

# DIGITAL PEDAGOGY, A NEW TREND IN EDUCATION

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**Abstract.** This article explores the challenges and opportunities that digital pedagogy presents for educators. Key challenges include adapting to new technologies, managing digital diversity among students, maintaining student engagement in online environments, and developing effective digital assessment methods. Conversely, digital pedagogy offers significant opportunities, such as access to a wide range of educational resources, personalized learning experiences, enhanced collaboration and communication, and the development of essential digital skills for students. By embracing and effectively integrating digital technologies, educators can enhance the learning process and better prepare students for a digital future.

**Keywords:** digital pedagogy, teaching and learning methods, digital tools, new technologies, teachers and students

## **Introduction**

In the digital era, education faces significant transformations, and digital pedagogy becomes an essential component of the educational process. This not only changes the way information is transmitted and assimilated, but also redefines the role of teachers. In this context, digital pedagogy represents both an opportunity and a challenge for teachers.

Technology has become an integral part of our daily lives. Education is no exception to this trend, and digital pedagogy has become a controversial or adulated subject, both by teachers and other actors, parents or students.

There are voices among psychiatrists who warn against the use of the computer in the teaching process, especially at young ages, because digital environments create addiction and deprive them of sleep. They damage memory, reduce mental activity and therefore are not indicated for stimulating learning in the school environment. [8] The use of digital means in the classroom should be done with caution, without going overboard. Their use must be accompanied by practical, interactive activities.

Digital pedagogy refers to the use of contemporary digital technologies in teaching

and learning. Digital pedagogy is not exactly about using digital technologies for teaching, but rather about approaching those tools from a critical pedagogical perspective. This means that the use of digital tools will be done carefully, to decide when and how digital tools can be used, taking into account the impact of digital tools on learning. The ability to select technologies that will improve teaching and learning – is more important than ever. Digital pedagogy empowers teachers to select the technology that will ensure student learning outcomes are met, giving teachers the knowledge and skills to develop your own digital pedagogy.

Digital pedagogy can be applied in online, hybrid, and face-to-face learning environments and specifically focuses on using technology to break down learning barriers and enhance student learning experiences.

Its existence dates back to the earliest use of digital tools in classrooms. However, a greater awareness of the need for digital pedagogy has emerged only in the last decade in recognition of the changing relationship between students and computers, handheld (small electronic device designed to be easily held and used in the hand), devices, social networks and more. This changing portrait of students' habits indicates a serious need for critical approaches from instructors regarding the use of technologies to engage their students, regardless of the subject matter or mode of classroom instruction.

Effective digital pedagogy thus begins not with a static list of tools, but with fundamental learning goals and strategies, supplemented by the appropriate technology to reinforce student outcomes and goals.

### **Theoretical framework**

Digital pedagogy refers to the study of how to teach using digital technologies. This involves understanding the learning theory associated with digital practices, selecting appropriate technologies for learning objectives, and using these technologies effectively in the classroom. Digital pedagogy is not just about using technology as an auxiliary tool, but about integrating it into the learning process to change how we learn and what we learn.

In other words, digital pedagogy refers to the use of technology to facilitate the

learning process. This includes using online platforms for teaching, using educational games to enhance understanding of concepts, and using social media to encourage collaboration and communication between students.

Pedagogical orientation can change when digital technologies are integrated into teaching. The use of digital technologies in teaching and learning can lead to some learners taking more responsibility for their own learning, can increase collaboration and teamwork. It also enabled teachers to design learning environments that support pedagogical practices that involve student collaboration, problem solving, and knowledge construction in a way that is personalized to the class of students. [9].

The European Commission, within the Joint Research Center (JRC) has developed the *European Framework for Educators' Digital Competence* (DigCompEdu, [13]) which describes digital competence for educators. It provides a general reference framework to support the development of specific digital skills for teachers in Europe.

