# DIGITAL LEARNING AND ITS ENVIRONMENTAL IMPACT

## WHAT IS DIGITAL LEARNING AND WHY IS IT IMPORTANT TO CONSIDER ITS ENVIRONMENTAL IMPACT?

Organisations working within different formal and non-formal educational environments need to face the rising challenges of developing projects, and at the same time create valuable educational experiences by incorporating specific digital instruments into the whole process of learning.

In this aspect, digital learning is a learning experience facilitated by using digital technology that gives learners more control over their time, place and path of learning. Internet and proliferation of internet access devices has given learners the possibility to learn anywhere they choose to, which means that learning is no longer restricted to a classroom. However, digital learning tools have an underestimated and at the same time significant impact on the environment due to their energy consumption and "digital pollution", which need to be taken into consideration when creating comprehensive and holistic educational experiences.

## WHY IS UNDERSTANDING ENVIRONMENTAL IMPACT OF DIGITAL TOOLS NECESSARY?

The recent COVID pandemic has accentuated the use of digital tools in different learning environments and has made it easier to engage more people on a wider scale – also through experimenting with new digital platforms and technologies (e.g. 3D experience). This has led to the increased impact of using such tools on the environment. Even though the link between digital tools and climate crisis is not obvious at first sight, recent findings show that the use of digital tools is not carbon neutral at all. Indeed, the world's collective digital carbon footprint accounts for nearly 3.7 % of all greenhouse emissions. When discussing digital learning tools, aspects such as environmental impact of video conferencing tools, appropriate use of social networks and video streaming, carbon footprint of digital gadgets etc. must also be considered. It is important then to emphasize that changing certain digital habits (which also means using tools in a different way) can lead to significantly reducing carbon footprint.

Apart from acknowledging obvious benefits of digitalization, it is necessary for organisations to maintain an intersectional vision when using and promoting digital tools. In this way, we do not only fulfil our educational responsibility but can also engage and make more people aware of environmental impacts of their digital habits.

# HOW CAN ORGANISATIONS IMPLEMENT DIGITAL LEARNING METHODOLOGIES?

In the process of selecting the most suitable instruments when preparing a workshop, an activity or a participative focus group with a specific group of participants, it is suggested to pose three specific questions:

- What added value will using chosen tool brings to the activity that is being implemented?
- What will the participants gain from the use of this technology, digital tool and interaction?
- Are selected tools inclusive and effectively engaging? Are they accessible to the whole group?

*Youth workers, educators and groups facilitators, who are experimenting with new or innovative digital tools, should also reflect on the most effective approach to ensure that the chosen tools are used in a good and ethical way.

## SOME CONCRETE ADVICE WHEN USING DIGITAL TOOLS IN THE EDUCATIONAL WORK:

- Select the tools most in line with the characteristics of the target groups.
- Avoid using digital technologies if it is clear beforehand that their only purpose is to make the workshop entertaining or more attractive. They should be implemented to ensure added value to the whole educational experience and they most certainly should not be applied just for the sake of adding them.
- When designing learning environments, the main focus should not only be on achieving certain learning objectives, but above all on their qualitative aspect, their flexibility and transferability to other contexts.
- It is advisable that digital educational technologies are used together with analogue or traditional tools from non-formal educational context, such as role play, outdoor activities, drawing, use of paper maps etc.
- Educators are suggested to reflect on possibilities to create educational experiences that can be transferred (or adapted) from digital into the real world. For example, maps that are created with online tools such as “my maps” could be integrated or “mixed” into educational experience of walking and observing the “real place of interest” as it was tracked (beforehand) on digital maps.
- Create guidelines on how to use digital learning tools in an appropriate manner that will also consider their environmental impact and subsequently lead to lowering organisations’ carbon footprint.

It is advisable that users of digital tools and creators of learning contents opt for an open approach in education – whenever possible. Using Creative Commons License and creating open courses along with trainings through free instruments such as Moodle are advised.

Several aspects of these topics could be used as starting points to stimulate discussion among educators and learners or within the organisations themselves. Some proposed topics are carbon footprint of the internet (data centres, hardware, video calls), carbon footprint of large email attachments and environmental impact of online videos.

## SOME CONCRETE TIPS FOR ORGANISATIONS AND GROUPS TOWARDS LOWERING OUR DIGITAL CARBON FOOTPRINT:

- Use alternative CO2 neutral search engine such as Ecosia.
- Check whether preferred browser or streaming platform are following carbon neutral policies and be consciousness if / when faced with "digital green washing".
- Reduce the amount of "thank you" emails.
- Reduce the number of conference calls and perform only the essential ones. Try using video conference platform with lower environmental impact such as crewdle, which is a peer-to-peer video conferencing tool.
- Turn off camera when not needed.
- Clean your email bins.
- Use a green server.
- Whenever possible, focus on creating sustainable in-person events with reduced environmental impact.

## EXAMPLES OF PROPOSED DIGITAL TOOLS:

- Spatial chat: innovative interactive video conferencing platform recommended for group work with younger people. Advisable to use it when working with a big group and wanting to make sure everybody feels included.
- Mural and Miro: interactive dashboard tools that can be used to facilitate the process of learning and collecting new ideas during group discussion.
- Genially: tool that can be used for teaching and learning via interactive learning materials.
- Canva: useful and easy-to-use tool for creating graphic and video contents, intended for individuals or groups.
- Trello Education Template: educational template model available in Trello, which is recommended for visual organisation of learning experience both for students and for educators.

## ADDITIONAL RESOURCES

- CEPS: Creative digital tools, digital learning methodologies & digital habits
- MOOC – dimpa
- OER – Open Education Resources | Making Projects
- OER – Open Education Resources | BeLearning
- Renee Obringer, Benjamin Rachunok, Debora Maia-Silva, Maryam Arbabzadeh, Roshanak Nateghi, Kaveh Madani. The overlooked environmental footprint of increasing Internet use. Resources, Conservation and Recycling, 2021; 167

## CONTACT INFORMATION

CEPS Projectes Socials
http://www.asceps.org

CEPS. Gran de Sant Andreu,
388 08030 Barcelona, Spain

Giorgio Barbato, giorgiobarbato.project@gmail.com
Mariana Pfenniger, mpfenniger@asceps.org,
asceps.org



Funded by the European Union

Informational leaflets were created as part of Beyond the tales project. The project is co-financed by the EU Erasmus program. The contents and materials made during the project are a product of the authors. The comission is not responsible for use of this information.