



The contribution of the LINE laboratory to education on prudent uses of digital technology through the prism of educational innovation

Authors
Laurent Heiser[a], Ana Chiaruttini[a]

[a] Université Côte d'Azur, URE LINE, INSPE, Nice, France

I. Context and Issues

Climate change is leading to a very strong diffusion of information on responsibility and prudence. Many people are currently advocating for education on prudent technology use. In this context, at the Laboratoire d'Innovation et Numérique pour l'Education (LINE), a research unit that works in the field of Educational Sciences, we are developing a reflection on education for, by and about more responsible uses of digital technology (Descamps, Temperman, De Lièvre, 2022). Thus, our research unit is developing a reflection on innovation in the educational field that questions both the processes of acceptance and integration of digital tools and the conscious change that shapes new teaching and learning practices.

We are in fact faced with a tension: on the one hand, to encourage the development of digital education in the perspective of a transformation of the contents and modalities of teaching and training, and on the other hand, the need to raise the question of digital prudence, to make uses more responsible and to develop a critical and creative reflection on digital technology that integrates this dimension. For us, prudence implies an awareness of the educational stakes in order to educate learners to a strong conception (Pellaud and Eastes, 2020) in order to think about their uses with a systemic and creative thinking. Considering the development of educational digital uses in this way allows us to overcome the tension (development-prudence) and to design conscious uses. Consequently, it is a question of developing the potential of digital technology while educating people to use it in a prudent and reasoned way, making choices that are relevant to the teaching and training issues at stake. In other words, we believe that there can be no development of digital education without addressing the issue of prudent, responsible and ethical uses.

In order to take this dimension into account, our research activities develop a mixed methodology that allows us to articulate the reflection on digital uses in a sober context with our critical approach to innovation.

Our aim is to understand how to accompany innovation and practice transformation actions while at the same time teaching prudence.

II. Areas of Work

Our contributions focus on recent research developed within LINE that contributes to a critical approach to innovation (Dias-Chiaruttini, 2021).

II.1. Documentation of Practices

This dimension consists in identifying, observing and analysing emerging activities through the prism of their transformative potential. We know, in this respect, that several FabLabs already offer extracurricular activities and are fairly representative of a shared culture around the idea of useful, sustainable and accessible technology (Parmentola et al., 2022). The scientific mediation community, especially in our region, is particularly fertile for building a reflection on digital prudence education and therefore to identify, observe and analyse their transformative potential. Finally, the didactic framework of these activities on and for prudence and vigilance in digital uses could be put to the test in the classroom, as envisaged, for example, by some researchers at LINE (Heiser, Romero, De Smet, Faller, 2020).

II.2. Critical Understanding

In the context of sobriety, we analyse as closely as possible the traces of the actors (teachers, mediators, students or participants) by reconstructing their lived experience (Heiser, 2019). And the transformative process is played out precisely during the lived experience, which also refers to a reflection on teachers' practices and how to accompany their professional development (Brunel and Heiser, 2019). From this point of view, we can accompany the training of stakeholders, connecting it with research and ensuring that we develop their critical understanding of the uses of digital technology in a context of prudence.

II.3. Ethical dimension

This is a question of taking into account certain intrinsic characteristics of digital uses, to better connect the question of prudence with that of awareness of the finitude of the planet. As Villalba (2016) points out, it is a matter of making people aware of the problem (i.e., certain unreasonable uses of digital technology), of the cost, of the inequalities and of certain deleterious uses (Courbet et al. 2020) in order to bring individuals to an accepted prudence. This axis is concretised by an inventory of learning, practices and attitudes related to this unconstrained prudence.

These three axes constitute the framework of our reflection through the prism of innovation. They allow us to address the issue of climate change by highlighting behavioural changes thanks to the specific light of the educational science

III. Perspectives

Within LINE, we wish to create an observatory of pedagogical practices (which necessarily leads us to be interested in their implementation within cultural and scientific mediation), allowing for the documentation of emerging practices. We plan to develop research-designs to conceive activities on the prudence and vigilance of the uses of digital technology by specifying that they are controlled activities and thus specifically planned setting up research.

In particular, we analyse existing pedagogical devices through several specifically adapted methodological protocols: non-participant observations, interview grids around themes such as the design of pedagogical sessions related to the digital ecosystem as a tool/object of study/

subject to be regulated, or the use of camera glasses, which allow for subject feedback on his or her own experience (Heiser, 2019).
These methodological tools allows us to develop an understanding of the subject and to verify the efficiency of pedagogical activities aimed at teaching digital prudence.

We are thus part of a systematic process to:

- **Observe** pedagogical practices related to responsible digital technology (low tech, digital prudence)
- **Create and test** pedagogical practices related to digital responsibility by evaluating creativity (power to act in a world facing climate change)
- **Circumscribe** the lived experience of participants during transformative activities
- **Modell learning-by-doing approaches** from a didactic point of view
- **Analyse** the innovative character of pedagogy-by-doing using the dynamics of work within the LearningLab network of the Inspé de Nice
- **Transfer** models of experiences in the field of transformative education and Education for Sustainable Development (ESD)
- **Recommend** professional practices and rules that take into account the ethical aspect in order to promote the acceptability to stakeholders

On the basis of this reflection and the research activities carried out, we believe that we can enrich Université Côte d'Azur's contribution to the political, social and scientific debate on the stakes of education in the prudent use of digital technology that does not slow down the transformation of education and training, but rather makes the participants responsible for their use and efficiency.

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