Digital Education in Romania and Funding Programs

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Abstract

Digital education has become a central topic of interest in Romania's pre-university system, especially following the COVID-19 pandemic, which necessitated an urgent and widespread transition to online learning formats. This shift exposed both the advantages and limitations of remote digital instruction. Among the most significant challenges identified during this period is the insufficient preparedness of teaching personnel in the effective and pedagogically sound use of digital technologies. As technology increasingly penetrates all aspects of education, the need for continuous professional development among teachers emerges as a fundamental pillar for ensuring successful digital integration in schools.

Key words: digital education, digital skills, digital technology
J.E.L. classification: H52, I18, I21, I29

1. Introduction

The European Union and the Ministry of National Education of Romania have implemented various projects and initiatives to support the continuous training of teachers in the field of digital education.

The digitalization of education is a necessity of our days to ensure successful education. Even outside the context of the pandemic, digital education has become, with each passing year, a growing need for both teachers and students. However, the pandemic has sharpened this need and brought it to a vital level for any society and for any educational systems in the world.

In recent years, a major change has occurred in the way our schools approach technology. The transformation of the educational process and the evolution towards the digital school requires ensuring access to digital study tools for students and teaching staff, in an environment that allows collaboration and efficient communication between all parties involved.

Digital education implies, aside from, a set of knowledge that an individual must have regarding the use of a digital system, that is, to be able to use its minimum functionalities. On the other hand, digital education often refers to digital methods that replace the classic methods that education has always used.

In the classroom of the future, teachers and students use intuitively and in detail all the functions and resources of top equipment and technology, for attractive and efficient teaching-learning-assessment processes. The emergence of easier-to-use and more accessible mobile devices and services, along with the desire to adapt education to the generation of "digital" children, with completely new expectations regarding the educational process, has led to a significant change in the way the act of learning is understood and practiced at school. Instead of using technology only as an additional tool to traditional teaching and learning means, many schools are using technology to positively influence the educational act.

Moreover, instead of using it before or after classes, many teachers are using technology during classes to stimulate interaction with and between students and achieve better results.

Interactive lessons make learners want to actively participate in class. To keep up with such a generation of children and adolescents, teachers must be open to change. Students who use digital technology to learn become more involved in the process and are more interested in developing their knowledge base, perhaps without realizing it, because they learn in an active, engaged and involved way.

Since digital learning is much more interactive, easier to remember and assimilate than bulky textbooks, we can say with certainty that digitalization represents a better context, which offers a broader perspective and much more attractive activities than traditional teaching methods. This helps students connect better with the study materials. Digital tools and technology provide joy to children, as well as numerous benefits in terms of the child's cognitive development.

Thus, classroom lessons are more effective, emphasizing the development of subject matter through discussions and engaging in activities that are based on communication and cooperation between students. Helping children think outside the traditional and rigid framework of learning, through digital tools and methods, stimulates their creativity and gives them a sense of confidence in their own abilities.

Digital learning not only allows students to access more and more information, but they can also ensure that the information is adapted to their specific needs. The ability to help each student learn in the most effective way is the most important benefit of digital learning.

Digital tools and technology give teachers the chance to quickly share information with other teachers, in real time. By embracing digital devices and connected learning, classrooms around the world are enhancing their learning skills, educational experience and communication.

Digital education has a number of advantages that make it recommended for implementation in schools in Romania, this process is still under development, facing numerous challenges, but also benefiting from important opportunities by accessing national and European funding programs.

Current state of digital education in Romania

Romania has made progress in integrating technology into education, but lags behind the European Union average in terms of digital skills and school infrastructure. The main challenges are:

- Lack of IT equipment in schools, especially in rural areas.
- Low digital skills of teachers.
- Unequal access to the internet and digital technologies for students.
- Lack of digital content adapted to the national curriculum.

However, numerous public and private initiatives contribute to the modernization of the education system.

2. Theoretical background

Digital education encompasses more than simply having access to technological devices; it requires the cultivation of digital literacy, the ability to engage with digital systems, and the integration of these tools into effective pedagogical practices. Scholars emphasize that digital education is not merely a substitute for traditional instruction but represents a paradigmatic shift in educational methodology (Bădescu, 2020, p.41).

