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In-DigiT

Booklet of 50 EU Sustainable IT Best Practices for Education & Training

Co-funded by the European Union

In-DigiT

This Booklet has been produced within the framework of the Erasmus Plus project **In-Digit - Inclusive and responsible Digitalisation in Training** which aims to guide people to use digital tools compatible with the objectives of sustainable development and to show that there are more responsible alternatives to current digital practices.

Partners

My Training Box, France

Formethic, France

BRGD SCS, Belgium

Euphoria Net Srl, Italy

Epimorfotiki Kilkis sm LLC, Greece

Coaching Bulgaria Association, Bulgaria

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Explanation

CONTENT CREATION & PEDAGOGY

Practices that improve how digital learning content is designed, delivered and made engaging for diverse learners.

ACCESSIBILITY & INCLUSION

Practices that guarantee equal access to digital tools and learning for people with disabilities or facing barriers.

GREEN IT & ENVIRONMENTAL IMPACT

Practices that minimise the ecological footprint of activities and trainings through sustainable technologies and behaviours.

ORGANISATIONAL PRACTICES & MANAGEMENT

Practices that help organisations adopt efficient and responsible policies in their digital operations.

COMMUNITY ENGAGEMENT & SKILLS DEVELOPMENT

Practices that strengthen digital literacy, empower local communities, and foster lifelong skills development.

To make the guide more practical, each best practice has also been assigned to one of the five categories, colour-coded throughout the booklet. These categories are designed to help readers quickly identify the practices most relevant to their context and professional needs.

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COMMUNITY ENGAGEMENT & SKILLS DEVELOPMENT

Introduction

The digital transition is an unprecedented opportunity for education and training, but it also raises major challenges in terms of inclusiveness, environmental impact and ethics. The **IN-DigiT project**, funded under the Erasmus+ programme, is part of a responsible transformation approach aimed at making digital technology accessible, ethical and sustainable for those involved in education and training.

This Booklet of good practices is the fruit of collaborative work involving partners from France, Bulgaria, Italy, Greece and Belgium. Together, we have **identified and documented best practices to help trainers, IT managers and education professionals adopt digital solutions** that are more respectful of the principles of digital sobriety, inclusion and social responsibility.

Through a collection of **50 best practices**, this Booklet highlights methods and tools for reconciling educational innovation and social commitment. By sharing these recommendations based on research and experiments conducted across Europe, we hope to inspire and guide training organisations toward a more frugal, equitable and protective digital environment.

Best Practices

We have structured the good practice around the **7 qualities** of digital technology defined by the FING (Digital Issues - Issues and Prospects Paper). These principles - **inclusive**, **frugal**, **democratic**, **protective**, **enabling**, **fair**, and **innovative** - enable us to approach digital issues from an ethical and responsible perspective, in order to propose concrete actions that are adapted to today's challenges.

Inclusive: Ensures accessibility for all learners, including those with disabilities.

Frugal: Minimizes resource usage, promotes cost-effectiveness.

Democratic: Fosters shared values, citizenship, or community engagement.

Protective: Safeguards rights, privacy, and digital security.

Enabling: Empowers stakeholders to act, innovate, or create responsibly.

Fair: Ensures equal opportunity and fair treatment in digital training.

Innovative: Introduces new approaches or technologies in responsible digitalization.

Accessible Digital Content Creation

Pedagogical Engineers, Trainers, Adult Learners, including individuals with disabilities

Epimorfotiki Kilkis in Greece uses the free “e-me” platform to develop educational materials accessible to learners with disabilities, including visual, auditory, and other impairments.
This practice incorporates tools like text-to-speech, captions, and alternative text to **create a diverse and inclusive learning environment**. Regular educator training ensures the application of consistent accessibility standards.

This practice is easily adaptable across educational institutions, as it uses a free platform and standardized accessibility tools. It can be implemented in various contexts to meet the needs of diverse learner groups.

Objective

To create digital content that is accessible to all learners, promoting inclusivity and equal learning opportunities.

Practical Application

Tools & Resources Needed:

- “e-me” platform.
- Assistive tools such as text-to-speech software, video captioning tools, and image description tools.

Steps to implement it:

1. **Platform Training**: Train educators on the functionalities of the “e-me” platform, focusing on accessibility tools.
2. **Creating Accessible Materials**: Develop resources that include captions, alternative text, and adaptable formats.
3. **Building a Repository**: Create a shared database of accessible content for use and adaptation by educators.
4. **Feedback Mechanisms**: Establish feedback loops with learners to refine and improve accessible materials.

Recommendations for implementation:

- Standardize accessibility guidelines across all content.
- Encourage collaboration among educators to share best practices and accessible materials.
- Provide regular training to keep up with technological advancements in assistive tools.

Challenges:

- Initial time investment to train educators and develop content.
- Resistance to adopting new tools and practices among some educators.

Evaluation

- Feedback from learners, especially those with disabilities.
- Increased engagement and participation rates among learners with diverse needs.

Results

- Enhanced inclusivity and accessibility in educational materials.
- Increased confidence and independence among learners with disabilities.

Link to Resources:

Access the e-me4all platform, a digital environment designed for collaborative educational activities, at:
e-me4all

Community-Driven Open Educational Resources (OER)

IT Managers, Pedagogical engineers, Trainers, Adult Learners, Community Leaders

WikiEducator is an international online community supporting the collaborative development of OER. Founded in 2006 by the Open Education Resource Foundation (OERF) in New Zealand, the platform enables educators and trainers to contribute, adapt, and **freely share educational resources**.

WikiEducator empowers participants to acquire skills in creating OER through its initiatives like Learning4Content (L4C). It also promotes democratic access to knowledge and fair treatment in education.

This practice can be implemented by educational institutions and organizations worldwide to promote collaborative resource development and equal access to quality educational materials

Objective

To foster community engagement and shared values by collaboratively creating and disseminating open educational resources that ensure equal opportunities in digital education.

Practical Application

Tools & Resources Needed:

- Access to WikiEducator or similar OER platforms.
- Digital tools for creating and editing content.
- Training programs like Learning4Content (L4C) for OER development.

Steps to Implement:

1. **Stakeholder engagement**: Encourage trainers, pedagogical engineers, and IT managers to join the platform and collaborate.
2. **Training on OER development**: Provide workshops or online training on creating and sharing educational resources using the platform.
3. **Collaborative content creation**: Facilitate the co-creation of resources addressing specific educational needs.
4. **Peer review**: Establish a system for reviewing and improving content to ensure quality and inclusivity.
5. **Dissemination**: Share resources through the platform and engage with the global OER community for feedback and collaboration.

Recommendations for implementation:

- Align resource creation with organizational or community goals.
- Recognize contributors to motivate participation.
- Monitor and evaluate the impact of shared resources on educational outcomes.

Challenges:

- Sustaining contributor engagement over time.
- Ensuring content quality and relevance across diverse contributions.

Evaluation

- Number of contributors and resources developed.
- Feedback on the quality and accessibility of shared resources.
- Increased collaboration and knowledge-sharing among stakeholders.

Results

- Creation of a diverse library of high-quality educational resources.
- Empowerment of educators and learners to contribute to and benefit from a global knowledge-sharing community.
- Strengthened collaboration and shared values across educational contexts.

Link to Resources:

- Explore **WikiEducator**, a collaborative platform for educators and learners to develop open educational resources.
- Visit the **OER Foundation** website, an organization dedicated to supporting open education and free learning initiatives.

Eco-Friendly Digital Learning Modules

IT Managers, Pedagogical Engineers, Trainers

This practice involves creating online learning materials that **educate trainers and learners about eco-friendly digital practices**, such as optimizing energy use, reducing e-waste, and adopting green digital habits. These modules are designed to be interactive and accessible to a wide audience.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and is ideal for organizations or institutions involved in education or training programs.

Objective

To develop digital training modules that focus on teaching sustainable digital practices and reducing environmental impact.

Practical Application

Tools & Resources Needed:

- E-learning platforms (e.g., Moodle).
- Multimedia creation tools for videos, quizzes, and interactive content
- Subject matter experts on green digital practices.

Steps to Implement:

1. Identify key topics related to green digital practices, such as e-waste management, energy-efficient computing, and sustainable data usage.
2. Design modules using engaging multimedia tools (videos, animations, quizzes).
3. Host the modules on a digital learning platform for easy access.
4. Promote the courses to trainers, staff, and learners through internal communications.

Recommendations for implementation:

- Use gamification elements (e.g., badges, leaderboards) to engage learners.
- Provide certifications to motivate participation and completion.

Challenges:

- Initial costs and time required for developing high-quality content.
- Ensuring modules remain up-to-date with technological advancements.

Evaluation

- Number of participants completing the modules.
- Learner feedback on module quality and relevance.

Results

- Increased knowledge and adoption of sustainable digital practices among learners.
- Improved energy efficiency and reduced digital waste across the organization.

MGTB - First Open-Access Digital Education Platform Developed Using an Eco-design Approach

Pedagogical Engineers

MGTB is a platform that develops and distributes digital training courses on sustainable development. From its inception, the founders reflected on the platform's environmental impact and strategies to reduce it. The platform is aligned with the GR491 standards, the reference guide (Handbook of Sustainable Design Services) for the responsible design of digital services, to **minimize its impact while remaining inclusive and accessible to all**.

The platform achieved a score of 48.47% in the first GR491 audit in 2022. Afterward, the platform was eco-designed, which involves sustainable IT criteria from coding, UI, and UX to hosting the website. On the other hand, the size and accessibility of the content of the digital materials that fill the platform have also been analysed and accessibility has been improved, for example by reducing the size of videos and always adding subtitles to videos.

18 months after the first audit, the second audit was conducted (based on 104 criteria of GR491) and the score rose to 87,92%.

Objective

Reducing the environmental impact of the learning management system.

Practical Application

Tools & Resources Needed:

- Measure the state of the practices (Audit).
- Take actions.
- Measure the improvement.

Steps to Implement:

- An external audit of our digital practices based on GR491, the reference guide to responsible design of digital services.

Recommendations for implementation:

- Prepare a table on how to maintain the platform's sustainable IT score and update this table periodically.

Challenges:

- Sustainable choices may differ from mainstream commonly used tools and software.
- Since products that offer sustainable solutions are not usually in the hands of large companies with large budgets, service speeds may be low in case of problems and disruptions, or planned improvements may take time to be realised.

Evaluation

- Audit results.
- Video sizes uploaded to the platform.

Results

- The videos produced have gone from 120 MB to 50 MB on average. The aim is now to not to exceed 50 MB per video.

Link to Resources:

A digital learning platform, developed using an eco-design approach:
www.mygreentrainingbox.com

GREEN IT For VET PROVIDERS

Pedagogical Engineers, IT Managers, Trainers

An Erasmus+ project, "**GREEN IT For VET PROVIDERS (GIVE)**," conducted a pioneering comprehensive study (among European countries, mainly France, Portugal, and Belgium) on professional practices in the VET industry for digital learning. The project defined the lifecycle of a digital training course and evaluated its environmental impact.

The project goal is to **reduce the environmental impacts of digital learning by supporting green digital skills for VET providers**.

The project raised awareness within the VET sector about the environmental consequences of digitization and emphasized the importance of supporting educators with sustainable practices and green digital skills. A methodology, a **white paper on Green IT**, and a **digital training program** have been created for VET providers, focusing on the environmental impact of digital learning.

A study was conducted on professional practices in the VET industry regarding digital learning development and implementation. Subsequently, the development of green skills was supported through the white paper and a free-access digital training course.

The project's results, such as the white paper and digital training program, can be translated into other languages and adapted to different contexts. The digital training program can also be used as a tool to introduce the topic for discussion during a course.

Practical Application

Tools & Resources Needed:

- Access to White Paper: https://sustainable-digital-learning.com
- Access to Learning Platform for Digital Training Course: https://mygreentrainingbox.com

Steps to Implement:

1. **Train Stakeholders in Digital Training Course Creation**:
   Trainers, teachers, pedagogical engineers, and digital learning providers can read the white paper to understand the environmental impact of digital learning through scenarios. They can then take the training course on the LMS platform, My Green Training Box.
2. **Train Learners**:
   It is important to train learners, trainees, or students using this free content on responsible digital learning. Discussions about the topic can also be held to encourage deeper understanding.
3. **Assess Knowledge and Green Skills**:

- Use the self-knowledge assessment test on the LMS.
- Collect feedback from VET providers and learners to measure knowledge acquisition and skills development.

Recommendations for implementation:

- Follow the digital training course titled "Introduction to sustainable IT for digital education".

Challenges:

- As the solutions provided to VET providers are flexible and can be organized in a way that suits their specific needs, no significant challenges have been encountered so far.

Evaluation

- Outline any criteria or methods used to evaluate the effectiveness of this practice (e.g., feedback mechanisms, usage analytics, performance metrics).

Results

- Summarize the main outcomes, including any measurable improvements in accessibility, sustainability, and user engagement.

Link to Resources:

- Access to the white paper of Green IT for VET providers project: **https://sustainable-digital-learning.com**
- Access to learning platform for digital training course: **https://mygreentrainingbox.com**

The Project “Digi-Agro” to Train Farming Professionals in Sustainable Practices

Pedagogical Engineers

Digi-Agro is a French national project with a consortium of 7 partners to provide digital training courses in Integrated Crop Protection (ICP) to meet the environmental, societal and regulatory challenges facing the farming sector.
The digital courses are available on My Green Training Box, an innovative learning platform combined with serious game and motion design videos to train farming professionals in sustainable practices.
The project aimed to create 25 digital training courses, **with sustainable IT at the core of the project**.
The project receives an award “Winners of the 2024 Digital Learning Awards” in France in the category of “Jury’s favorites”.

