Wide angle

Digital Sobriety:
An Ingredient for Success in Higher Education?

In the province of Québec, one in two people report spending too much time in front of screens, a proportion that rises to 67% among adults part of the “digital” generation (18 to 25 years old). Canadians spend an average of 40% of their waking time in front of screens (NETendances, 2023, p. 9).

There is growing concern about the environmental and social consequences of hyperconnectivity. The National Assembly of Québec has also created a Special Commission on the impacts of screens and social networks on the health and development of young people (Commission spéciale portant sur les impacts des écrans et des réseaux sociaux sur la santé et le développement des jeunes), whose public hearings were held in September 2024.

Digital sobriety now appears to be a necessary shift, both to reduce the **environmental footprint** of digital technology and to address **public health** issues.

Should digital sobriety also be considered from the perspective of student success?

In France, the objective of digital sobriety is laid down in the law aimed at reducing the environmental footprint of digital technology (Loi visant à réduire l’empreinte environnementale du numérique) (adopted in 2021). This law requires institutions to raise awareness among students about digital sobriety as soon as they enter higher education, and to include eco-design in engineering training. In the wake of this law, a **partnership** was recently formed between the French Agency for Ecological Transition (ADEME), research infrastructures (INRIA and CNRS) and a community of tech players (Latitudes) to "raise awareness and train higher education in digital sobriety."

In this issue of Wide angle, ORES offers insights into the following questions:

1. What is digital sobriety?
2. Why promote it?
3. What practices can support digital sobriety?

1 What is Digital Sobriety?

A Conscious Choice

Digital sobriety is linked to the principles of “moderation” and “discernment.” This concept was first developed in response to the environmental impacts of digital technology, and aims to "make the use of digital technology compatible with planetary limits, while preserving equitable access to the benefits it generates, for our contemporaries as well as for future generations" (CEST, 2024, p. 66).

The digital sobriety approach invites us to reconsider our digital habits, to become aware of their effects and to promote uses that have fewer negative impacts. In short, it is about “**moving from a use of digital technology that has become instinctive to a use of digital technology that is conscious and thoughtful**” (Shift Project, 2020, p. 18).

While this principle can inspire changes in individual behaviours (making eco-responsible purchases, extending the lifespan of one’s devices and so on), individual actions must "resonate with a global approach" that involves "all the players in the digital value chain (governments, organizations, companies, consumers and so on)" (CEST, 2023a, 2023b). Ultimately, a societal shift toward digital sobriety requires “integrating it into the agenda of different areas of **public policy**” (Obvia, 2024, p. 35).

A Matter of Values

Sobriety is rooted in an ethical reflection on digital technology, “so that individual actions are consistent with values such as preserving the environment, fighting climate change, and ensuring the physical and mental health of populations” (CEST, 2023b).

A commitment to sobriety therefore implies **questioning certain social norms and values** that permeate the dynamics of technological innovations in our societies, such as novelty, speed, individualism and progress (in terms of growth). Conversely, sobriety promotes sustainability, slowness, community and frugality (Szilas, 2024). For many authors, the notion of digital sobriety is inseparable from the notion of “**degrowth**” (Péréa & al., 2023).

1 What is Digital Sobriety?

Some Key Concepts Related to Digital Sobriety

- **Prioritization of uses**: A collective and democratic approach to identify digital uses that must be preserved and those that must be limited, for the common good. In the absence of such a concerted approach, "difficult choices will eventually impose themselves due to the pressure linked to the scarcity of the raw materials required to produce digital technology" (CEST, 2024, p. 5).

- **The rebound effect**: A paradoxical phenomenon by which "the gains linked to optimization are either reinvested in an increased use of the more efficient technology (direct rebound), or in other technologies or resources (indirect rebound)" (CEST, 2024, p. 2). Thus, the advances of recent decades in energy efficiency and miniaturization, rather than leading to an overall reduction in energy and raw material consumption, have instead sparked a rampant increase in digital production and consumption.

- **Low-tech**: An approach that aims, “from a sustainability perspective, to question our real needs and develop solutions that are as minimally ‘‘technologized’’ as possible” to address them (Guimbretiere & al., 2022, p. 3).

