony with. At the same time, we are immersed in a technological revolution, constantly connected through the internet. Despite these rapid changes, we often continue our lives without significantly altering the world around us.

Yet, our actions are deeply connected to Earth's geospheres — with the anthroposphere, the human-made environment, being a geosphere in itself. Everyone has a role to play. The education we provide to students becomes a lasting investment — an added value — only if each of us takes responsibility and commits to making a difference.

Imagination, Inclusion, and Education for a Sustainable Future

Sir Ken Robinson often observed that what separates us from the rest of life on Earth is our power of imagination: *"the ability to recall things that are not present to our senses."* It is imagination that allows us to create the world in which we live, rather than merely exist within it. It also gives us the power to recreate it — in new contexts and with different people.

As we learn, we must embrace cognitive diversity. We need teams composed of students who are as diverse as possible, and who think differently from one another. As Matthew Syed states in *Rebel Ideas: The Power of Diverse Thinking*, diversity in thought is key to innovation and problem-solving.

Sustainability, a polyhedral concept, can be understood within the framework of the Sustainable Development Goals (SDGs). As a key concept in education, it has undergone a meaningful transformation in recent years. Traditionally, teachers have aimed to create a better planet for their students. But perhaps the focus should shift: maybe it would be better *"to teach in order to have better students for a good planet (Earth)"* — students of all kinds: typical learners, those with special needs, members of ethnic groups and national minorities, and gifted students.



Digital technologies can support the inclusion of diverse student groups in education in several ways, including by enhancing the accessibility of educational content and increasing personalization. The module *Inclusive Practices for Diverse Learners* provides educators with practical strategies and tools for creating inclusive learning environments. It emphasizes the principles of Universal Design for Learning (UDL), the integration of assistive technologies, and methods for fostering eco-literacy in inclusive classrooms.

Teachers participating in this training course will develop the skills needed to design activities that accommodate varied learning needs, promoting equity and engagement for all students. The course is built to be dynamic, interactive, and creative — developing essential 21st-century competencies in young people such as critical thinking, creativity, communication, teamwork, and entrepreneurial spirit.

A critical-reflexive analysis of one's own lifestyle is essential, as it supports the adoption of healthier and more sustainable living. In the context of the knowledge society, the school of tomorrow is shaped by progressive transformations that ensure continuity in change. It carries the mark of democratization by adapting the curriculum to local specificities and maintaining an integrated, multidimensional approach. The broad spectrum of “new educations” allows the school to remain open and responsive to the challenges of the contemporary world.

Beginning with the concept of sustainable development — defined as *"a new path of development that supports human progress for the entire planet and for a long time to come"* — this curricular approach aligns with the SDGs and their targets as set out in the *Agenda 2030* document. This agenda emphasizes the need to *"ensure that all those attending an educational institution acquire the knowledge and skills necessary to promote sustainable development, including, inter alia, through education for sustainable development and sustainable lifestyles (...)."*

In accordance with UNESCO's recommendations, *"education for sustainable development is an integral element of quality education and a key enabling factor for all other sustainable development goals."* It also emphasizes that such education *"needs an action-oriented, transformative pedagogy that supports self-directed learning, participation and collaboration, problem orientation, inter- and transdisciplinarity, and the connection between formal and informal learning. Only such pedagogical approaches make it possible to develop the key competencies necessary to promote sustainable development"* (*Education for the Sustainable Development Goals: Learning Objectives*, UNESCO, 2017).

To align effectively with the SDGs and to follow the principle of *"leave no one behind"*, we must consider the inclusion of learners facing difficulties — students from low-income backgrounds, those with disabilities, immigrants, refugees, and others at risk of marginalization. It is important to reflect: Are the planned activities accessible to all? Are there barriers that might prevent some students from fully participating?



Teaching digital eco-literacy requires the application of UDL principles to support diverse learners and inclusive methods. With the help of technology, teachers can adapt digital resources to meet the needs of a varied student body. Furthermore, examples and applications should reflect diverse cultural and environmental contexts to ensure that every student feels included and represented.

As stated in the *Salamanca Declaration (1994)*:
"Inclusive schools must recognize and respond to the different needs of learners, taking into account the existence of different learning styles and different paces, and ensuring quality education for all through appropriate curricula, organizational arrangements, teaching strategies, use of resources, and partnerships with the communities of which they are part."