The Digi-agro project partners are committed to responsible digital education.

All the project's digital content has been developed using a **responsible digital approach**:

- The **platform**: My Green Training Box is the 1st 100% eco-designed training platform. It has been developed in line with GR491 standards, the reference guide for the responsible design of digital services.

- **Hosting**: All the project's digital content is hosted by a supplier committed to reducing and optimising its energy consumption.
- **Educational Engineering**: all the project's digital content is produced using an eco-design approach that takes into account its accessibility and impact. The micro-learning format has been chosen for digital training courses. It is a learning method based on short modules which is available in videos, podcasts and text formats. The availability of content in multiple formats increases accessibility in many ways. In addition, colour contrasts were checked with an online tool and attention was paid to the appropriate colour selection in the creation of visual materials.

In micro-learning, video production will be the step that will have the greatest impact. Motion design videos were deliberately chosen, without any background video, which would have resulted in a doubling of the size of the videos.

Considering that the total number of videos produced for this project alone is more than 200, it is an important point that **the impact of digital technologies has been reduced by 50%**.

In addition, during the testing phase, dissemination of digital training courses wasn’t done by sending videos, but instead, integration codes of videos already available on Infomaniak servers were sent. In this way, large file transfers and content duplication were avoided.

Through communication of the project, the project's motto, 3U, “**Useful, Usable, Used**”, was born within the consortium but has spread beyond the 7 partners.

The project is available in French and in October 2024, **more than 350 learners/trainers participated to project testing phase and used the content.**

Objective

Digital training courses occupy a very large space in the digital world, demanding state-of-the-art equipment or high connectivity power.

Practical Application

1. **Define the scope** and align with responsible digital principals.
2. Conduct impact analysis (assessing the environmental footprint of the digital tools and platforms).
3. **Design the training framework responsibly** (avoiding unnecessary duplication, incorporating accessibility guidelines WCAG standards and data privacy).
4. **Choose sustainable and ethical digital learning platforms** and ensure responsible data use (sustainable hosting, providing low-bandwidth alternatives such as downloadable content and offline access).
5. **Develop content with responsible practices** (eco-friendly media: good quality, lower file sizes; inclusive design).
6. **Promote responsibly** – communicate when it is necessary and mention responsible digital practices.
7. **Report on impact** – report project results on social, environmental and educational impact.

Evaluation

- Accessibility of the digital learning platform.
- Accessibility of the digital training courses.
- Assessing the size of the digital materials.

Results

With sustainable IT in the core of the project, which allowed to the project receive an award “Winners of the 2024 Digital Learning Awards” in France in the category of “Coup de coeur” can be translated as “jury’s favorites”.

Link to Resources:

Digital Training Courses created in the framework of the Digi-Agro Project are available on the link below:
www.mygreentrainingbox.com

Use of Blended Learning in Adult Education Programs

Pedagogical Engineers, Trainers, Adult Learners

Blended learning combines in-person sessions with digital modules, using tools like video lessons, quizzes, and interactive webinars. This approach allows learners to engage with material at their own pace, while educators track progress through digital platforms.
Epimorfotiki Kilkis in Greece adopted this practice after participating in the Erasmus+ project Blended Teaching and Learning in VET Centres, which provided methodologies and tools for effective implementation.

This practice is highly adaptable and can be transferred to other educational contexts, as it leverages widely available digital tools and resources. It can suit a variety of learners, including those with limited time or geographical constraints. However, it is important to note that the successful implementation of this practice requires both learners and trainers to have access to digital equipment and an internet connection, as well as sufficient digital skills to use these resources effectively.

Objective

To integrate traditional face-to-face instruction with online learning, creating a flexible and adaptive educational experience that enhances learner engagement and supports lifelong learning.

Tools & Resources Needed:

- Learning Management System (LMS).
- Video conferencing tools.
- Interactive tools for engagement

Steps to Implement:

1. **Training Educators**: Conduct workshops to familiarize trainers with digital tools and methodologies.
2. **Designing Blended Courses**: Balance in-person and digital activities aligned with learning objectives.
3. **Orientation for Learners**: Guide participants on navigating the blended format and expectations.
4. **Fostering Engagement**: Use forums, quizzes, and webinars for interaction and active learning.
5. **Evaluating Learning**: Combine traditional and online assessments to measure outcomes.

Recommendations for implementation:

- Start with a pilot blended course before scaling up.
- Regularly collect feedback from educators and learners to refine methods.
- Provide continuous support for digital literacy to both trainers and learners.

Challenges:

- Resistance to adopting new digital tools among trainers.
- Initial investment in training and platform setup.
- Ensuring consistent engagement in digital components.

Evaluation

- Learner satisfaction surveys.
- Completion rates of blended courses.
- Usage analytics from the LMS to track engagement.

Results

- Increased flexibility for learners balancing work and studies.
- Improved digital literacy for both trainers and learners.
- Enhanced learner motivation and engagement.

Link to Resources:
Explore the intellectual outputs and resources developed by the project **Blended teaching and learning in VET schools**.

Use Responsible Colours on Printed Documents

Pedagogical Engineers, IT Managers and Purchases, Trainers, Trainer Center Staff

Opting for **responsible colors** is a very good way to limit the environmental impact of your printed documents. By creating an eco-designed color palette, the Climate Fresk NGO limits the amount of ink used to print all its documents while ensuring good readability for its printed communication.

Although an eco-designed color palette can differ for printed or digital media, most of the advice discussed in this practice can also be transferable to digital media.

Objective

Create an eco-responsible and readable color palette for printed documents.

Practical Application

Tools & Resources Needed:

- An online color palette generator tool (like “Adobe Color,” “Coolors,” or “Color Kit”).
- An online color contrast analyzer tool (like Adobe “Color Contrast Analyzer,” Coolors, or Color Kit “Color Contrast Checker” tools).

- The “Ecobranding CMYK Colors” palette from the Ecobranding CMYK Guide.

Steps to Implement:

1. Choose the 3 basic shades of your color palette from the “Ecobranding CMYK Colors” set:
- 1 background color (light)
- 1 text color (dark)
- 1 support color (intermediate)
2. From these 3 main shades, add complementary colors to create a range of 5 to 6 colors that blend harmoniously.
3. Check the accessibility of your colors by using a color contrast analyser tool and adjust your color palette, if necessary.

Recommendations for implementation:

- The only truly dark eco-designed color (to use as a background color) is 100% black.
- Don’t forget to update or create your graphic charter to maintain graphic coherence across all your documents.

Challenges:

- Although pastel colors use less ink when printing, an “all pastel” palette is a bad option for optimal readability.
- To conform to your visual identity, your color palette probably won't contain only eco-colors but will be a mix of eco-colors and branding colors.

Evaluation

- Number of printed pages before printer ink cartridge replacement.
- Drying and staining problems on printed pages.

Results

- Reduced ink consumption for color printing.
- Reduced paper consumption by using thinner paper.

Link to Resources:

- Climate Fresk NGO website: **https://climatefresk.org/world/**
- Ecobranding CMYK Guide (open source): **https://github.com/Ecobranding/Ecobranding-CMYK-Guide**

Understanding How to Work with Sources Efficiently

Pedagogical Engineers, Trainers, Learners

Working with sources is an important practice that you need as a trainer. It includes **knowing how to find relevant sources**, **assessing their authority and credibility**, and understanding how to integrate sources into your work with proper referencing.
Free online digital tools are available to help you work with sources and ensure the integrity of your documents.

Even though this practice is well-known in the academic writing field (it is promoted in research universities in France, e.g., SciencesPo, Université Toulouse - Jean Jaurès), it is easily transferable to the training field, especially during the engineering of training materials.

Objective

To be ethical, a published document must indicate its sources, and the reader must be able to verify these sources.

Practical Application

Tools & Resources Needed:

- Academic search engine (e.g., Google Scholar).
- Online Plagiarism Checker (e.g., QuillBot's Plagiarism Checker, Justdone’s Plagiarism Checker, or Grammarly’s Plagiarism Checker).

- Online Citation Generator (e.g., QuillBot Citation Generator, Scribbr Citation Generator, or Chegg Citation Machine).

Steps to Implement:

1. **Find relevant sources**: Look for relevant sources (e.g., websites, books, scientific publications, videos, photos, etc.), for example, by using an academic search engine, and record their references (e.g., by their title, URL, ISBN, or DOI).
2. **Integrate sources into your work**: Once you have found information that you want to include in your work, you can choose to quote, paraphrase, or summarize the source.
3. **Evaluate your document**: Check the integrity of your document, for example, by using an online Plagiarism Checker to detect plagiarism and other writing issues (e.g., typos, grammatical mistakes, and misplaced punctuation).
4. **Cite your sources adequately**: Use an online Citation Generator to generate your formatted references according to official academic standards (e.g., APA, MLA).

Recommendations for implementation:

- Keep a critical eye on the source you are about to use and check its credibility (i.e., author reputation, intended audience, objective perspective, conflict of interest, trusted references, etc.).
- Have your document reviewed by a peer to check its consistency.

Challenges:

- It can sometimes be difficult to identify fake information on internet content (even more so on social networks).
- Beware of your own cognitive biases while looking for sources (e.g., confirmation bias).

Evaluation

- Number of references cited in your documents.
- Number of issues detected by the Plagiarism Checkers.

Results

- Demonstrates the quality of your work or provides further directions to your learners.
- Ensures respect for copyrights and avoids any risk of plagiarism.

Link to Resources:

SciencesPo's Guidelines for citing sources and creating a bibliography:
https://www.sciencespo.fr/college/sites/sciencespo.fr.college/files/citer-sources-rediger-bibliographie-en.pdf

Adapting Digital Content and Tools to Visually Impaired Users by BG Assist

IT Managers, Trainers, Organisations working with or supporting people with visual impairments.

BG Assist in Bulgaria offers information campaigns, digital accessibility tools, and **solutions for visually impaired individuals**.
They collaborate with various partners to raise awareness about accessibility and assistive technologies and provide tailored solutions to meet the needs of visually impaired users.

This practice can be adapted to other countries or regions, particularly where there is a need to raise awareness about assistive technology for visually impaired individuals.

Objective

To improve accessibility for visually impaired individuals through information campaigns and providing specialized hardware and software solutions.

Practical Application

Tools & Resources Needed: Assistive technologies (e.g., screen readers, audio tools), partnerships with educational institutions, businesses and government agencies, and online and offline materials for information campaigns.

Practical Application

Steps to implement:

1. **Conduct a needs assessment** to identify gaps in accessibility for visually impaired individuals.
2. **Partner** with organisations and service providers to develop and distribute accessible tools and resources.
3. **Run awareness campaigns** to promote available technologies and solutions.
4. **Offer training sessions** and consultations to help organisations implement accessible practices.

Recommendations for implementation:

- Engage with local communities and stakeholders to understand specific needs.
- Offer regular training and updates on new assistive technologies.

Challenges:

- Ensuring the information reaches all potential users, especially those in remote areas.
- Overcoming resistance to using new technology among both service providers and users.

Evaluation

- Number of users accessing assistive technology solutions.
- Feedback from visually impaired users on the effectiveness of the tools.
- Reach and effectiveness of information campaigns.

Results

- Successful dissemination of information about assistive technologies, with positive feedback from users, especially about tools like the **Be My Eyes** app, which connects blind and low-vision users with volunteers and companies that offer assistance.
- Increased awareness of digital accessibility needs in the wider community.

Link to Resources:

https://bgassist.com/

Digital Accessibility of People with Disabilities for Inclusive Habitats – Fondazione Asphi Onlus

Trainers, Trainers Center Staff, Organizations, etc.

Italian **Fondazione Asphi**'s main goal is to empower individuals with disabilities by improving their digital skills, promoting independence, and inclusion in education, employment, and society.
They specialize in designing and delivering inclusive digital education and training programs that **integrate assistive adaptive technologies, and personalized learning paths** tailored to the needs of individuals with disabilities, equipping participants with the tools and skills needed to engage in digital environments. They use assistive tools, such as screen readers and speech-to-text software, to facilitate digital inclusion. The organization collaborates with schools, businesses, and local authorities to create holistic solutions for long-term inclusion.

This practice can be adapted to other contexts: organizations globally can replicate the model by partnering with local disability support services and educational institutions. For example, training centers can replicate Fondazione Asphi's model by partnering with assistive technology providers to:

- acquire tools like screen readers or adaptive devices;
- developing inclusive training programs tailored to the needs of learners with disabilities;
- establishing collaborations with local businesses to connect participants with employment opportunities;
- offering continuous mentorship to ensure sustained impact.

Objective

Develop inclusive training programs tailored to the needs of learners with disabilities.

Practical Application

- First, conduct individual assessments to understand the specific needs, digital skill levels, and challenges faced by each participant. This includes physical, sensory, and cognitive abilities.
- Engage caregivers, educators, and employers to identify practical applications of digital skills in daily life or workplace settings.
- Develop customized training sessions focused on digital literacy, tailored for various disabilities, such as:
  – For visually impaired learners: training on screen readers (e.g., JAWS, NVDA) or Braille displays.
  – For individuals with motor impairments: use of adaptive input devices like eye-tracking systems or switch controls.
  – For cognitive disabilities: simplified interfaces, step-by-step tutorials, and gamified learning techniques.
- Provide hands-on training in assistive tools, such as screen magnifiers or voice commands.
- Partner with companies to offer participants internships or job placements where they can apply their digital skills in the workplace.
- Collaborate with schools to integrate assistive technologies into classrooms, supporting inclusive education.
- Offer ongoing support and mentorship to ensure sustainable skill development and adaptation. And offer follow-up sessions to address evolving needs and provide refresher training on updated technologies.