- **Eco-design**: An approach that “looks at the digital service in its entirety”: hardware, software and infrastructures. Eco-designed applications, websites or software are able to work “on older devices and less efficient networks.” Eco-design also allows “using existing infrastructures for longer periods (networks, computer centres and so on) without having to replace them or add new ones” (Baton & Faubry, 2024).

2 Why Make the Shift to Digital Sobriety?

An Environmental Footprint That is Constantly Growing

Seventy-eight percent of the environmental footprint of digital technology comes from the extraction of raw materials, the manufacturing of equipment, and the construction of data centres and networks, with 21% being linked to its use (Obvia, 2024, p. 33). Streaming is responsible for 60% of data traffic worldwide (Efoui-Hess, 2019). Today, digital technology represents around **10% of the electricity consumed and 3% to 4% of GHGs in the world**, figures that are growing.

This already unsustainable trend is **exacerbated by the progression of generative artificial intelligence** (AI), which uses "30 times more energy than a classic search engine" (Leiser, 2024). Upstream, the training of AI models is particularly energy-consuming, with some releasing as much as the equivalent of the emissions of five average automobiles over their entire life (Massen, 2024).

The environmental and social impacts of digital technology also include **the reduction of biodiversity, the consumption of drinking water, human exploitation and pollution** linked to mining activities, as well as the consequences of the **export of electronic waste**.

Effects on Health

Screen use is associated with various effects on the health of populations.

Effects on **physical health**: Sedentary lifestyle, eye and musculoskeletal disorders, sleep problems (INSPQ, 2024b)
Effects on **mental health**: Self-esteem and body image issues, stress, anxiety, depression, addictions (INSPQ, 2024b)

Behavioural (lifestyle), physiological, biochemical or cognitive mechanisms are responsible for these impacts (Lemétayer, 2023). Most often, these mechanisms are interrelated, as in the case of sleep disorders, which can be caused by the encroachment of screen time on sleep time, by the effects of blue light and by cognitive overstimulation.

Research also shows the **psychosocial effects** of "over-investment in online relationships or activities," which can lead to relationship problems in all spheres of life (family, work, school) (Lemétayer, 2023).

2 Why Make the Shift to Digital Sobriety?

Effects on Learning

Digital distraction is a barrier to learning in school settings. Studies indicate that the mere fact of having a smartphone on your desk impairs attention and comprehension, and increases the level of anxiety of students in class (Huey & Giguere, 2023). A French study, based on 1,600 hours of observation of higher education students, shows that the use of digital devices in class is mostly devoted to activities unrelated to the course (social media, games and so on) (Shift Project, 2020, p. 100-101).

The state of research, recently synthesized by the INSPQ, shows that in the classroom, "digital multitasking is detrimental to learning" and that "the presence of cell phones interferes with [certain] cognitive skills" (INSPQ, 2024a, p. 26-27). The studies collated by the INSPQ also tend to show that reading on paper allows for a better understanding of the content than reading on digital media.

What is Attention Economy?

Social networks and digital platforms are deliberately designed to monopolize the attention of users for as long as possible: incessant notifications, infinite scrolling of pages, automatic reading, content that stimulates emotions, filter bubbles and so on. This business model of digital giants, which is increasingly known, is believed to encourage compulsive consumption, even digital addiction, and is not unrelated to the recent development of psychosocial pathologies such as FOMO syndrome (fear of missing out) or nomophobia (the obsessive fear of being separated from one's phone) (Alombert & Kokshagina, 2022).

Attention can be seen as a “critical cognitive resource, in other words limited,” (Forestier, 2023) that is important to care for. From this point of view, “attentional sobriety” is intrinsically linked to digital sobriety.

3 What Practices Support Digital Sobriety?

Developing Sobriety Literacy

The notion of sobriety, and more broadly all approaches linked to “the responsible use of digital technology,” is increasingly being addressed in the public space and in research. However, it remains quite rarely implemented in the world of education, particularly in higher education (Descamps & al., 2022). The notion of digital sobriety is, to date, generally absent from digital skills frameworks.

What would constitute a skill in digital sobriety?