Module Structure

Topic 1: Exploring Universal Design for Learning (UDL)

Topic 2: Designing Inclusive Eco-Literacy Curricular and Extracurricular Activities Using Technology to Promote Environmental Awareness and Sustainability

Topic 3: The Role of Teaching Staff in Building and Developing Inclusive Learning Environments

Topic 4: Building Inclusive Learning Environments with Assistive Technologies

Topic 5: Creating a Technology-Enhanced UDL Toolkit for Eco-Literacy

ACTIVITY 1: Exploring Universal Design for Learning (UDL)

Objective:

Apply the core principles of (Universal Design for Learning) UDL to implement them in lesson planning

Duration: 60 minutes

Description:

School inclusion — a concept that goes beyond integration — can be defined as a set of measures designed to expand the mission and role of mainstream schools, enabling them to effectively address a wide diversity of learners. Inclusion means that education must adapt to the needs of children, so that all students can learn together, regardless of the difficulties they may face.

Education should be centered on meeting the needs of the child — not the other way around. Inclusion requires deep, systemic changes. These changes are grounded in the belief that methodological and organizational adaptations, made in response to the learning challenges students face, will ultimately benefit the development and growth of all children.

Universal Design for Learning (UDL) seeks to create truly inclusive educational environments. It aims to eliminate learning barriers by providing multiple means of engagement, representation, and expression, allowing all students — regardless of ability, learning style, or background — to thrive and succeed.

Materials Needed:

Smartboard

Video projector

Laptops or tablets

Access to internet resources for additional exploration.

Instructions: **Step-by-Step Instructions**



1. *Icebreaking*: Ask the teachers to write the word **eco-literacy** in the air, first using the index, then using the nose, and finally using the elbow (5 minutes).
2. *Brainstorming*: Ask the teachers, for 5 minutes, to write the first three words they have in mind when they hear the topic *Universal Design for Learning* using www.mentimeter.com. The emerging word cloud created will engage participants and highlight key terms.
3. *Interactive Video Viewing* (15 minutes)
Play the TEDx **Universal Design for Learning - A Paradigm for Maximum Inclusion** | **Terence Brady**, <https://youtu.be/MRZWjCaXtQo?feature=shared/> (15 minutes)/ [Why We Need Universal Design](#) | [Michael Nesmith](#) | TEDxBoulder (10 minutes)/ [Empowering Universal Design for Learning](#) | [Vivian Tzu-I Chiang, Ph.D.](#) | TEDxValparaisoUniversity/ [Building Universal Design Every Day](#) | [Dana Battaglia, Ph.D.](#) | TEDxFarmingdale.
Encourage the teachers to note down UDL principles and examples during the video.
4. *Post-Viewing Reflection*
As a post-viewing activity, ask the participants to list the principles of UDL they identified using www.slido.com (5 minutes). Show the input on-screen to reinforce learning.
5. *Small Group Discussion on UDL and Eco-Literacy and Technology* (20 minutes)
Divide the participants into small groups of 3–5. Discuss and brainstorm, within each group, practical ways to apply UDL principles in inclusive eco-literacy education using technology. Use a collaboration tool www.padlet.com to organize their ideas.
(The facilitator will provide guiding questions, such as: “How can eco-literacy activities be made accessible to all learners using technology?”)
6. *Group Presentations and Feedback* (10 minutes)
Each group will present their key findings to the whole room in a concise 2-minute pitch. Time for questions, constructive feedback, and building on each other's ideas is needed.
7. *Conclusion and Next Steps* (5 minutes)
The facilitator will summarize the key insights from the discussions and emphasize the importance of UDL in fostering inclusivity. Additional resources (like UDL guidelines [UDL](#), [OIP](#) or eco-literacy materials) to support further exploration. The participants reflect on one actionable change they can make in their own teaching practice using UDL.



Self-Assessment:

Can I apply UDL principles effectively for both gifted and special needs students?



60 mins

ACTIVITY 2: Designing Inclusive Eco-Literacy Curricular and Extracurricular Activities Using Technology to Promote Environmental Awareness and Sustainability



Objective:

Develop eco-literacy activities that leverage technology to engage and support diverse learners inclusively.