Evaluation

- Participant feedback to assess satisfaction with training programs and perceived usefulness of acquired skills.
- Skill improvement metrics, using pre- and post-training assessments to measure participants' proficiency with digital tools and technologies.
- Employment and education outcomes, tracking the number of participants who secure jobs or enroll in educational programs after completing training.
- Assistive technology utilization, monitoring how effectively participants integrate assistive technologies into their daily lives.

Results

- Improve digital skills, gaining confidence and competence in using essential digital tools and assistive technologies.
- Enhanced employability
- Inclusive education: schools integrating Fondazione Asphi's programs report greater engagement and participation among students with disabilities.
- Social empowerment: participants experience greater independence and social inclusion, reducing barriers to accessing online services and digital opportunities

Link to Resources:
https://asphi.it/

Distributing Refurbished Digital Devices to Vulnerable Populations by A Smart World

IT Managers, Trainers, Individuals in vulnerable situations (elderly, refugees, homeless, etc.), businesses, and NGOs working on digital inclusion

A Smart World in Belgium collects donated digital devices, refurbishes them, and distributes them to people in need (e.g., elderly, refugees, homeless). The organisation also raises awareness about **digital exclusion** and provides digital training.

This practice can be easily adapted to other regions with similar digital inclusion needs. It is scalable, particularly in areas with large vulnerable populations.

Objective

To bridge the digital divide by providing digital devices to vulnerable populations and raising awareness about digital exclusion.

Practical Application

Tools & Resources Needed: Refurbished devices, donations (from businesses and individuals), volunteers for device collection and refurbishment and digital training materials.

Steps to Implement:

1. Establish partnerships with businesses to collect donated devices.
2. Set up a workshop for device refurbishment.
3. Create an outreach program to identify and support individuals who would benefit from digital inclusion (elderly, refugees, etc.).
4. Organise digital literacy training for recipients.

Recommendations for implementation:

- Partner with local NGOs to help identify those in need.
- Ensure sustainability by establishing ongoing donation and refurbishment channels.

Challenges:

- Securing enough donated devices and funding.
- Ensuring the refurbished devices meet the needs of all users, especially for those with limited digital literacy.

Evaluation

- Number of devices donated and distributed.
- User feedback on the effectiveness of the devices and digital training.
- Increase in digital literacy among recipients.

Results

- 652 devices were donated and distributed to 7 partner associations.
- Raised awareness about digital exclusion, especially in vulnerable communities.
- Supported individuals in accessing digital tools, improving their social inclusion and skills.

Link to Resources: https://www.be-impact.org/

Low-Bandwidth Digital Solutions

IT Managers, Trainers, Learners in remote or low-connectivity areas

Since 2017, **Apopsi** in Greece has been using advanced image and video compression technologies to enable **online training with minimal bandwidth requirements**.
Techniques like WebP and H.265/HEVC allow learners with internet speeds as low as 64Kbps to participate in video and audio sessions. This practice supports digital inclusion by addressing the connectivity challenges of remote areas.

This approach can be applied in various educational and professional contexts to ensure equitable access to digital content for users with limited connectivity.

Objective

To ensure accessibility to online training programs for participants in low-connectivity areas by adopting efficient media compression techniques.

Practical Application

Tools & Resources Needed:

- Compression tools for images.
- Video encoding software supporting H.265/HEVC or AV1 codecs.
- Streaming platforms capable of adaptive bitrate streaming.

Steps to Implement:

1. **Adopt modern compression formats**: Replace traditional media formats with WebP/AVIF for images and H.265/AV1 for videos.
2. **Optimize streaming settings**: Configure adaptive bitrate streaming to dynamically adjust quality based on available bandwidth.
3. **Standardize compression policies**: Implement guidelines for all media to follow sustainable compression standards.
4. **Test connectivity**: Conduct trials in low-bandwidth environments to ensure functionality and user experience.
5. **Provide training**: Train staff and instructors to create and deliver optimized content effectively.

Recommendations for implementation:

- Monitor user feedback to continuously improve media compression and streaming practices.
- Use analytics to track bandwidth savings and identify areas for further optimization.
- Collaborate with IT specialists to maintain a balance between quality and file size.

Challenges:

- Ensuring compatibility of new compression formats with older devices.
- Initial setup and standardization of compression policies across the organization.

Evaluation

- Bandwidth usage analytics for online training sessions.
- Learner feedback on accessibility and quality of the training materials.

Results

- Significantly reduced bandwidth requirements for online sessions.
- Expanded access to training for participants in remote or underserved areas.
- Increased satisfaction among learners due to improved accessibility.

Link to Resources:

Visit the website of **Apopsi,** a center for vocational training and consulting services.

Providing an Accessible Online Dictionary for Reading Difficulties by Plena Inclusión Madrid

IT Managers, Pedagogical Engineers, Trainers, Individuals with intellectual disabilities, language disorders, elderly people, and those with reading comprehension difficulties.

The **"Diccionario Fácil"** (Easy Dictionary) is an open online dictionary that **simplifies definitions** using easy-to-read guidelines, developed by Plena Inclusión Madrid in Spain.
Definitions include examples and images to help with understanding. It is continuously updated and validated by individuals with intellectual disabilities to ensure clarity.

This practice is highly adaptable for use in other regions or languages, especially for organisations aiming to improve language accessibility for people with intellectual disabilities or language barriers.

Objective

To provide an accessible online dictionary for people with intellectual disabilities and reading comprehension issues, enabling them to understand everyday language.

Practical Application

Tools & Resources Needed: Easy-to-read content guidelines, intranet for internal processes (adaptation, revision, and validation), and a user-friendly, accessible website (deemed digitally accessible for those with visual, hearing, cognitive or other impairments).

Steps to Implement:

1. Collect terms and expressions to be included in the dictionary.
2. Apply easy-to-read guidelines to write definitions.
3. Validate definitions with people who have intellectual disabilities.
4. Design an accessible website to display the dictionary.
5. Promote the dictionary through community outreach and partnerships.

Recommendations for implementation:

- Work with professionals (linguists, writers, and experts in easy-to-read texts) alongside people with intellectual disabilities for validation.
- Ensure a clear and sustainable plan for ongoing updates to the dictionary.

Challenges:

- Ensuring the website is fully accessible for all users.
- Managing the complexity of working with multiple stakeholders for validation.
- Securing long-term funding for continuous development and updates.

Evaluation

- User feedback from individuals with intellectual disabilities and other target groups.
- Usage metrics (number of sessions, page views, etc.).
- Long-term impact on improving understanding of language for target users.

Results

- Over 6.6 million sessions and 25.4 million page views since launch.
- Positive feedback from users, demonstrating significant improvement in understanding everyday language.
- Recognition as a finalist for international inclusion and accessibility awards.

Link to Resources:
https://diccionariofacil.org/

Providing Youth with the Necessary Tools to Access Digital Education by Digital for Youth

IT Managers, Trainers, Young people (ages 6-25), NGOs, and community organisations supporting digital inclusion.

Digital for Youth in Belgium collects donated laptops from businesses, refurbishes them, and distributes them to young people in need. This initiative aims to provide youth with the tools necessary to **access digital education**, improve their digital skills, enhance their future opportunities, and improve their employability.

This practice is easily adaptable to other regions, particularly those where young people face barriers to digital access due to socioeconomic challenges.

Objective

To bridge the digital divide by providing young people with access to digital devices and promoting digital skills development.

Practical Application

Tools & Resources Needed: Donated laptops or digital devices, refurbishment tools and software, and partnerships with businesses and NGOs for donations and distribution.

Steps to Implement:

1. Establish partnerships with businesses for device donations.
2. Set up a refurbishment process to prepare laptops for reuse.
3. Develop a distribution system to reach young people in need, focusing on community organisations and educational institutions.
4. Promote digital skills development through training or access to learning resources.

Recommendations for implementation:

- Engage local schools, universities, and NGOs in the process of identifying youth who would benefit from receiving a device.
- Create awareness campaigns to encourage more businesses to donate unused or obsolete laptops.

Challenges:

- Ensuring the continuous availability of donated laptops.
- Managing the refurbishment process to ensure all devices meet the necessary technical requirements.
- Overcoming logistical challenges related to distribution.

Evaluation

- Number of laptops donated, refurbished, and distributed
- Feedback from recipients on the impact of the devices and digital skills improvement.
- Long-term engagement of youth with digital education and skills.

Results

- Distributed 25,000 refurbished laptops to young people in need since 2019
- Increased digital inclusion for youth, enabling them to participate in online education and job opportunities.
- Raised awareness about digital exclusion and the need for accessible technology.

Link to Resources:
https://digitalforyouth.be/

Solar Powered Educational Learning Library

Trainers, Trainers Center Staff, Organizations, etc.

The **SolarSPELL Initiative** empowers learners globally by providing localized educational information and training to build skills in offline environments.
It is a **solar-powered offline digital library that serves as a sustainable e-learning solution for areas with limited internet and power infrastructure**.
SolarSPELL combines solar energy with a Raspberry Pi-powered digital library to deliver educational content without requiring consistent access to electricity or the internet (a Raspberry Pi-powered device uses a Raspberry Pi – a small, affordable computer – as its main brain to perform tasks like controlling electronics, running software, or connecting to the internet).

By working with in-field partners like Peace Corps, UNHCR, and government ministries, SolarSPELL's holistic approach pairs each digital library with locally-based trainers for ongoing training and support. Using a train-the-trainer model, networks of locals and in-field partners are trained to leverage SolarSPELL digital libraries in their communities and build information literacy and digital skills among library users.

Objective

Promote sustainable and inclusive learning in remote or under-resourced training locations.

Practical Application

To implement this practice:

1. **Set up a solar-powered system**:
   - Acquire SolarSPELL kits or assemble similar systems using a solar panel, a low-power Raspberry Pi server, and a battery. These devices act as a digital library hosting curated educational resources.
   - Ensure the system is portable and can operate in low-energy environments, ideal for remote or under-resourced training locations.
2. **Curate and upload content:**
   - Develop or adapt e-learning materials suitable for adult education programs. These can include digital textbooks, videos, manuals, or technical guides. Content is stored on the Raspberry Pi server, accessible through a local Wi-Fi network.
3. **Train educators and learners**:
   - Conduct training sessions for instructors on how to use the SolarSPELL interface and customize the content. Similarly, educate learners on accessing resources via connected devices such as smartphones, tablets, or laptops.
4. **Promote accessibility and inclusivity**:
   - Implement SolarSPELL in areas with limited or no internet connectivity, ensuring inclusivity for underserved communities.
5. **Monitor and expand the system**:
   - Collect feedback on content usability and adjust resources to meet learner needs. Expand the system by incorporating new materials or connecting multiple SolarSPELL units to cover broader geographical areas.

Evaluation

- User feedback mechanisms to gather qualitative insights on usability, content relevance, and user satisfaction.
- Usage analytics, monitoring server usage patterns, including the number of connections and frequency of access to specific resources.
- Performance metrics, tracking the number of active SolarSPELL units deployed in training centers; measuring the number of learners served and the hours of educational content delivered; and evaluating device uptime and energy consumption to ensure reliability and sustainability.

Results

- Expanded access to digital education for over 500,000 users in remote or underserved areas, including regions in the Pacific Islands and Sub-Saharan Africa.
- Enable education in areas without reliable internet or electricity, making training centers more inclusive.
- Operate entirely on solar energy, reducing reliance on traditional energy sources and eliminating carbon emissions associated with digital infrastructure.

Link to Resources:
https://solarspell.org/

BTP CFA (Building and Civil Engineering Apprentice Training Center) OCCITANIE

Interview with Pascal BOTTIER & Kevin LAMARE
Director of General Resources and Quality &
Quality/CSR Coordinator

Could you introduce the BTP CFA Occitanie?

BTP CFA Occitanie is an apprentice training center for the construction industry. We offer more than 70 work-linked courses, covering all construction trades, and catering to different education levels.
The BTP CFA has 5 campuses in Occitanie: Toulouse, Montpellier, Perpignan, Lézignan, and Méjannes-lès-Alès. Each year, we train 3,500 apprentices and employ 350 staff members.

Do you integrate Sustainable IT initiatives into your campuses?

Yes, BTP CFA Occitanie is proud to be the 1st CFA to be awarded the 'CSR Level Confirmed by AFNOR' label.
As part of this accreditation, we aim to implement initiatives in this area, such as:

- Raising awareness of Sustainable IT practices among our teams and apprentices.
- Reducing the environmental impact of our digital resources.

To date, most of our Sustainable IT initiatives have focused on purchasing reconditioned computers.

Why have you prioritised this action?

Our campuses and apprentices are all equipped with computers, making us a major consumer of IT equipment. We purchase an average of 400 computers a year, and we recognize that buying new IT equipment has one of the largest environmental impacts.
In response, we launched this initiative by purchasing 276 reconditioned computers this year, including 82 old computers from our own stock, which we had reconditioned.

How did you go about it? / How did you proceed?