- An **understanding of the environmental and social impacts** of digital technologies;
- **Knowledge of the actions required** to reduce the environmental footprint of digital technology. A number of actions are, to a certain extent, within the reach of individuals; for example, extending the lifespan of their devices, sharing them, limiting streaming. Other actions must rather be deployed at the political (legislative frameworks) or institutional level (opting for free software and open licenses, limiting the collection, storage and exploitation of data, promoting eco-designed digital services).
- A **critical reflection** on the anchoring of hyperconnectivity in social and cultural norms that are difficult to undo. The challenge, according to the Observatoire sur les impacts sociétaux de l’IA et du numérique, is to "make sobriety socially desirable, through collective co-construction approaches using stimulating storytelling" (Obvia, 2024, p. 35).

*Only up to a certain point, as barriers such as planned obsolescence of devices, software obsolescence (e.g., the impossibility of making updates), economic obsolescence (e.g., when the price of repair exceeds the price of a new device) or psychological obsolescence (the attraction of new devices, notably generated by advertising) considerably reduce the capacity of individuals to make sober choices (CEST, 2024, p. 38-39).

The 3RV principle (reduction at the source, reuse, recycling, valorization), included in the Politique québécoise de gestion des matières résiduelles, also applies to digital consumption. This model must be interpreted based on a hierarchical logic, the first terms prevailing over the following ones. A number of authors have added other “R”s to this model:

- Reflect (on one’s actual needs);
- Reject (unnecessary equipment or service);
- Reduce;
- Repair one’s devices;
- Reuse;
- Recycle (or add value).

3 What Practices Support Digital Sobriety?

Institutional Stakeholders can Take Action

For higher education institutions, "orienting technological choices toward digital sobriety" constitutes a major challenge (Vahl, 2023, p. 15). Implementing digital sobriety principles on an **institutional scale** requires, among other things (Vahl, 2023, p. 15):

- The involvement of administrators at the highest institutional level;
- A strategic vision in the short, medium, and long term;
- The designation of a person responsible for such implementation and intermediaries within the institution;
- An operating budget;
- Relevant indicators;
- An evaluation process;
- A communication and training strategy.

Within institutions, a **concrete commitment** to digital sobriety can take different directions, for example through:

- A policy for sharing equipment (CEST, 2024, p. 87);
- The integration of environmental criteria into the purchasing policy;
- A mandate entrusted to libraries which, "as digital resource centres or library of things (loan, mediation, collective provision of infrastructures, terminals and resources), are or must become keystones of digital sobriety and its achievement" (Feurtet, 2023);
- Support for sobriety initiatives within institutions or in the community (e.g., repair cafés, Fab labs, low-tech practices, pedagogical innovations around digital sobriety and so on);
- Training to strengthen digital sobriety literacy for the entire university or college community.

For More Information

Read the report of the Commission de l'éthique en science et en technologie (CEST) on the imperative of digital sobriety.

Monitor the publications of the Observatoire sur les impacts sociétaux de l'IA et du numérique (OBVIA), around the research axis of Digital sobriety and socio-ecological transition.

Look into Chemins de transition, a project co-led by Université de Montréal and Espace pour la vie that combines foresight as well as participatory and systemic approaches to the socio-ecological transition, particularly the digital challenge.

Consult the works of Léa Mosesso, recipient in 2024 of a prize from the Conseil national du numérique (France) for her thesis "Vivre avec un smartphone obsolète."

Browse the essays written by students who participated in the 24h (dé)connecté project in the fall of 2020, at UQAM's School of Media.

Resources and Tools to Discover

The Digital collage, a workshop to better understand the environmental challenges related to digital technology.

A training session on the "low-tech" design approach in digital technologies, developed by Stéphane Crozat, Teacher-Researcher at Université de Technologie de Compiègne (UTC).

A guide to the eco-design of digital services, produced by the French association "Designers Ethiques."

A video as well as resources on cyberaddiction, produced by UQAM's Boîte à outils numériques.

The PAUSE initiative, which offers resources and proposes events to prevent the risks related to hyperconnectivity.

The Ecoist Club, a "social impact project" that offers workshops and training to raise awareness about issues related to digital ecology.

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