DigCompEdu details 22 competencies organized into six areas: professional commitment; digital resources; teaching and learning; evaluation; empowering learners; facilitating the digital competence of students. (fig.1, fig. 2)

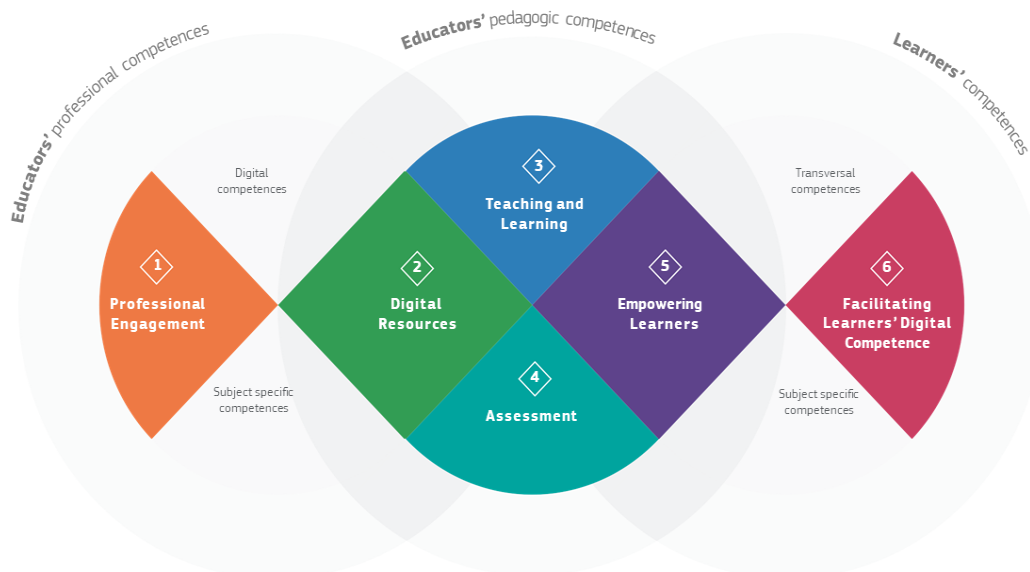


Figure 1

European Commission, Digital Competence Framework for Educators (DigCompEdu),  
<https://ec.europa.eu/jrc/en/digcompedu>

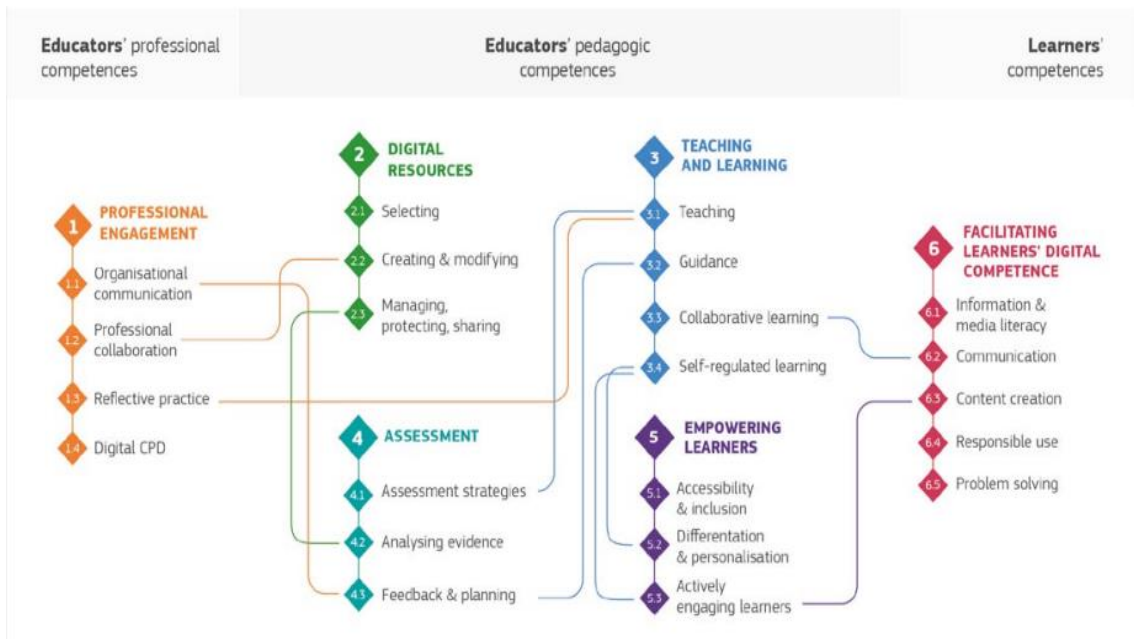


Figure 2 Visual illustration of DigCompEdu Framework

### The challenges of digital pedagogy for teachers

Adopting digital pedagogy can be challenging for teachers for several reasons.

- First of all, it requires a change of mentality. Teachers must move from a traditional role of information provider to a role of facilitator of learning.
- Second, teachers must familiarize themselves with new technologies. This can be difficult for those who are not comfortable with using technology.
- Third, teachers must be prepared to deal with privacy and security issues that may arise in the online environment.