We partnered with Ecodair, a social enterprise that provides employment opportunities for people with disabilities and individuals needing societal reintegration.

Have you been able to measure the impact of this solution?

So far, the only measurable impact has been economic savings.
This solution has allowed us to save 30% to 40% on costs.
We plan to carry out a 12-month assessment soon to evaluate the broader impact of this initiative. For now, we are satisfied with the results and intend to continue with this approach.
One of the decisive factors in our ongoing commitment will be the lifespan of the reconditioned equipment. Our goal is to ensure that the devices last for at least 3 years.

Carbon Footprint Calculators for Digital Actions

IT Managers, Trainers, Trainer Center Staff

Introduce tools and apps that **calculate the carbon footprint of digital activities**, such as sending emails, using cloud storage, or browsing online. Provide actionable insights on reducing digital emissions.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and is suitable for any organization aiming to raise awareness of the environmental impact of digitalization.

Objective

Educate users about the environmental impact of their digital activities and encourage more sustainable habits.

Practical Application

Tools & Resources Needed:

- Carbon footprint calculator apps.
- Training materials for users on interpreting and acting on results.
- Incentives for individuals or teams reducing their digital emissions.

Steps to Implement:

1. Select a reliable and user-friendly carbon footprint calculator.
2. Integrate the tool into daily workflows or make it accessible to employees.
3. Educate users on the environmental impact of various digital practices.
4. Reward individuals or teams who achieve significant reductions.

Recommendations for implementation:

- Include carbon footprint tracking in digital literacy training.
- Regularly share organization-wide progress to motivate users.

Challenges:

- Difficulty in precisely calculating emissions from all digital activities.
- Ensuring employees use the tool consistently.

Evaluation

- Number of employees actively using the calculator.
- Measured reduction in carbon emissions from tracked activities.

Results

- Reduction in digital carbon footprint.
- Increased awareness and responsibility among employees about digital sustainability.

Circular Economy IT Initiatives - Microgreens Magicgreens

Trainers, Pedagogical Engineers, Environmental Innovators

This practice, implemented in the second Experimental High School of Kilkis in Greece, **reuses old computer towers to create automated microgreen cultivation chambers**. These chambers are equipped with IoT components for efficient irrigation and climate control.
Developed by students, this initiative reduces e-waste and promotes eco-friendly urban agriculture, offering solutions for households and gourmet kitchens.
The Microwonders project was recognized as the European Student Company of the Year 2022.

This practice can be adapted to various contexts, including vocational schools, maker spaces, and community workshops. It inspires similar projects that utilize e-waste for innovative purposes.

Objective

To promote circular economy principles by repurposing e-waste into functional and sustainable devices, fostering environmental responsibility and technical innovation among trainees.

Practical Application

Tools & Resources Needed:

- Discarded computer towers and components.
- IoT devices (sensors, LED grow lights, microcontrollers).
- Safety equipment for handling electronics.
- Workshop space and tools for assembly.

Steps to Implement:

1. **Identify E-Waste**: Collect and evaluate old computer towers for repurposing.
2. **Technical Training**: Train students in disassembling electronics and using IoT tools.
3. **Redesign for Sustainability**: Equip towers with IoT components to optimize plant growth conditions.
4. **Testing & Deployment**: Collaborate with local businesses to test and refine the cultivation chambers.
5. **Educational Integration**: Incorporate circular economy and sustainability concepts into the curriculum.

Recommendations for implementation:

- Partner with local businesses and NGOs to source e-waste.
- Promote collaboration among students to foster innovation.
- Highlight sustainability benefits to engage stakeholders and the community.

Challenges:

- Ensuring safe handling of e-waste.
- Overcoming technical challenges with IoT integration.
- Maintaining engagement and motivation among participants.

Evaluation

- Reduction in e-waste through repurposing.
- Increased technical skills among students.
- Adoption of chambers by local businesses and households.

Results

- Successful creation of functional cultivation chambers.
- Recognition at the European level for innovation and sustainability.
- Increased awareness and application of circular economy principles.

Link to Resources:

Watch a video introduction to the practice, showcasing its key elements and implementation, at YouTube: **Introduction to the Practice.**

Collecting, Refurbishing and Reselling Old Digital Equipment for a Circular Economy by CF2B

IT Managers, Trainers, Companies interested in circular economy and digital sustainability

CF2B in Belgium collects old digital equipment, repairs and refurbishes it for reuse, and resells it to **encourage a circular economy**.
Their services also include maintenance of digital devices, to help companies reduce waste and promote sustainable practices, as well as digital skills training to improve the employability of workers at the end of their careers.

This practice is highly transferable to other organisations looking to integrate circular economy principles into their business models, particularly in the IT sector, as well as upskill workers in digital skills.

Objective

To promote digital sustainability by reusing and repairing technology to contribute to a circular economy, as well as digital inclusion by offering training in digital skills.

Practical Application

Tools & Resources Needed: Digital repair and refurbishment equipment, a webshop for selling refurbished devices, and partnerships with organisations for device donations and reselling.

Steps to Implement:

1. **Establish partnerships** with businesses and individuals for digital device donations.
2. **Set up** a repair and refurbishment workshop.
3. **Develop a sales channel** (e.g., online store) for refurbished equipment.
4. **Market** the environmental and economic benefits of refurbished devices.

Recommendations for implementation:

- Start small with a limited number of devices and grow gradually.
- Educate staff on repair techniques and sustainability practices.

Challenges:

- Ensuring a constant supply of devices for refurbishment.
- Managing the logistics of device collection, repair, and resale.
- Overcoming stigma around refurbished products.

Evaluation

- Number of devices refurbished and sold.
- Feedback from clients on the quality of refurbished products.
- Environmental impact assessment (e.g., reduction in e-waste).

Results

- CF2B has successfully diverted e-waste from landfills by refurbishing and reselling technology.
- Created a circular economy ecosystem by supporting companies and individuals with cost-effective refurbished devices.

Link to Resources: https://cf2d.be/

Data Center Sustainability by Equinix Green Data Centers

IT Managers

Equinix, a global data center company, is leader in data center sustainability, leading by example and taking steps to **minimize their carbon footprint** and **reduce their energy consumption**.
They design, build and operate data centers with high energy-efficiency standards and a long-term goal of using 100% clean and renewable energy for their global platform.
They use efficient cooling technologies and implement energy-saving measures across their global facilities, continuously looking for innovative ways to deploy energy-saving technologies and on-site generation solutions.

Objective

Minimize energy use and carbon emissions: Equinix's data centers set an industry-standard in sustainable digital infrastructure.

Practical Application

Following Equinix's model allows practioners to:

- **Assess current data center efficiency**, starting by evaluating the existing data center's Power Usage Effectiveness (PUE) to understand its energy consumption levels.

For facilities managed in-house, conduct a thorough audit of energy use across servers, cooling systems, and lighting. Compare current energy efficiency with industry standards, such as Equinix's approach to maintaining a PUE below 1.5.

- **Implement renewable energy sourcing**, transitioning to renewable energy sources for powering the data center. Collaborate with local green energy suppliers, as Equinix does, to secure wind or solar power. Evaluate potential on-site renewable installations, like solar panels, which could provide supplementary power.
- **Optimize cooling and ventilation systems**, introducing advanced cooling techniques to reduce the energy required for temperature management. Consider using air-side economizers (a component of a data center's cooling system that brings cold outside air into a data center to cool the equipment), liquid cooling, or free cooling where possible, as these systems are known for their energy efficiency. Equinix's use of energy-efficient cooling serves as a model for sustainable practices in data center management.
- **Virtualize and consolidate servers to reduce physical infrastructure needs**. Consolidating server loads and utilizing cloud-based solutions can also minimize energy consumption while maintaining performance. Equinix leverages virtualization to streamline its operations and improve energy efficiency.
- **Implement real-time monitoring** to maintain efficient power and cooling management. Use intelligent software that tracks power usage, generating insights that can help identify energy-saving opportunities.

Evaluation

- Usage of green data centers.
- Number of organisations transitioning to green data centers.

Results

- Build skills in energy management, renewable energy sourcing, server virtualization, and sustainable infrastructure design.
- Learn to implement environmentally conscious data center strategies that reduce operational costs and minimize carbon emissions.
- Gain a concrete understanding of how data centers can be managed sustainably, with practical steps that promote environmental responsibility, considering energy efficiency and sustainable choices as integral to IT operations.

Link to Resources:

https://www.equinix.com/data-centers/design/green-data-centers

Digital Carbon Footprint Measurement: the DIMPACT Platform

IT Managers, Trainers Center Staff, Organizations, etc.

DIMPACT is an innovative platform designed to provide organizations, including educational institutions, with a tool to **measure and reduce the carbon footprint of their digital activities**, enabling more sustainable digital practices.
Indeed, DIMPACT calculates the digital carbon footprint of online services such as websites, apps, and digital content delivery.
The tool provides detailed insights into the environmental impact of digital operations, helping organizations identify areas for improvement and implement energy-efficient solutions.

DIMPACT is highly adaptable and can be integrated into any organization or training center's sustainability strategy. Its insights are applicable across sectors, including education, where digital activities are increasingly prominent.

Objective

To measure and reduce the carbon footprint of digital activities.

Practical Application

Training centers and educational institutions can utilize the DIMPACT platform to measure and optimize the carbon footprint of their digital infrastructure and activities.

To implement it:

- **Register** on the DIMPACT platform and input the necessary details about the organization's digital infrastructure, including websites, apps, and digital services.
- **Provide data** on server locations, data transfer volumes, and energy usage patterns. For example, information on cloud hosting providers, traffic analytics, and media content delivery is essential.
- **Use the platform to measure the carbon footprint** generated by: hosting services (e.g., data centers powering websites and LMS), media streaming for educational videos and webinars, digital communication tools such as email and messaging platforms, app and website traffic.
- **Pinpoint activities** or systems with the largest carbon footprint, such as energy-intensive media delivery or inefficient hosting providers.
- **Reduce website and app data sizes** by optimizing images, using lightweight coding, and minimizing unnecessary features; use green hosting providers that use renewable energy.
- **Replace high-energy streaming** with downloadable resources and encourage asynchronous learning to reduce server load during peak times.
- **Educate staff** and learners on digital sustainability practices, such as limiting unnecessary video calls and managing data effectively.
- **Use DIMPACT to track progress** over time, evaluating the success of implemented changes. Establish achievable goals for reducing carbon emissions from digital activities, such as lowering the emissions associated with one gigabyte of data transfer.

Evaluation

- Carbon reduction metrics: measure reductions in CO_2 emissions after implementing optimizations.
- User engagement: track how staff and students adapt to sustainable practices.
- Cost savings: evaluate savings on energy and hosting costs as a result of efficient practices.

Results

- Improved sustainability: organizations report measurable reductions in carbon emissions from digital operations.
- Enhanced awareness: Staff and students gain a better understanding of how digital activities contribute to environmental impact.
- Efficient operations: streamlined digital systems reduce energy consumption and operational costs.

Link to Resources:
https://dimpact.org/about

Digital Carbon Footprint Monitoring

IT Managers, Sustainability Officers, Organizational decision-makers

Epimorfotiki Kilkis in Greece has implemented a comprehensive **system for tracking carbon emissions** across its digital infrastructure. This includes emissions from cloud services, on-premises infrastructure, and supply chain activities.
The system provides real-time data to optimize energy efficiency and reduce environmental impact. It supports the organization's commitment to sustainability over the past five years.

This practice can be implemented by organizations of all sizes seeking to integrate sustainability into their IT operations and decision-making processes.

Objective

To monitor, analyze, and reduce the organization’s digital carbon footprint. This can be achieved through actionable insights and optimized IT practices.

Practical Application

Tools & Resources Needed:

- Carbon tracking software integrated with organizational IT systems.
- Data analytics tools for emissions reporting and decision-making.
- Trained staff for monitoring and optimizing digital operations.

Steps to Implement:

1. **Set emissions reduction goals:** Establish measurable goals based on initial emissions data, targeting key areas like data centers or supply chains.
2. **Track emissions across scopes:** Capture Scope 1, Scope 2, and Scope 3 emissions, including commuting and remote work energy usage.
3. **Optimize cloud operations:** Use insights to schedule resource-heavy tasks during off-peak hours or periods of high renewable energy availability.
4. **Promote device efficiency:** Analyze device energy usage and implement policies for energy-saving modes and consolidating hardware.
5. **Continuous monitoring and reporting:** Regularly review progress using the tool's reporting features, adjusting strategies as needed.

Recommendations for implementation:

- Integrate carbon tracking with broader organizational sustainability goals.
- Use the insights to engage employees in sustainable practices.
- Partner with vendors who align with similar environmental objectives.

Challenges:

- Initial setup and integration with existing systems.
- Educating staff to interpret data and implement actionable steps.

Evaluation

- Reduction in organizational carbon emissions.
- Cost savings through optimized resource usage.
- Engagement levels of staff in sustainability practices.

Results

- Enhanced understanding of emissions sources and reduction strategies.
- Decreased environmental impact from digital operations.
- Improved organizational alignment with global sustainability goals.

E-Waste Recycling Programs

IT Managers, Trainers, Trainer Center Staff

Establish an **e-waste recycling program** where old or unused electronic devices like laptops, printers, and cables are collected and sent to certified recycling centers. Use digital tools to track recycling efforts and educate staff on proper disposal methods.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and it is easily adaptable for organizations with significant IT infrastructure or regular equipment upgrades.