Description:

Participants gain practical experience with assistive technologies and identify specific tools for their classrooms, catering to both gifted and special needs students. This workshop empowers educators to design inclusive eco-literacy education activities using technology to promote environmental awareness and sustainability. Participants collaborate to create curricular or extracurricular activities following Universal Design for Learning principles. By integrating innovative tech tools, they address diverse learner needs and accessibility challenges. Group presentations and feedback sessions foster the refinement of ideas, ensuring practical and inclusive solutions. The session concludes with reflections and actionable takeaways for implementation.



Materials Needed:

- Presentation or handout on eco-literacy and technology integration.
- Digital activity design [template](#).
- Access to online tools (e.g., [Kahoot!](#), [Google Forms](#)).
- Examples of tech-based eco-literacy activities.



Instructions:

1. *Introduction: Eco-Literacy and Technology Integration (10 minutes)*

The facilitator will begin with a concise presentation or discussion on **eco-literacy education**, emphasizing:

- Its role in promoting environmental awareness and sustainability.
- Potential barriers for diverse learners, such as accessibility challenges or varying levels of technological literacy.
- Examples of technologies (e.g., virtual reality, apps, interactive simulations) that can enhance eco-literacy and engagement.



The facilitator will highlight how curricular and extracurricular activities can complement each other in fostering deeper learning.

2. Collaborative Activity Design (20 minutes)

The participants will be divided into **small groups** (3–5 members).

Task: Groups will brainstorm and design **curricular or extracurricular eco-literacy activities** that integrate technology and adhere to **Universal Design for Learning (UDL)** principles.

Provide these design **guidelines**:

- **Engagement:** Incorporate technology to capture interest (e.g., *using digital storytelling, virtual field trips*).
- **Representation:** Ensure information is available in multiple formats (e.g., *videos, infographics, interactive quizzes*).
- **Expression:** Allow participants to demonstrate understanding in diverse ways, such as creating digital content or organizing eco-awareness campaigns.

The participants will receive a [design template](#) including:

- Activity title
- Type: Curricular or extracurricular
- Objectives
- [Digital tools/Technology tools/platforms used](#)
- Steps for implementation
- Accessibility and inclusivity features

3. Presentations and Feedback (20 minutes)

Each group will present their activity concept in a **2-minute pitch**.

It will be facilitated a feedback session where peers and the facilitator offer constructive input.

[Evaluation](#) rubric, created using <https://create.piktochart.com/>, with criteria such as:

- Creativity and alignment with the objective.
- Effective use of technology to enhance eco-literacy.
- Inclusivity and accessibility.

4. Wrap-Up (10 minutes)

The Facilitator will summarize the key ideas presented, emphasizing how technology can promote environmental awareness and sustainability inclusively.



Assessment

Participants will individually complete a short formative assessment via tools like **Kahoot!** or **Google Forms**, addressing questions such as:

- “How does technology enable inclusivity in eco-literacy education?”
- “What was the most innovative idea you learned today?”
- “What challenges might arise in implementing these activities, and how can they be addressed?”

The participants are encouraged to share one actionable change they plan to implement in their own teaching.



60 min

ACTIVITY 3: The Role of Teaching Staff in Building and Developing Inclusive Learning Environments

Objective:

Empower teaching staff to integrate assistive technologies into lesson plans, addressing individual learning needs and creating inclusive learning environments.

Description:

This workshop focuses on empowering educators to build inclusive learning environments by integrating assistive technologies into lesson plans. Participants learn about eco-literacy and assistive tools, addressing diverse learning needs. Through group activities, they design adaptable lesson plans with clear inclusivity strategies. Peer feedback ensures refinement and practical implementation of ideas. The session concludes with reflection and actionable insights for future teaching practices.

Materials Needed:

- Presentation on inclusive environments and assistive technologies.
- Digital lesson plan design templates.
- Examples of assistive technology tools.
- Online collaboration tools (e.g., Padlet).
- Feedback rubrics for peer review.

Instructions:

1. Introduction: The Role of Teaching Staff in Inclusion (10 minutes)

The facilitator will begin with an **overview presentation or discussion** highlighting the following:

- The importance of inclusive learning environments in promoting equity and accessibility.
- The pivotal role teaching staff play in recognizing and addressing individual learning needs.
- Examples of assistive technologies, such as text-to-speech tools, screen readers, interactive whiteboards, and augmented reality. (*Facilitator Tip: Share short success stories or case studies to inspire participants.*)



2. Group Activity: Identifying Challenges and Solutions (10 minutes)

The participants will be divided into **small groups**.