The key stages for the construction of digital pedagogy by education practitioners can be considered: knowledge of the curriculum and the skills required to be developed in the respective discipline; actively imparting knowledge and understanding of quality digital pedagogy practices; training and data collection; developing digital skills; self-improvement; sharing own experiences and best practices. This structured approach helps educators integrate technology into teaching, emphasizing continuous improvement and informed practices in digital education.

For the teaching staff, digital pedagogy implies: pedagogical orientation, pedagogical practices and digital pedagogical skills.(fig. 3)

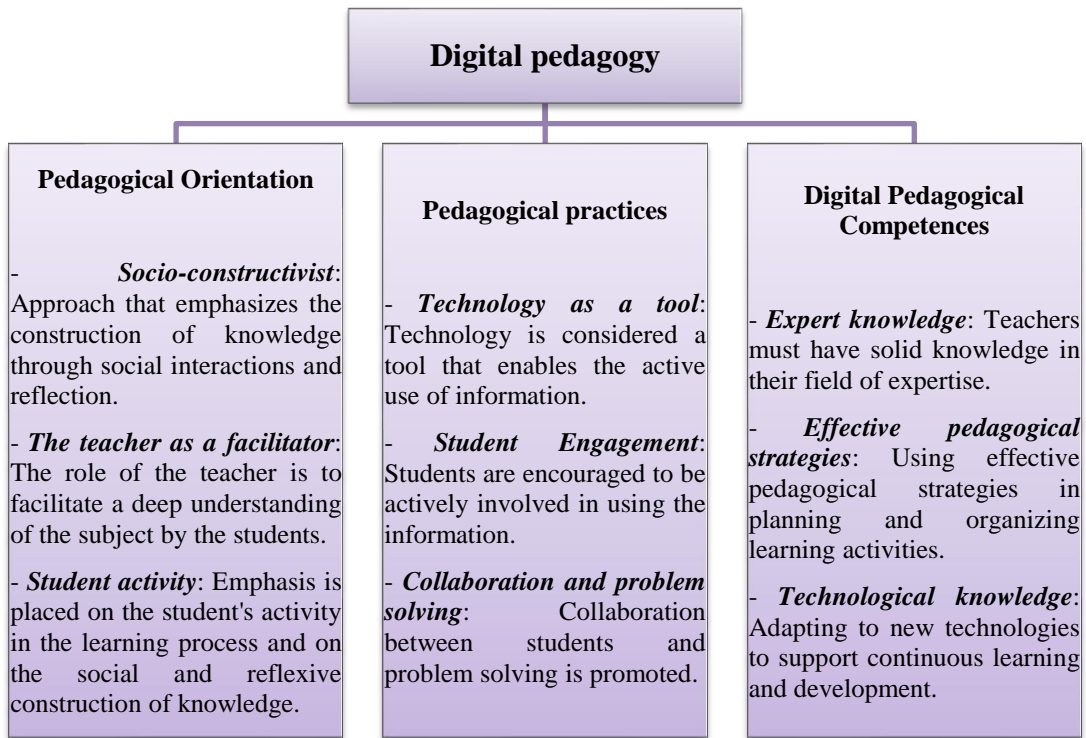


Figure 3 Digital Pedagogy

Pedagogical orientation can change when digital technologies are implemented in teaching. Pedagogical orientation is generally divided into two types: constructivist pedagogical orientation (collaboration, student-centered activities, active participation of students in discourse; technology is considered a cognitive tool that supports student learning) and traditional pedagogical orientation (teacher-centered activities, (communication is mostly teacher-to-student; technology is used to support teacher-centered activities) [6]. Both constructivist and socio-cultural theories facilitate the integration of new technologies in the classroom. Therefore, digital pedagogy includes more than the teacher's perspective on teaching and learning, it will also include the students' perspective. To apply digital pedagogy, the roles of the teacher and students will change. The teacher's role is to work as a facilitator, using student-centered teaching approaches and encouraging students to learn through collaboration.

Regarding teacher-centered pedagogies and student-centered pedagogies, there are some differences. Teacher-centered pedagogies are based on content knowledge, theory, and direct instruction, while student-centered pedagogies involve hands-on learning, where skills are developed through collaboration. Teacher-centered pedagogies are not

necessarily less effective than student-centered pedagogies; both having useful aspects (pedagogical history has proven this), and teachers should find a balance between them when using digital technologies in teaching.