Objective

Encourage responsible disposal and recycling of electronic waste to reduce environmental harm.

Practical Application

Tools & Resources Needed:

- Partnership with certified e-waste recyclers.
- Tracking software to monitor recycling progress.
- Awareness campaigns for proper e-waste disposal.

Steps to Implement:

1. Identify a reliable e-waste recycling partner.
2. Set up collection points for used electronics.
3. Use tracking software to measure the volume of e-waste recycled.
4. Educate employees about the importance of e-waste recycling through campaigns.

Recommendations for implementation:

- Schedule regular collection drives to maintain momentum.
- Incentivize participation with recognition or small rewards.

Challenges:

- Employees might be unaware of what qualifies as e-waste.
- Transportation and recycling costs in remote areas.

Evaluation

- Amount of e-waste collected and recycled.
- Awareness levels among employees about e-waste.

Results

- Recycling e-waste.
- Improved employee awareness of responsible electronic disposal.

Link to Resources:

https://www.sciencedirect.com/science/article/pii/S2949750723000135

Sustainable e-Learning Infrastructure Development

IT Managers, Trainers, Adult Learners

Epimorfotiki Kilkis in Greece utilizes a customized e-learning platform based on the open-source Moodle software, hosted on **environmentally responsible servers** provided by CretaForce. This infrastructure offers a reliable and cost-effective solution for delivering online training programs.
The platform is designed to accommodate diverse learner needs while minimizing environmental impact through optimized resource usage and server efficiency.

This practice can be easily transferred to other organizations by adopting open-source platforms like Moodle and collaborating with sustainable hosting providers.

Objective

To develop a sustainable, scalable, and efficient e-learning infrastructure that supports flexible and high-quality online education.

Practical Application

Tools & Resources Needed:

- An LMS platform.
- Hosting services with a focus on sustainability.
- IT staff for platform customization and maintenance.

Steps to Implement:

1. **Platform Selection and Setup**: Install MLS on servers provided by an environmentally responsible hosting provider.
2. **Customization and Integration**: Customize the platform to meet organizational needs, including branding, course structure, and user roles.
3. **Training for Users**: Provide training for educators and administrators on how to manage and use the platform effectively.
4. **Sustainability Optimization**: Regularly monitor and optimize server performance to reduce energy consumption and improve efficiency.
5. **Continuous Support**: Ensure ongoing technical support and updates to maintain platform security and functionality.

Recommendations for implementation:

- Select hosting providers with a commitment to renewable energy and low carbon footprints.
- Engage IT professionals to customize the platform based on specific educational requirements.
- Encourage collaboration among trainers and administrators to standardize usage practices.

Challenges:

- Initial costs for customization and setup.
- Ensuring consistent user engagement with the platform.
- Addressing technical challenges promptly to maintain platform reliability.

Evaluation

- Usage analytics to measure platform engagement.
- Feedback from educators and learners on platform functionality.
- Energy consumption metrics to assess sustainability performance.

Results

- A scalable and reliable e-learning infrastructure supporting diverse training needs.
- Increased user satisfaction due to the platform's adaptability and performance.
- Reduced environmental impact through sustainable hosting practices.

Link to Resources:
Access the e-learning platform of Epimorfotiki, offering a variety of educational materials and courses, at **Epimorfotiki e-Learning Platform.**

Sustainable Hosting Providers Certification by the Green Web Foundation

IT Managers, Trainers, Companies interested in eco-friendly digitalisation

Green Web Foundation is a non-profit organization working towards a fossil-free internet by 2030 and promoting a greener internet by certifying websites that use hosting powered by renewable energy. They maintain a global directory of **green hosting providers** and offer open-source tools to manage the environmental impact of digital services.

This initiative supports a shift towards eco-friendly digital infrastructure, enabling organizations and individuals to choose sustainable hosting providers and reduce their carbon footprint.

Objective

To speed up the transition to an internet running entirely on renewable energy.

Practical Application

The Green Web Foundation's model can raise awareness with website sustainability checks, educating learners and trainees on the environmental impact of digital infrastructure, especially data centers and hosting.

The Green Web Foundation provides tools to check if a website is hosted on a green server. Educators can use these tools to teach learners how digital activities impact the environment.
Moreover, learners can select a website or create one of their own and explore the steps needed to make it **carbon-neutral**.
They can research green hosting providers using the Green Web Foundation's directory, assess different options, and calculate the estimated environmental impact of switching to a renewable-powered provider. If possible, they could transition a real or fictional website to a green hosting solution, gaining practical experience with digital sustainability practices.

Tools & Resources Needed: APIs, online tools, and open datasets provided by the Green Web Foundation.

Steps to Implement:

1. Access the tools via the Green Web Foundation's website.
2. Use the datasets to assess your organisation's digital energy consumption.
3. Implement recommendations to transition to renewable energy sources.
4. Track progress with the Foundation's analytics tools.

Recommendations for implementation:

- Integrate the tools early in your sustainability strategy.
- Provide training for staff on using the datasets and interpreting analytics.

Challenges:

- Limited awareness of these tools among organisations.
- Requires initial technical expertise to utilise the APIs fully.

Evaluation

- Usage of the tools and datasets.
- Number of organisations transitioning to renewable energy.
- Feedback from user organisations.

Results

- Supported numerous organisations in auditing and improving their digital energy consumption.
- Promoted eco-friendly initiatives globally, contributing to sustainability goals.
- Gain practical experience in applying eco-friendly digital practices and learning how to make informed choices that contribute to environmental sustainability.

Link to Resources:

https://www.thegreenwebfoundation.org/about/

Using Solar Power to Run Websites by Low-tech Magazine

IT Managers, Trainers, Organisations focused on reducing environmental impact through digital solutions

Low-tech Magazine in Spain is a blog dedicated to publishing articles on energy-efficient and low-resource technologies.
It uses a minimalistic, **static website design powered by solar energy** to reduce digital infrastructure's environmental impact.

The practice can be adapted to other digital platforms or media projects that aim to reduce energy consumption and digital footprint.

Objective

To reduce energy use in digital platforms by employing low-tech solutions.

Practical Application

Tools & Resources Needed: Low-tech website design (such as static HTML pages with content that requires less coding as it stays the same for all users), solar power for hosting and offline reading options for users.

Steps to Implement:

1. Transition your website to a minimalistic, static design.
2. Choose an energy-efficient hosting solution (preferably solar-powered).
3. Choose Optimize your website content (use default typefaces, simplify images).
4. Include offline options and reduced energy consumption settings.

Recommendations for implementation:

- Conduct an energy audit of your current website before transitioning.
- Educate your team on the benefits of low-tech design for environmental sustainability.

Challenges:

- Limited functionality compared to traditional, dynamic websites.
- Not suitable for content-heavy platforms that require complex interactivity.

Evaluation

- Reduced energy usage of the website, tracked through hosting analytics.
- User engagement with the low-tech content (e.g., website visits, reading times).

Results

- Successful reduction in energy usage, with the website running on only 1-2.5 watts of power.
- Increased awareness of low-energy digital solutions in the wider community.

Link to Resources:
https://solar.lowtechmagazine.com/

Digital Collaboration Tools for Travel Reduction

IT Managers, Pedagogical Engineers, Trainers

This practice involves implementing tools like Miro, Jamboard, or Microsoft Teams for brainstorming, collaboration, and project management. These platforms allow teams to work effectively in real-time without the need for physical gatherings, **reducing travel-related emissions and saving resources**.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and it applies to any organization seeking to reduce travel and improve digital collaboration.

Objective

Minimize the need for physical meetings and travel by using digital collaboration tools.

Practical Application

Tools & Resources Needed:

- Collaboration platforms.
- Stable internet connections and compatible devices.
- Training sessions on using these tools.

Steps to Implement:

1. **Select and procure** a suitable collaboration platform.
2. **Train** employees and trainers on its features and benefits.
3. **Integrate** the tool into project workflows and meeting structures.
4. **Monitor** usage and gather feedback for improvement.

Recommendations for implementation:

- Encourage managers to prioritize digital meetings over in-person ones.
- Showcase success stories of completed projects using these tools.

Challenges:

- Resistance to adopting new tools among less tech-savvy users.
- Ensuring consistent engagement during virtual meetings.

Evaluation

- Number of physical meetings replaced with digital ones.
- Reduction in travel-related expenses and emissions.

Results

- Reduction in in-office meeting travel.
- Improved collaboration efficiency and team flexibility.

Digital Sustainability Decalogue by Fondazione per la Sostenibilità Digitale

IT Managers, Trainers, Trainers Center Staff, Companies

Fondazione per la Sostenibilità Digitale (Foundation for Digital Sustainability) in Italy is dedicated to promoting sustainable digital practices through education, research, and advocacy.
They developed a **Digital Sustainability Decalogue** which provides a set of ten practical guidelines to help organizations, institutions and individuals minimize their environmental impact when using digital tools and resources.
This Decalogue encourages **mindful choices in IT use**, from energy-efficient practices to responsible digital consumption, aiming to create a balanced, environmentally conscious digital ecosystem.

The Foundation also conducts research and publishes resources, such as the **Digital Sustainability Paper**, which explores the environmental, social, and economic impact of digital activities and advocates for policies that prioritize sustainability; and the **Manifesto for the Digital Sustainability of Artificial Intelligence** on artificial intelligence sustainability and the use of AI for Sustainability.

Moreover, they also have a permanent Observatory that analyses citizens' behaviour concerning digital sustainability through the **DiSI™ (Digital Sustainability Index)**, which is the set of indices developed by the Foundation to measure the level of digital sustainability of users, territories and specific projects.

Objective

Provide a set of practical guidelines to help minimize the environmental impact when using digital tools and resources.

Practical Application

The Digital Sustainability Decalogue offers clear, actionable steps that organizations, institutions and individuals can incorporate into their daily digital operations to reduce their environmental impact.
Here are its **5 principles to follow to reduce pollution through digital practices**:

1. Use internet bandwidth sparingly.
2. Turn off the devices when not in use.
3. Avoid replacing devices every year.
4. Dispose of old devices as e-waste (WEEE – Waste Electrical and Electronic Equipment).
5. Delete unnecessary files from cloud accounts.

Here are its **5 principles to follow to reduce pollution thanks to digital**:

1. Install a smart meter to monitor electricity consumption.
2. Control a room's heating with an App to reduce pollution.
3. Reducing unnecessary driving with apps.
4. Using apps for better waste sorting.
5. Use apps for the circular economy to give objects, including digital devices, a second life.

Evaluation

- Number of measures implemented.
- Evaluation of achievements.

Results

- Build a culture of environmental responsibility, digital resource management, and energy-conscious IT practices.
- Align IT practices with sustainability goals, reduce digital environmental impact, and support broader initiatives for a more responsible, low-carbon digital ecosystem.
- Encourage employees to make sustainable digital choices, directly contributing to environmental sustainability, and fostering a mindset that values sustainability in both professional and personal contexts.

Link to Resources:

- https://sostenibilitadigitale.it/
- https://sostenibilitadigitale.it/wp-content/uploads/2022/03/Decalogo-Sostenibilita-Digitale.pdf

Green Data Practices

IT Managers, Trainers, Trainer Center Staff

This practice involves **adopting efficient data storage methods** such as data compression, archiving, and deleting unused files. Employees are trained to manage data responsibly, reducing the storage and processing demands on data centers.).

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and it is easily adaptable for organizations of any size that use digital storage systems.

Objective

Optimize digital storage and data usage to minimize energy consumption and reduce the environmental impact of data centers.

Practical Application

Tools & Resources Needed:

- Data management software for archiving and compression.
- Training modules for employees on responsible data practices.
- Regular audits of storage systems.

Steps to Implement:

1. Conduct a data audit to identify redundant or outdated files.
2. Implement tools for automatic data compression and archiving.
3. Train employees on data deletion policies and the importance of minimizing digital clutter.
4. Schedule regular audits to ensure adherence to green data practices.

Recommendations for implementation:

- Set up clear policies for data storage and deletion.
- Educate employees about the energy impact of excessive data storage.

Challenges:

- Resistance from employees worried about accidental data loss.
- Ensuring compliance with legal and regulatory requirements for data retention.

Evaluation

- Reduction in total storage usage measured in terabytes.
- Cost savings from lower storage and processing needs.

Results

- Reduction in redundant data storage.
- Improved efficiency of IT systems and reduced energy consumption.

ORANGE CAMPUS SUSTAINABILITY

Interview with Catherine FLOUVAT
Head of Orange Campus Sustainability

Can you introduce Orange Campus Sustainability?

Orange Campus Sustainability is the Orange Group's internal university dedicated to the Environment, Diversity & Inclusion, Ethics & Compliance. It is one of the Orange Group's schools, designed to meet the Group's strategic skills development challenges.

Hundreds of Orange Group employees contribute to these schools by designing and delivering both off-the-shelf and customised training courses for employees in France and abroad.

Why have you integrated sustainable IT within Orange Campus?

Training is not a profession with the greatest environmental impact.

However, the Orange Group has ambitious CSR (Corporate Social Responsibility) goals, particularly in terms of:

- Reducing carbon emissions,
- The eco-design of its products,
- Promoting the sale of reconditioned devices, and more.

Training employees on these issues is a key objective. We wanted to ensure alignment between the content of our training courses and our pedagogical engineering.

How did you integrate sustainable IT into your pedagogical engineering?

We developed the Ecolearning Program, which is structured around 10 themes identified during multiple workshops with learning and development managers.