Task: Identify challenges faced by diverse learners (e.g., students with visual, hearing, or mobility impairments; those with neurodiverse needs) and propose how specific assistive technologies can address these barriers. We will use an online collaboration tool like Padlet for groups to share their ideas visually.

3. Lesson Plan Design (20 minutes)

Participants will work individually or in pairs to **design a lesson plan** for their subject area, integrating assistive technologies to accommodate diverse learning needs. Provide these **guidelines**:

- Clearly define the lesson's **objectives**.
- Select at least one **assistive technology tool** to incorporate (e.g., dictation apps, immersive readers, digital collaboration platforms).
- Plan **adaptations** to ensure accessibility for all learners.
- [Distribute a template](#) with fields for:
 - Lesson objectives
 - Target student needs
 - Technology/tool selected
 - Step-by-step lesson structure
 - Inclusivity features

4. Peer Review and Feedback (15 minutes)

- Participants will share their lesson plan with a partner or small group for feedback.
- Use a simple **feedback rubric** to guide discussion, including questions like:
 - Is the assistive technology well-integrated into the lesson?
 - Does the plan address specific learning needs effectively?
 - Are inclusivity and accessibility prioritized?

5. Wrap-Up and Reflection (5 minutes)

Facilitate a **whole-group discussion** summarizing the session's insights. Highlight the collective role of teaching staff in fostering inclusivity through creativity and resourcefulness.



Assessment

Participants will complete a brief digital form on www.slido.com to answer:

- “What assistive technology will you start using in your lessons?”
- “What’s one thing you learned about creating inclusive environments today?”
- Share additional resources on assistive technologies and inclusive practices to encourage further exploration.



60 mins

ACTIVITY 4: Creating a Technology-Enhanced UDL Toolkit for Eco-Literacy



Objective:

Equip educators with practical tools by designing a Universal Design for Learning (UDL) toolkit that integrates assistive technologies for inclusive eco-literacy education.



Description:

This activity encourages collaboration, creativity, and real-world application while directly addressing the module's goal. This activity helps educators design a Universal Design for Learning (UDL) toolkit that integrates assistive technologies for inclusive eco-literacy education. Participants brainstorm tools and strategies for engagement, representation, and expression, customizing a practical toolkit for diverse learners. Groups share their toolkits, fostering collaboration and creativity. The session concludes with reflections and a consolidated resource for implementation.



Materials Needed:

- Presentation slides or handouts on UDL principles and assistive technologies.
- Brainstorming templates or digital collaboration tools.
- Platforms for creating and sharing toolkits (e.g., Canva).



Instructions:

1. *Introduction and Explanation (10 minutes)*
 - Begin with a brief presentation or discussion explaining a UDL Toolkit:
 - Define its purpose: A collection of tools and strategies that support inclusive teaching in eco-literacy education.
 - Provide examples: Assistive technologies (e.g., immersive readers, voice-to-text apps, AR/VR tools) and UDL-aligned strategies like flexible assessments or multimodal content delivery.
 - Share how this toolkit can be applied to both curricular and extracurricular eco-literacy activities.
2. *Group Brainstorming (15 minutes)*
 - Divide participants into **small groups**.
 - Task: Brainstorm tools, resources, and strategies to include in a UDL Toolkit specifically for eco-literacy education. Assign focus areas to each group, such as:



- Tools for **engagement** (e.g., gamified learning platforms).
- Tools for **representation** (e.g., digital storytelling apps).
- Tools for **expression** (e.g., collaborative project platforms).
(Optional: Provide examples or templates for structuring their brainstorming output.)

3. Toolkit Design and Customization (20 minutes)

- Groups organize their ideas into a **coherent toolkit** for eco-literacy education.
- Encourage groups to focus on:
 - Specific technologies and how to use them.
 - Steps to adapt activities for diverse learners.
 - Practical examples of activities using these tools.
- Teams can use digital tools (e.g., Canva, Google Slides) to create a polished toolkit outline or poster.

4. Showcase and Sharing (10 minutes)

- Each group briefly presents their toolkit, focusing on one highlight tool or strategy.
- Allow time for a quick Q&A or comments from peers, fostering collaborative learning.



Assessment

Ask participants to reflect on how they can adapt and implement the toolkit in their own teaching.

Provide a link or file to consolidate all group toolkits into a shared resource for future use.



60 mins