The pedagogical orientation is reflected in the digital pedagogical practices addressed, in an interactive learning environment, rich in information and technology, in which students can engage in learning activities, with technology integrated into the didactic processes. Learners should engage in independent learning activities, but also in collaboration with peers, so that they themselves become creators of knowledge through interaction with the environment.

Having digital pedagogical skills implies the integration of digital technologies in teaching. Educators' digital competencies include the knowledge, skills, and attitudes that connect technical expertise with pedagogical goals to improve student learning.

The implementation of digital pedagogy refers to the use of various educational applications, tools and platforms in the didactic process, with the aim of complementing traditional learning, offering interactive content, virtual laboratories, quizzes/interactive assessment, educational games, resources and digital content for pupils and students, as well as virtual spaces for carrying out various educational activities.

The Action Plan for Digital Education – Action 1 [11] identifies the specific challenges of each EU Member State raised by the digital transformation of their education and training systems and suggests ways to overcome them.

As examples of good practices in the use of digital tools in teaching activity, we can mention digital platforms that allow the sharing of various interactive materials, or platforms that allow distance learning, tutoring/ educational mentoring.

*The Digital Education Action Plan (2021-2027)* sets out a shared vision for high-quality, inclusive digital education. This plan aims to support the adaptation of Member States' education and training systems to the digital age and sets out two strategic priorities and fourteen actions to support them:

Priority 1: Fostering the development of a high-performance digital education ecosystem. More actions by the European Commission are expected to be implemented, such as the structured dialogue with Member States on digital education and skills, the

Council recommendation on key enablers for the success of digital education and training, and others.

Priority 2: Developing digital skills and competences relevant to digital transformation.

The Digital Education Action Plan is an enabler for the realization of a European Education Area, contributing to the achievement of the objectives of the Skills Agenda for Europe, the Action Plan on the European Pillar of Social Rights and the "Digital Compass 2030: The European Model" for the digital decade"[10].

To ensure equal access to technology for all students, some strategies could be implemented at the institutional/governmental level such as: infrastructure investments (high-speed Internet connection and adequate technological infrastructure, both in schools and for the school population); teacher training; creation of open educational resources (Open Educational Resources (RED/OER) are learning materials that can be used, adapted and distributed for free); promoting digital literacy; ensuring and educating in the spirit of online security.

In Romania, through the *SMART.Edu - Strategy for the digitization of education in Romania 2021 – 2027* [14], the Ministry of Education and Research proposed a call to action for a closer cooperation of all interested factors, starting from the following priorities: Accessibility, Connectivity, Community , Digital Educational Ecosystem, Innovation and Sustainability. The adaptation of the education and training system to technological evolution is a complex process, necessary for the preparation and improvement of human resources and an essential element of the development, modernization and innovation of society. The use of new digital technologies is the direct way to make school more attractive for students, more adapted to their needs and lifestyles, more effective in developing skills, generating lifelong education.

## **Conclusions**

Digital pedagogy represents an extraordinary opportunity for improving the learning process. However, it is essential that teachers are prepared to face the challenges involved. With appropriate training and ongoing support, teachers can successfully use technology to improve learning outcomes.

Digital education can bring some benefits for pupils and students, such as: efficiency in the learning process (technology can help personalize learning, adapting to the pace and individual learning style); accessibility; various educational resources (videos, educational games, simulations); developing digital skills; creativity and innovation (digital tools allow educational content to be customized creatively by each teacher or student. These benefits demonstrate the enormous potential of digital education to improve learning and prepare students and pupils for an increasingly digitized world.

As disadvantages of digital education, we can list: the quality of information found online can be erroneous, including the information provided by ChatGPT; online security; access to technology is not yet total, there are students from disadvantaged backgrounds; lack of optimal connections to the Internet network; the authenticity of the work makes it difficult to verify authenticity; the costs of preparing/disseminating an online course can be more expensive and less effective than a traditional course; the lack of direct interaction can lead to psycho-emotional conditions. In addition, spending too much time in front of screens can generate physical, mental, emotional, social health conditions on which clinical studies have not yet been done, therefore there is no evidence.

When it is claimed that in schools one learns better thanks to digital environments, one should not forget that there is, at least for now, no proof in this sense. Instead, there are numerous studies that show that excessive computer technology has a negative effect on education. If the performance of students who learn with and without computers is measured, a negative effect is observed for the former.

In conclusion, digital pedagogy is a challenge for teachers, but it is also an opportunity to reinvent the way education is delivered and make learning more relevant and engaging for students.