To guide this initiative, we conducted a Life Cycle Analysis (LCA) of a training course at Orange, covering its entire lifecycle from design to archiving and eventual deletion.

Can you give a few examples?

We implemented several measures to integrate sustainable IT, including:

- A responsible purchasing policy for training, by questioning external service providers about their carbon footprint and the accessibility of their content.
- Limiting and optimizing travel for trainers and learners.
- Designing training deliverables in an eco-responsible way.
- Reducing the number of emails sent for registration confirmations, validation requests, and assessments.
- Eliminating obsolete content to minimize digital clutter.

How does this impact your purchasing policy, for example?

We have integrated green criteria into the evaluation and selection process for our suppliers. Specifically, we:

- Ask suppliers about the measures they have implemented to reduce their carbon footprint.
- Require information about whether they hold a label or certification for sustainability practices.
- Evaluate the accessibility of their content, which is critical for the Group. For this, we use the WCAG 2.2 recommendations as a baseline standard.

Paperless Office Initiative

Pedagogical Engineers, Trainers, Trainer Center Staff

Introduce digital tools for documentation, file sharing, and communication. Encourage double-sided printing only when necessary and **reduce paper use** in meetings.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and can be easily implemented across sectors that rely on documentation.

Objective

Promote digital workflows to eliminate unnecessary paper usage.

Practical Application

Tools & Resources Needed:

- Cloud storage platforms.
- E-signature tools.
- Digital meeting platforms.

Steps to Implement:

1. Educate employees on the benefits of going paperless.
2. Transition to cloud-based document sharing.
3. Minimize printing and adopt digital workflows.

Recommendations for implementation:

- Offer training on digital tools to ensure smooth adoption.
- Set up goals for paper reduction and monitor progress.

Challenges:

- Initial learning curve for employees unfamiliar with digital tools.
- Dependence on reliable internet access.

Evaluation

- Paper usage before and after implementation.
- Employee adaptation rates to digital tools.

Results

- Reduction in paper use.
- Increased productivity due to faster access to digital documents.
- Improvements in accessibility, sustainability, and user engagement.

Link to Resources:

https://www.ejosdr.com/download/exploring-paperless-working-a-step-towards-low-carbon-footprint-13410.pdf

Preparing a Sustainability Report Following the GRI – Global Reporting Initiative Standards

Trainers, Trainers Center Staff, Organizations, etc.

The **Sustainability Report** is an annual document organisations use to communicate their commitment to sustainability in a concrete, transparent and measurable way.
It consists of:

- Presenting the organisation's activities, both internally and in its relations with the outside world
- Identifying sustainability objectives
- Communicating the actions developed during the year based on the objectives expressed
- Identifying all the actors involved in the organisation's commitment to sustainability and describing the benefits and impacts that the organisation's activities have generated for them
- Present the results achieved, with data and figures measured according to credible and agreed indicators, for example the global standards for sustainability impacts
- Define sustainability goals for the future.

The sustainability report, therefore, provides both general information on the profile of the organisation and its activities, and much more specific information on the **organisation's commitment to the environment, people and the community**.
The document considers all three dimensions of sustainability: environmental sustainability, governance sustainability, and social sustainability.

Objective

Track progress toward sustainability goals and transparently communicate sustainability performance and commitment.

Practical Application

For training centers, implementing sustainability reporting based on GRI (Global Reporting Initiative) Standards helps align their activities with sustainable practices while enhancing their reputation as responsible, forward-thinking organizations. The preparation of the Sustainability Report, updated from year to year, requires a systematic and rigorous approach. Here are the steps to prepare a sustainability report:

- **Define the objectives**, i.e. the organisation's actions for sustainability.
- **Identify the stakeholders**, i.e. identify the most important actors with whom the organisation relates (employees and collaborators, local community, etc.).
- **Collect data**, i.e. gather information and quantitative data on the sustainability actions developed.
- **Define performance indicators** (KPIs - Key Performance Indicators): the data collected must be evaluated according to reliable assessment criteria.
- **Analysing the data**: after collecting the necessary information and defining the KPIs, the organisation must analyse the data, e.g. following the GRI.
- **Write the report**: the information, data and measurement results flow into the sustainability report, which is a detailed record of the organisation's commitment to sustainability.

Evaluation

- Learn to evaluate environmental, social, and economic progress, setting a standard for responsible practices within educational institutions.
- Identify areas where resources are being overused, enabling the center to reduce energy, water, and paper consumption, thus saving costs.

Results

- Improve credibility and appeal to potential students, partners, and funders interested in sustainability, building trust with stakeholders, students, and local communities.
- Offer students valuable knowledge about sustainable practices, preparing them for careers that increasingly value environmental responsibility.

Link to Resources:

- https://sostenibilitadigitale.it/
- https://sostenibilitadigitale.it/wp-content/uploads/2022/03/Decalogo-Sostenibilita-Digitale.pdf

Smart Device Energy Management

IT Managers, Trainers, Trainer Center Staff

This practice involves using smart power strips and software tools to schedule and automate the shutdown of non-essential devices such as computers, monitors, and projectors. These tools help **prevent energy waste and ensure devices are only active when needed**.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and it is easily implementable in any workspace with digital devices, regardless of size.

Objective

Reduce energy waste by automating the shutdown of devices during non-working hours.

Practical Application

Tools & Resources Needed:

- Smart power strips.
- Device scheduling software.
- Awareness posters for manual device shutdown reminders.

Steps to Implement:

1. Conduct an inventory of devices to identify those suitable for automation.
2. Purchase and install smart power strips and scheduling software.
3. Train staff on using scheduling software and ensure they know how to override it when necessary.
4. Monitor energy usage and adjust schedules as needed

Recommendations for implementation:

- Begin with a pilot phase in a single department to test effectiveness.
- Use energy savings reports to encourage company-wide adoption.

Challenges:

- Initial costs for purchasing smart strips and software.
- Ensuring all devices comply with the automation settings.

Evaluation

- Reduction in monthly energy consumption.
- Staff feedback on ease of use.

Results

- Reduction in energy bills.
- Increased awareness of energy-saving practices among employees.

Sustainable Digital Devices

IT Managers, Trainers, Trainer Center Staff

This practice involves **purchasing digital devices with eco-certifications**. These devices consume less energy and are manufactured using environmentally friendly processes. Organizations also establish procurement policies that prioritize vendors committed to sustainability.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and can be implemented in any organization upgrading its IT infrastructure.

Objective

Promote the use of energy-efficient and sustainably manufactured digital devices to reduce the environmental footprint of training centers.

Practical Application

Tools & Resources Needed:

- Procurement policies specifying eco-certified products.
- Vendor partnerships with sustainable brands.
- Training on selecting and maintaining eco-friendly devices.

Steps to Implement:

1. Audit current IT infrastructure to identify devices needing replacement.
2. Research and shortlist eco-certified devices and vendors.
3. Train IT staff on maintaining and optimizing these devices.
4. Monitor energy savings and share results with the organization.

Recommendations for implementation:

- Choose devices with lower energy consumption and recyclable components.
- Collaborate with vendors offering trade-in or recycling options for old devices.

Challenges:

- Higher initial costs for eco-certified devices.
- Limited availability of some sustainable device models.

Evaluation

- Reduction in energy consumption measured by energy bills.
- Increased use of eco-certified devices across the organization.

Results

- Reduction in energy costs from IT equipment.
- Strengthened partnerships with sustainable technology vendors.

Sustainable Hardware Procurement Policies (Reuse, Refurbishment, and Remanufacturing)

IT Managers & Purchases, Trainers, Learners

Since 2013, **Epimorfotiki Kilkis** in Greece has implemented a policy to **purchase refurbished devices** for staff use and training facilities. With over 100 computers in active use, the organization works with certified refurbishers to ensure quality and sustainability.
This practice significantly reduces costs, extends the lifecycle of IT equipment, and supports the principles of the circular economy.

This practice can be easily adopted by organizations aiming to lower costs and environmental impact while maintaining high-quality technological infrastructure.

Objective

To reduce e-waste and minimize environmental impact by adopting refurbished hardware for organizational and training needs.

Practical Application

Tools & Resources Needed:

- Procurement policies prioritizing refurbished hardware.
- Partnerships with certified refurbishers.
- Inventory management system for tracking hardware lifecycle.

Steps to Implement:

1. **Establish a refurbished-first policy:** Ensure all departments consider refurbished devices as a priority before purchasing new hardware.
2. **Collaborate with certified refurbishers:** Partner with reliable vendors who adhere to quality and environmental standards.
3. **Create a hardware redeployment program:** Collect decommissioned devices, refurbish them, and reassign them within the organization.
4. **Upgrade hardware periodically:** Refresh old devices by upgrading components like RAM or storage to extend their usability.
5. **Support local refurbishers:** When possible, collaborate with local vendors to reduce shipping emissions and support the regional economy.

Recommendations for implementation:

- Regularly audit the hardware inventory to identify devices for refurbishment.
- Provide training for IT staff on maintaining and upgrading refurbished equipment.
- Highlight the cost and environmental benefits of refurbished devices to stakeholders.

Challenges:

- Ensuring consistent quality across refurbished devices.
- Managing potential compatibility issues with older hardware.

Evaluation

- Percentage of refurbished devices in active use.
- Cost savings compared to purchasing new hardware.
- E-waste reduction generated by the organization.

Results

- Over 100 devices in use have been sourced as refurbished, significantly reducing procurement costs.
- Enhanced sustainability by reducing e-waste and supporting the circular economy.
- Improved operational efficiency through strategic hardware upgrades.

The “5 R” Rule for Digital Training

Pedagogical Engineers, IT Managers and Purchases, Trainers

The **“5 R” rules** were proposed by Béa Johnson in her book “Zero Waste Home: The Ultimate Guide to Simplifying Your Life by Reducing Your Waste” published in 2013.
By following 5 basic principles, one is able to considerably reduce their generated waste. What if these 5 universal rules were adapted to reduce the environmental impact of digital training?

Those rules can also be adapted to reduce the environmental impact of in-person training (classroom equipment, printed documents, etc).

Objective

Apply sobriety strategies at all levels of action accessible to design digital training.

Practical Application

Tools & Resources Needed:

- Procurement policies prioritizing refurbished or second-hand equipment.
- Inventory management system for tracking digital training equipment lifecycle.
- Partnerships with a certified electronic repairer.

Steps to Implement:

1. **Refuse**: Say no to buying new digital equipment or software you don't really need for your digital training (especially if it is not eco-designed).
2. **Reduce**: Protect and take care of the digital equipment you are using for your digital training (computer, smartphone, microphone, etc.) and buy only the necessary quantities of equipment or software for your TC (pooling, sharing, multi-purposing).
3. **Repair**: Try to get your digital equipment repaired or your software updated before deciding to replace it.
4. **Reuse**: Avoid buying new equipment and favor the purchase of second-hand or refurbished equipment (most of the environmental impact of digital equipment comes from its manufacturing phase).
5. **Recycle**: Drop off your non-repairable or out-of-use equipment at an appropriate e-waste collection facility (WEEE European directive).

Recommendations for implementation:

- The rules list is ordered: Thus, recycling is considered the last solution to consider after exploring all other possible alternatives.

Challenges:

- Technical (hardware or software) and psychological obsolescence can make it hard to refuse the buying of new digital equipment or software.

Evaluation

- Percentage of refurbished or second-hand devices in active use in the TC.
- oAverage lifespan of digital equipment in the TC.

Results

- Cost savings due to the increased lifespan of digital equipment and the purchase of refurbished or second-hand equipment instead of new ones.
- Reduction in e-waste generated by the TC.

Link to Resources:

Waste from Electrical and Electronic Equipment (WEEE) European directive: **https://environment.ec.europa.eu/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en**

Use Natural Lighting and Energy-Efficient Bulbs

IT Managers, Trainers, Trainer Center Staff

Encourage the use of natural daylight by rearranging workspaces near windows and replacing traditional light bulbs with **energy-efficient LED alternatives**. Install motion sensors in low-traffic areas to automatically turn off lights when not needed.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria, and it is highly adaptable for all office types, including small businesses and large corporate spaces.

Objective

Reduce energy consumption by optimizing office lighting systems.

Practical Application

Tools & Resources Needed:

- LED bulbs.
- Motion sensor devices.
- Light meters (optional).

Steps to Implement:

1. Assess lighting needs in different areas of the office.
2. Install LED bulbs and motion sensors.
3. Rearrange desks or workstations near windows.
4. Educate employees on using natural light effectively.

Recommendations for implementation:

- Conduct periodic reviews to ensure lights are used efficiently.
- Combine with other energy-saving initiatives for maximum impact.

Challenges:

- Initial costs for purchasing sensors and LEDs.
- Resistance to desk rearrangement.

Evaluation

- Reduction in monthly electricity bills.
- Employee feedback on workspace comfort.

Results

- Savings in lighting costs.
- Positive impact on employee satisfaction due to improved workspace aesthetics.

Use of Sustainable IT Tools

IT Managers, Trainers, Organizational Decision-Makers

Since 2019, **Epimorfotiki Kilkis** in Greece has prioritized the **use of sustainable IT tools** for its operational and training needs. This includes the adoption of cloud services with energy-efficient data centers, collaborative platforms to minimize physical resource use, and energy-efficient hardware certified for sustainability.
These practices align with the organization's commitment to reducing its environmental footprint while enhancing operational efficiency.

