Educational Sciences in the 21st Century and Digital Technologies

COURSE CONTENT:

In the **first unit**, we discuss the factors influencing the use (or lack thereof) of digital technologies in education, along with various perspectives and stakeholders (e.g., the private sector like telecommunications and IT industries, views focused on optimizing behaviorist practices, etc.). Core educational models are analyzed, with emphasis on those integrating digital technologies, while also highlighting the contributions of Educational Sciences to society and educational systems over time. This unit also covers the perceptions surrounding the use of digital technologies, including the concepts of "added pedagogical value," innovation, and "deep access to structure." Additionally, it examines the application of digital technologies in formal, informal, and non-formal education.

The **second unit** addresses the educational priorities for the 21st century. Education and training systems, both at the European and national levels, often adopt the term "basic skills" to design, organize, implement, and evaluate educational programs, not only at the school level but also within informal and non-formal settings. One of the greatest challenges at both national and European levels is, on one hand, the lack of a commonly accepted and binding conceptual framework for what truly constitutes the essential skills for the 21st century, and on the other, the absence of strategy and coherent policies for fostering and assessing these skills. In this context, we will discuss Transversal Skills or Soft Skills, which relate to personal development and are difficult to quantify but are evaluated qualitatively (e.g., organizational skills, communication skills, creativity, collaborative skills, problem-solving skills, leadership skills, etc.). Furthermore, there is a global emphasis on skills related to workforce participation, employability skills, and the management of personal and social life (life skills). This broad category of skills is known as transversal skills. This term has largely replaced the older term "transferable skills" (Cedefop, 2008) and refers to the skills individuals possess that relate to jobs and professions. Generally, these are skills acquired in a specific context or to address a particular situation/problem and can be transferred to other contexts.

The **third unit** presents activities that provide added pedagogical value through digital technologies. Discussions cover: a) the potential for using multiple symbolic or semiotic representations, such as verbal and visual ones, combining them, and handling them dynamically; b) constructing, deconstructing, testing, experimenting, and simulating models; and c) computational or algorithmic thinking, recurring thought and design patterns, programming for all, and collaborative problem-solving.

Finally, in the **fourth unit**, examples of activities with added pedagogical value are designed and implemented—teaching scenarios—with a focus on digital tools, educational activities, methods, practices, and expected learning outcomes concerning students' attitudes, knowledge, and skills, as well as the interactions between students, educators, and digital structures.