## Bibliography

1. Ahern, S., 2020, Developing your Digital Pedagogy, <https://blogs.ucl.ac.uk/digital-education/2020/03/06/developing-your-digital-pedagogy/>
2. Chai, Ching & Lim, Cher Ping & Tan, C.M.. (2016). Future Learning in Primary Schools: A Singapore Perspective. 10.1007/978-981-287-579-2. [https://www.researchgate.net/publication/350584811\\_Conceptualizing\\_dimensions\\_and\\_a\\_model\\_for\\_digital\\_pedagogy](https://www.researchgate.net/publication/350584811_Conceptualizing_dimensions_and_a_model_for_digital_pedagogy)
3. Crouch, Vanessa, Richardson, R., Ferguson, M., (2020), Developing digital pedagogy skills and knowledge, [https://www.teachermagazine.com/au\\_en/articles/developing-digital-pedagogy-skills-and-knowledge](https://www.teachermagazine.com/au_en/articles/developing-digital-pedagogy-skills-and-knowledge)
4. Garber-Pearson, R., Chin Roemer, R., Keeping Up with... Digital Pedagogy, [https://www.ala.org/acrl/publications/keeping\\_up\\_with/digital\\_pedagogy](https://www.ala.org/acrl/publications/keeping_up_with/digital_pedagogy)
5. Junco, R. (2014). "iSpy": Seeing What Students Really Do Online. *Learning, Media and Technology*, 39(1), 75-89, <https://www.learntechlib.org/p/153853/>.
6. Looi, C. K., Sun, D., Seow, P. și Chia, G. (2014), Enacting a technology-based science curriculum across a grade level: The journey of teachers' appropriation, <https://www.sciencedirect.com/science/article/abs/pii/S0360131513002911>
7. Punie, Y., editor(i), Redecker, C., Cadrul european pentru competența digitală a educatorilor: DigCompEdu , EUR 28775 EN, Oficiul pentru Publicații al Uniunii Europene, Luxemburg, 2017, ISBN 978-92-79-73718- 3 (tipărit), 978-92-79-73494-6 (pdf), doi:10.2760/178382 (tipărit), 10.2760/159770 (online), JRC107466.
8. Spitzer, M., (2020), *Demența Digitală. Cum Ne Tulbură Mintea Noile Tehnologii*, Humanitas, Bucharest
9. Väättäjä, Janne & Ruokamo, Heli. (2021). Conceptualizing dimensions and a model for digital pedagogy. *Journal of Pacific Rim Psychology*, [https://www.researchgate.net/publication/350584811\\_Conceptualizing\\_dimensions\\_and\\_a\\_model\\_for\\_digital\\_pedagogy](https://www.researchgate.net/publication/350584811_Conceptualizing_dimensions_and_a_model_for_digital_pedagogy)
10. How Digital Learning is Changing the Face of Education?, <https://www.skoolbeep.com/blog/how-digital-learning-is-changing-the-face-of-education/>
11. European Commission, Planul de acțiune pentru educația digitală – Acțiunea 1, [Planul de acțiune pentru educația digitală – Acțiunea 1 | European Education Area \(europa.eu\)](https://ec.europa.eu/education/plan-digital-action-1)
12. European Commission, Planul de acțiune pentru educația digitală (2021-2027), [Planul de acțiune pentru educația digitală \(2021-2027\) | European Education Area \(europa.eu\)](https://ec.europa.eu/education/plan-digital-action-2021-2027)
13. European Commission, Digital Competence Framework for Educators (DigCompEdu), <https://ec.europa.eu/jrc/en/digcompedu>
14. MEC, (2020), Strategia de Digitalizare a Educației din România 2021-2027 - SMART-Edu, lansată în consultare publică până în data de 15 februarie 2021, [Strategia de Digitalizare a Educației din România 2021-2027 - SMART-Edu, lansată în consultare publică până în data de 15 februarie 2021 | Ministerul Educației](https://www.mec.gov.ro/strategia-de-digitalizare-a-educației-din-românia-2021-2027-smart-edu)
15. What is a digital pedagogy and why do we need one?, Oxford University Press, [https://www.oup.com.au/media/documents/higher-education/he-samples-pages/he-teacher-ed-landing-page-sample-chapters/HOWELL\\_9780195578430\\_SC.pdf](https://www.oup.com.au/media/documents/higher-education/he-samples-pages/he-teacher-ed-landing-page-sample-chapters/HOWELL_9780195578430_SC.pdf)