This approach can be adopted by organizations aiming to lower costs and environmental impact while maintaining high-quality technological infrastructure.

Objective

To integrate sustainable IT tools across organizational operations, reducing environmental impact while maintaining efficiency and scalability.

Practical Application

Tools & Resources Needed:

- Cloud computing platforms with efficient energy usage.
- Collaborative tools for virtual communication and document sharing.
- Energy-efficient hardware (e.g., devices with Energy Star certification).

Steps to Implement:

1. **Assessment of IT needs**: Evaluate current IT infrastructure for areas of improvement in sustainability.
2. **Adoption of Cloud services**:.
3. **Integration of collaborative tools**: Use tools to enhance productivity while minimizing the need for physical resources.
4. **Regular monitoring**: Use analytics to measure the impact of IT tools on energy consumption and operational efficiency.
5. **Staff training**: Provide workshops to familiarize employees with sustainable IT practices and tools.

Recommendations for implementation:

- Select providers and tools with clear sustainability certifications.
- Optimize tool usage with automation features to minimize waste.
- Encourage remote work practices to reduce travel and office resource consumption.

Challenges:

- Initial setup costs for transitioning to cloud-based systems.
- Training staff to maximize the potential of new IT tools.

Evaluation

- Reduction in energy consumption and operational costs.
- Increased efficiency in organizational processes through IT tools.

Results

- Enhanced sustainability in IT operations.
- Improved collaboration and productivity.
- Reduction of the organization's carbon footprint.

Virtual Training Platforms

IT Managers, Pedagogical Engineers, Trainers

This practice uses platforms like kChat and similar **eco options to conduct training sessions virtually**, reducing travel emissions and resource use. It also includes developing hybrid models for participants who prefer in-person attendance.

This practice is promoted by the Coaching Bulgaria Association in Bulgaria and it is highly adaptable in organizations where training is integral, especially in urban or geographically dispersed areas.

Objective

Promote sustainability by transitioning to virtual or hybrid training sessions, reducing the need for travel.

Practical Application

Tools & Resources Needed:

- Virtual meeting platforms.
- Stable internet connection and webcams.
- Pre-designed digital learning modules.

Steps to Implement:

1. Select the most suitable virtual platform for your training needs.
2. Train staff and trainers on using the platform effectively.
3. Develop engaging online modules that include videos, interactive sessions, and downloadable resources.
4. Schedule hybrid training models for a balanced approach when required.

Recommendations for implementation:

- Provide support to participants unfamiliar with virtual platforms.
- Incorporate interactive tools like polls or breakout rooms to increase engagement.

Challenges:

- Internet connectivity issues for some participants.
- Resistance from trainers or learners who prefer traditional methods.

Evaluation

- Attendance rates for virtual sessions.
- Feedback from participants on the effectiveness of virtual training.

Results

- Reduction in travel-related emissions.
- Positive feedback on the flexibility and accessibility of virtual training options.

Why is it Important to Implement Sustainable IT for Education and Training Providers?

Interview with Laurent DEDIEU
Head of Development of My Green Training Box

Why have you implemented digital responsibility at My Green Training Box?

Digital technology pollutes. Every stage in its life cycle has a major ecological impact. The amount of raw materials and water needed to produce it is enormous. So does the amount of energy required to use it. When you realise the impact of digital technology, it's hard not to take action. And when your company's activity is essentially based on the development of digital solutions, action becomes mandatory.

What practical steps have you taken?

The first action was to train our teams in digital responsibility.

Next, we co-constructed a plan of 11 concrete actions to be implemented in our company. These actions ranged from managing our emails to reducing the size of our digital content and more sustainable hosting solutions. Today, we've come a long way in reducing our digital impact. Our platform, My Green Training Box, has been developed using an eco-design approach, sustainable IT has been installed at every level of our company, and all our digital services are hosted by a responsible provider. And since July 2024, we have been awarded the level 2 sustainable IT label.

So, like other sectors, it needs to think about how to reduce its impact. Education also has a role to play in setting an example for the young people it supports. There is a huge need to educate people about digital pollution. People often don't realize that a Google search consumes energy and that when multiplied across the planet this results in colossal energy consumption. And energy consumption is not the only impact. There are many others.

How can schools, universities, and training centres reduce their digital impact?

There are several ways, for instance, they can pay attention to their IT purchases. Do they always need the latest tablets on the market? They can also reuse and update their digital resources rather than recreating new content every time or piling up off-the-shelf digital training content on their servers that they no longer use.

Think about whether face-to-face or distance learning is appropriate, depending on the teaching objectives. Is it necessary to have 200 students travel to project a presentation on a screen in a course with no interaction between the teacher and the students?

How do you see responsible digital technology developing in the education and training sector?

The next big challenge is AI. Clearly digital technology pollutes, but with the massive use of AI it will be even worse. Regulating the use of AI, educating people about its ecological and ethical impact, and thinking about its usefulness before using it are all issues that we're going to have to look at in the years to come. We're seeing a lot of questions being asked about the risks of using AI to convey false information. What about education? Is there a risk of imparting inaccurate knowledge because of AI?

Conducting a Virtual “Moving Debate”

Pedagogical Engineers, Trainers

The **moving debate** is an activity of public schools in France to encourage participants to express their views on a chosen topic, to give them the opportunity to reflect on their views and to keep or change their opinions based on the arguments of their peers. Initially designed to be carried out in a classroom, digital tools can also be used in order to conduct this activity remotely.

The method can serve as an introduction to any of the topics connected to global issues (e.g., social injustice, consumerism, climate change, migration, gender equality, etc.).

Objective

A remote activity to encourage participants to think about all sides of an argument.

Practical Application

Tools & Resources Needed:

- A video conference tool with a virtual board functionality (e.g., Zoom, Google Meet, etc.).
- And/or a dedicated virtual board tool (e.g., Mural, Miro, etc.).

Steps to Implement:

1. Place two signs AGREE/DISAGREE on opposite sides of a virtual board.
2. Ask the participants to create an avatar with their name and/or an image to represent them on the virtual board.
3. Tell them you are going to call out a statement:

- If they agree with the statement, they must move their avatar to the "agree" sign.
- If they disagree with the statement, they must move their avatar towards the "disagree" sign.

4. They can persuade those standing on the opposite side to change positions by explaining to the group their opinions/arguments on the topic.
5. If others agree with what is said, they can move their avatar on the virtual board.

Recommendations for implementation:

- At the beginning of the debate, make it clear to the participants that they shall choose individually whether he/she agrees or disagrees with the given statement.
- The chosen statement shall be polarising enough to generate debate among participants.
- After all aspects of the statement are discussed, remind the participants that each of them is able, at any moment, to change his/her mind.

Challenges:

- Rien ne garantit que le débat va réellement « décoller ».
- Certains participants, peu à l'aise en groupe ou avec la logique argumentative, peuvent se sentir exclus.

Evaluation

- Feedback from participants after the debate.
- Measurement of engagement and participation rates on the virtual board.

Results

- Développer l'esprit critique.
- Développer les compétences en matière de débat.
- Promouvoir le dialogue, le débat et la résolution des conflits.

Link to Resources:

Resources, Case Studies and Tools for training and events in the Friends of the Earth Europe network: **https://www.youngfoe.ie/assets/files/pdf/populareducationmodule.pdf**

Digital Competence Enhancement Workshops

Trainers, Trainer Center Staff, Learners

Epimorfotiki Kilkis in Greece organizes annual workshops and training sessions aimed at **upgrading digital skills** for diverse target groups, including educators and adult learners. These events cover a variety of topics such as digital literacy, online safety, e-learning tools, and advanced digital technologies, enabling participants to stay updated in a rapidly evolving digital landscape.

This practice is adaptable across educational and professional contexts, allowing other organizations to replicate it to meet the digital skill needs of their target audiences.

Objective

To annually enhance digital skills and competencies among trainers and learners through specialized workshops, trainings, and seminars.

Practical Application

Tools & Resources Needed:

- Digital devices (laptops, tablets, etc.) and software for hands-on training.
- Access to e-learning platforms.
- Experienced trainers familiar with digital skill-building.

Steps to Implement:

1. **Needs assessment**: Identify the specific digital skills required by trainers and learners through surveys or feedback.
2. **Workshop design**: Develop tailored curricula addressing various skill levels and needs, from basic digital literacy to advanced technologies like AI and data analytics.
3. **Event organization**: Schedule annual workshops and promote them to the target groups. Use both in-person and online formats for flexibility.
4. **Practical training**: Focus on hands-on learning, ensuring participants can immediately apply what they've learned.
5. **Follow-Up support**: Provide post-training resources, such as guides or access to recorded sessions, to reinforce learning outcomes.

Recommendations for implementation:

- Collaborate with IT professionals to ensure workshops align with current digital trends.
- Offer certification to participants to motivate engagement and demonstrate value.
- Monitor participant feedback to continuously improve training quality and relevance.

Challenges:

- Ensuring high participation rates among diverse target groups.
- Balancing content complexity to meet varying skill levels.

Evaluation

- Participant satisfaction and feedback.
- Improved digital competency levels among attendees, measured through pre- and post-training assessments.
- Increased use of digital tools in teaching and learning environments.

Results

- Enhanced digital literacy for trainers and learners.
- Broader adoption of modern digital tools in educational settings.
- Increased participant confidence in navigating the digital world.

Link to Resources:

Visit the official website of **Epimorfotiki**, providing information on training programs and consulting services.

E-waste Reduction by Re-Tech Life Onlus

IT Managers, Educators and Institutions integrating e-waste reduction and refurbishment into curricular or community initiatives

Re-Tech Life Onlus is an Italian nonprofit that collects, refurbishes and donates old IT equipment to **reduce electronic waste**.
They take in used computers, phones, and other devices, repair and upgrade them, and redistribute them to schools, nonprofit organizations, and disadvantaged communities.
They prevent functional devices from becoming waste and provide affordable tech to those in need.

Since its founding in 2006, **more than 300.000 IT** devices have been recovered, some destined for more than 2.500 schools and nonprofits.

Objective

To encourage a circular economy by extending the lifespan of electronics and reducing e-waste.

Practical Application

To replicate Re-Tech Life Onlus's success in a training or educational setting, educators and institutions can adopt similar practices on a smaller scale, integrating e-waste reduction and refurbishment into curricula or community initiatives.

For example:

- **Launch a device collection program**: Organize a device donation drive where students, staff, and community members can donate used but functional devices. Create collection points around the institution and communicate guidelines for acceptable devices. Partner with a local tech repair shop for assistance if repairs exceed the available skills.
- **Establish a repair and refurbishment workshop**: Develop a hands-on workshop as part of an IT curriculum to learn to assess, clean, and repair old electronics. This can be part of a vocational program or a specific course on hardware maintenance. Learners will gain practical repair skills and firsthand experience on how to give old technology a new purpose.
- **Set up a redistribution program**: After refurbishing, redistribute the devices to local organizations, non-profits, or students in need. This could be organized as a community outreach project where students learn project management skills by planning and executing the distribution.
- **Encourage local partnerships**: Partner with companies, non-profits, or local governments to secure more devices for refurbishment and distribution. Such partnerships can provide learners with networking opportunities and insights into community-based technology sustainability.

Evaluation

- Number of devices recovered.
- Number of schools, nonprofit organizations, and disadvantaged communities helped.

Results

- Foster a mindset focused on sustainability by demonstrating how to reduce e-waste and the importance of giving technology a second life.
- Teach technical skills for device refurbishment, raise awareness of circular economy concepts, and instill problem-solving skills relevant to real-world sustainability challenges in technology.
- Ensure greater access to technology by providing available devices to underserved communities.

Link to Resources:

https://www.retechlife.com/about.html

Mentoring Local Communities and Businesses in Digital Literacy and Tools by Maks vzw

Pedagogical Engineers, Trainers, Local communities, individuals facing digital exclusion, NGOs focusing on digital literacy and empowerment.

Maks vzw in Belgium offers **ICT training courses** and digital literacy workshops to individuals in Brussels, focusing on those with limited digital opportunities. They also provide services like creating video CVs, graphic design, and digital stories to support local communities and businesses.

This practice is highly adaptable, particularly for local organisations or NGOs seeking to reduce digital inequalities by providing tailored digital literacy support to underserved communities.

Objective

To reduce digital inequality by providing digital literacy training and developing innovative tools to empower individuals in marginalized communities.

Practical Application

Tools & Resources Needed: Computers and internet access for training, digital training materials (e.g., guides, video tutorials), volunteer trainers or experts in digital literacy and collaboration with local businesses and organisations to offer real-world training opportunities.

Steps to Implement:

1. **Identify communities** in need of digital literacy support.
2. **Develop training modules** based on the needs of the target audience (e.g., basic computing, online safety, digital job applications).
3. **Offer tailored workshops** and peer-to-peer support to build digital skills.
4. **Provide additional services** (e.g., video CVs, graphic design) to enhance employability and empowerment.

Recommendations for implementation:

- Work closely with local businesses to identify digital skills that are in demand in the job market.
- Offer ongoing support for participants to apply what they have learned in real-life situations.

Challenges:

- Engaging individuals who may feel overwhelmed by technology or have limited access to devices.
- Securing sufficient resources (funding, equipment, trainers) to sustain the training initiatives.

Evaluation

- Number of individuals trained and their feedback on the quality of training.
- Improvement in digital literacy and the ability to apply digital skills (e.g., creating video CVs, using the internet for job searches).
- Success stories of individuals finding employment or improving their digital capabilities.

Results

- Over 23 years, Maks vzw has successfully supported numerous individuals in gaining essential digital skills, contributing to their social inclusion and employability.
- Created innovative tools (e.g., video CVs) to help individuals present their skills and talents in the digital world.

Link to Resources:

https://maksvzw.org/en/

Offering Free Digital Workshops to Local Communities by Atelier Du Web

IT Managers, Trainers, Local communities, individuals seeking to improve digital skills

Atelier Du Web in Belgium offers free digital workshops to the public, aimed at **reducing the digital divide** and improving digital literacy for individuals who may not otherwise have access to training resources. The workshops cover a range of topics, from basic digital skills to more advanced IT training.

This practice is easily transferable to other local communities, especially those with high levels of digital exclusion. It can be replicated by any organisation or municipality looking to bridge the digital skills gap.

Objective

To reduce digital inequalities by providing free digital skills workshops to the local community.

Practical Application

Tools & Resources Needed: Workshop materials (e.g., computers, internet access, instructional guides), trainers or facilitators, and partnerships with local organisations or municipalities.

Steps to Implement:

1. Identify target groups within the community who would benefit from digital skills training.
2. Develop a curriculum that includes basic to advanced digital literacy topics.
3. Set up a schedule for free workshops, offering both in-person and online options.
4. Promote the workshops through community channels to reach a broad audience.

Recommendations for implementation:

- Focus on engaging local volunteers or experts as trainers.
- Tailor the workshops to meet the specific needs of the community, such as elderly people, migrants, or unemployed individuals.

Challenges:

- Ensuring ongoing participation from the community, especially for longer-term courses.
- Securing the necessary funding for materials and equipment.

Evaluation

- Number of individuals trained and their feedback on the courses.
- Improvements in digital skills among participants, measured through pre- and post-assessments.

Results

- Successful reduction of the digital divide in the community through increased access to digital skills training.
- Positive feedback from participants, many of whom have improved their employability and digital literacy.

Link to Resources: https://atelierduweb.be/

Organise a “Digital Collage” Workshop

Pedagogical Engineers, IT Managers, Trainers, Trainer Center Staff, Trainer Center Stakeholders

The Digital Collage was created by Aurélien Déragne and Yvain Mouneu and deployed by the association "La Fresque du Numérique" in France.

It is a fun and collaborative **1/2-day workshop** with a similar educational method as the “Climate Fresk” (climate change awareness workshop) to understand, as a team and in a fun way, the impact of digital technologies on the environment and how to reduce it.

It is available in 7 different languages (French, English, Spanish, German, Portuguese, Dutch, and Chinese) and also available in a remote format (useful when participants are unable to meet in person).

The face-to-face workshop format requires only basic office equipment (papers, printed cards, tables, pens).

By the end of 2024, more than **70,000 participants in the world** will have already taken this workshop, including 30,000 who took the workshop in their workplace.

Objective

Raise awareness of the environmental challenges posed by digital technology and actions to overcome them.

Practical Application

Tools & Resources Needed (for 1 team of 4 to 8 participants in-person):

- 1 facilitator (for up to 2 teams).
- 1 table of size 1 meter by 3 meters (or 2 tables brought together).
- 1 “Digital Collage” card set (for each team).
- Supplies: paper roll, tape, pencils, erasers, markers.

Steps to Implement:

The workshop is divided into 4 stages:

1. **Understanding**: Participants progressively create their collages with distributed cards and links (some cards depend on others).
2. **Creativity**: Participants illustrate their key points and messages, then choose a title to help them absorb the knowledge they have acquired and create team spirit.
3. **Feedback**: The collages created are discussed and celebrated, and the workshop's key messages are recapped for a clear takeaway.
4. **Actions**: Participants look at the 20 action cards and discuss which actions are most relevant to their role and team within their organisation.

Recommendations for implementation:

- Use a face-to-face format wherever possible, as this is the most impactful for participants.
- However, a remote format is also available using a video conference tool (e.g., ZOOM) and a visual work platform (e.g., MURAL).
- At the end of the workshop, the facilitator can invite turn-taking by asking the participants: “Which next small step would you like to take after this workshop?”

Challenges:

- Need to follow a professional training course to become a facilitator of this workshop.
- Otherwise, the services of an external professional facilitator are required.
- When the workshop is used for professional purposes, license fees shall be paid to the “Digital Collage” association (€10 excl. VAT per participant).

Evaluation

- A satisfaction and feedback form is sent to the participants at the end of the workshop.

Results

- Enhanced knowledge among an organisation’s stakeholders on the environmental challenges of digital technology.
- Nurtured cultural change internally by bringing teams together and pooling their collective intelligence.
- Fostered strategic thinking by structuring and advancing the organisation’s digital sustainability strategy.

Link to Resources:

- Digital Collage website: **https://digitalcollage.org**
- MURAL tool website: **https://www.mural.co**

Supporting the development of Digital Public Spaces by Réseau Caban-Dibac

IT Managers, Trainers, Public and private organisations addressing digital divide, digital public spaces (EPNs), and individuals in need of digital literacy support.

The **Caban network** brings together organisations (EPNs, NGOs, etc.) dedicated to **reducing the digital divide** in Belgium. They support digital inclusion by providing digital access, skills training, and advocating for policy changes to ensure equitable access to digital resources.

This model can be adapted in other regions or countries, particularly in areas with significant digital exclusion, by forming similar networks and collaborations to address local needs.

Objective

To fight against the digital divide by supporting the development of digital public spaces (EPNs) that aim to give all users unrestricted access to an open resource of culture and knowledge, and provide assistance for individuals to improve their digital skills and access essential digital services.

Practical Application

Tools & Resources Needed: Digital tools and materials for digital public spaces (e.g., computers, internet access), skilled facilitators and digital trainers, partnerships with public and private sector actors, and advocacy materials for policy engagement.

Steps to Implement:

1. Audit current IT infrastructure to identify devices needing Set up or partner with existing EPNs to offer accessible digital spaces for training.
2. Provide tailored digital literacy workshops and training sessions for individuals.
3. Advocate for policy change and structural funding to support the sustainability of EPNs and digital inclusion efforts.
4. Develop partnerships with local actors to raise awareness of digital exclusion and support public initiatives.

Recommendations for implementation:

- Ensure that EPNs are located in areas where digital exclusion is most prevalent.
- Engage local communities in the development of digital training programs.
- Advocate for long-term funding to ensure the sustainability of these initiatives.

Challenges:

- Securing long-term funding for EPNs.
- Engaging hard-to-reach individuals who may be most in need of digital skills training.
- Overcoming the lack of physical access to digital services in some areas.

Evaluation

- Number of individuals trained in digital skills.
- Feedback from participants regarding their digital autonomy and access to services.
- Successful policy changes or increases in funding for digital inclusion.

Results

- Supported individuals in overcoming barriers to digital access, improving their skills and digital autonomy.
- Improved social cohesion by providing collective, accessible spaces for learning.
- Raised awareness about the need for sustained investment in digital inclusion, securing funding for continued efforts.

Link to Resources:
https://www.caban.be/?lang=fr

Sustainable Digital Skills Training – ReDI School of Digital Integration

Trainers, Trainers Center Staff, Organizations, etc.

Founded in 2015 in Germany, **ReDI School of Digital Integration** is a non-profit tech school providing migrants and marginalized locals **free and equitable access to digital education**, while promoting sustainability by reusing and refurbishing IT equipment – e.g. by restoring used or outdated technology, such as computers, servers, or networking devices, to good working condition – for training.
Their aim is to provide learners with valuable digital skills, a growth mindset, strengthened career skills and a strong network of tech professionals to help create new opportunities for all.

ReDI School combines digital skills training with social impact by leveraging donated and refurbished IT equipment.
Participants are taught coding, data analytics, and digital literacy while learning about sustainable practices in IT. Mentoring and job placement programs complement the training, making it practical and inclusive, by collaborating with tech companies, startups and digital industry leaders.

This practice is highly transferable: any organization can replicate it by sourcing donated IT equipment, partnering with local tech businesses, and designing modular digital skills courses for various skill levels.

Objective

To provide disadvantaged students with valuable digital skills to help them create new career opportunities.

Practical Application

ReDI School's model combines practical digital skills training with sustainability, emphasizing the reuse of IT equipment and community empowerment. It is possible to replicate this practice:

- **Partner with local businesses**, corporations, and individuals to collect used IT devices such as laptops, desktops, and tablets, establishing agreements for regular contributions, and ensuring a steady supply of equipment.
- **Collaborate with tech repair shops, IT professionals**, or vocational schools to refurbish the collected devices. This involves cleaning, repairing hardware, updating software, and ensuring the devices meet minimum performance standards for training purposes.
- **Include sessions** during the training program that teach participants how to maintain and optimize their devices to extend their lifespan. Emphasize the environmental impact of e-waste and the importance of device longevity.
- **Design a flexible curriculum** divided into beginner, intermediate, and advanced levels, catering to participants with varying degrees of prior digital knowledge.
- **Incorporate real-world projects**, such as creating websites, apps, or digital tools, allowing participants to apply their skills in meaningful ways.
- **Establish a mentorship program** where industry professionals guide participants through their learning journey, providing career advice, technical support, feedback on projects, and internship or job placement opportunities for participants.

- **Organize hackathons**, coding challenges, and networking events where participants can showcase their skills, meet potential employers, and collaborate on sustainability-focused projects.
- **Include workshops on resume building**, interview preparation, and workplace communication to prepare participants for professional environments.

Evaluation

- Participant feedback to assess satisfaction with training programs and perceived usefulness of acquired skills.
- Employment and education outcomes, tracking the number of participants who secure jobs or enroll in educational programs after completing training.

Results

- Training centers become hubs for empowering disadvantaged groups, aligning with social responsibility goals, and improving their digital literacy and sustainability awareness.
- Commitment to environmental sustainability, significantly reducing e-waste.
- Partnerships with businesses and mentors strengthen ties with the local tech ecosystem and increase placement opportunities for learners.

Link to Resources:
https://www.redi-school.org/

Virtual Exchange Programs for Digital and Sustainability Skills - Soliya

Trainers, Trainers Center Staff

Founded in 2003 in the Netherlands, **Soliya** aims to enhance digital collaboration and communication skills while fostering cultural understanding and sustainability awareness.
They become leaders in the **Virtual Exchange field**, developing high-impact inter- and cross-cultural education and training methodologies facilitated through digital technology.
Soliya's virtual exchange programs use video conferencing and collaborative tools to connect learners globally. Participants engage in facilitated discussions on global challenges, including sustainability and digital inclusion.
This promotes the efficient use of digital platforms to reduce the need for physical travel while enhancing critical digital competencies.
Each year, they bring together **15.000 young adults** in small, diverse groups.

This model can be adapted by any organization offering online education. It requires a robust video conferencing platform, trained facilitators, and a curriculum focused on sustainability and digital collaboration.

Objective

To develop high-impact inter- and cross-cultural education and training methodologies through digital technology for virtual exchanges.

Practical Application

Soliya's model leverages virtual exchanges to connect learners worldwide, enhancing digital collaboration skills and fostering cultural understanding.

It is possible to replicate this practice:

- **Choose an energy-efficient video conferencing platform** that supports group interactions and breakout rooms. Ensure the platform is accessible and compatible with participants' devices, especially in areas with low bandwidth.
- **Train facilitators** to manage online discussions and create inclusive, engaging, and respectful virtual environments. Facilitators should be skilled in mediating discussions, encouraging participation, and resolving potential conflicts.
- **Prepare technical guidelines** for participants to optimize their devices and connections for low-energy, high-quality participation (e.g., encourage low-resolution video settings to reduce data usage, and use shared document tools for collaboration).
- **Build discussion topics and collaborative projects** around global challenges, particularly focusing on sustainability and digital responsibility. Educate participants on energy-efficient digital behaviors (such as turning off video when not speaking, measuring carbon savings, and comparing the carbon footprint of virtual exchanges to that of in-person events).
- **Partner with training centers** or organizations in other countries to connect participants from diverse cultural backgrounds. Ensure balanced representation to foster genuine exchange and mutual learning.

- **Provide opportunities** for participants to connect beyond the sessions, such as virtual alumni networks or discussion forums on platforms like Slack or Discord.
- **Ensure sessions are inclusive** for participants with different digital skill levels, disabilities, or access challenges. This may include offering captioning for sessions, using simple and intuitive digital tools, and providing asynchronous participation options.

Evaluation

- Participant feedback to assess satisfaction with training programs and perceived usefulness of acquired skills.

Results

- Gain proficiency in virtual collaboration tools, project management, and online communication
- Connect learners to global sustainability discussions, positioning themselves as hubs for responsible and impactful digital learning.
- Eliminate travel, significantly lowering the carbon footprint of international education programs.

Link to Resources:
https://soliya.net/

Conclusion

Digital technology is a powerful lever for transformation, but its use needs to be rethought to avoid a growing digital divide and limit its ecological footprint. Thanks to the best practices identified in this book, we have demonstrated that **it is possible to adopt more responsible solutions without compromising the quality of learning**.

The future of training depends on collective awareness and a commitment to **integrating digital tools that respect individuals, the environment and democratic principles**. We invite every reader to adopt these practices, to disseminate them and to play an active part in this transition towards more inclusive and ethical digitalisation.

Together, let's shape a digital world that serves sustainable and equitable learning!

Visit our Website:
https://sustainable-digital-learning.com/

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