The "classroom of the future" envisages both teachers and students confidently utilizing advanced devices and digital platforms for instruction, assessment, and feedback. The proliferation of user-friendly mobile technologies, coupled with a generation of learners born into the digital era, has redefined educational expectations and methods (World Bank, 2021, p.87).

Many contemporary schools are moving away from viewing digital tools as supplementary and instead integrate them centrally into the learning process. Technology is now increasingly used during lessons—not just before or after—to foster student interaction, increase engagement, and improve performance (European Commission, 2020a, p.12).

Interactive digital lessons have shown to enhance students' willingness to participate actively in class. Educators, therefore, are compelled to adapt their teaching approaches to align with the expectations of digitally native learners. When students learn through engaging, interactive media, they tend to become more involved and retain information more effectively.

Compared to traditional methods reliant on printed textbooks, digital learning often proves to be more memorable and stimulating. By offering richer visual and multimedia content, digital tools create more engaging experiences that facilitate deeper understanding and connection to the material.

Moreover, digital education empowers learners to access personalized content tailored to their needs. The most significant advantage remains the flexibility to adapt to different learning paces, styles, and contexts—an essential factor for inclusive education.

For teachers, the use of digital platforms provides opportunities for real-time collaboration with peers, enabling continuous exchange of best practices and co-creation of educational resources. Thus, digital education not only benefits students directly but also enhances the professional ecosystem in which educators operate.

Despite its potential, the implementation of digital education in Romania still faces numerous obstacles—limited infrastructure, inconsistent digital content, and varying levels of teacher readiness. These are some of the critical areas that national and European programs attempt to address.

3. Research methodology

This research is based on qualitative content analysis and documentary analysis of Romanian and European strategies, initiatives, and funding programs related to digital education. A special focus is placed on national programs like PNRR and POEO, as well as international collaborations under Erasmus+ and Digital Europe. To support the digital transformation of Romania's educational system, multiple funding streams have been established, including:

3.1 National Recovery and Resilience Plan (PNRR)

This strategic funding mechanism allocates over 1 billion euros to education, with a substantial portion dedicated to:Equipping educational units with IT equipment, smart laboratories and digital furniture.

- Training teachers in digital literacy
- Equipping schools with digital infrastructure (computers, smart labs, digital furniture)
- Developing a centralized digital education platform for open educational resources, online courses, and adaptive learning tools

3.2 Operational Program for Education and Employment (POEO) 2021–2027

This program includes measures for:

- Modernizing education through digital tools
- Combatting school dropout via digital monitoring and learning systems
- Training educators and students in the use of digital platforms

3.3 Erasmus+ and Digital Europe Programs

- Erasmus+ enables mobility and partnerships, including projects focused on technology in education
- Digital Europe supports projects for advanced digital skills and innovation in education

3.4 Local and Public-Private Partnerships

At the local level, some city halls or county councils implement programs for the digitalization of schools. In addition, private companies (e.g. Google, Microsoft, Orange) support digital education through:

- Device donations
- Teacher/student training sessions
- Free access to educational software
- Examples of notable initiatives

3.5 Notable National and International Initiatives

- **Digital Education (Ministry of Education)**: A national repository of digital learning guides
- **Digitaliada (Orange Foundation)**: Focused on rural digitalization and access

- **School in a Suitcase (World Vision)**: Offers mobile education kits and teacher training in under-resourced areas

4. Findings

The qualitative analysis of Romania's digital education landscape reveals several important observations:

- **Urban-Rural Divide**
  Students and teachers in rural regions face greater challenges in accessing educational technology and professional development opportunities, perpetuating educational inequality.
- **Impact on Learning Outcomes**
  Schools that have effectively implemented digital education methods report higher levels of student engagement and academic performance.
- **Infrastructure Deficiencies and Skill Gaps**
  Key barriers include:
  Inadequate IT infrastructure (especially in rural areas)
  Low digital competence among teaching staff
  Limited access to fast internet
  Insufficient alignment of digital materials with the national curriculum

Despite these challenges, the Romanian education system continues to benefit from collaborative public-private and EU-supported projects that aim to mitigate these shortcomings.

5. Conclusions

Digital education in Romania is undergoing a period of strategic transformation. The infusion of funding-particularly via PNRR-creates a historic opportunity to modernize the education system. However, these opportunities must be matched by effective policy implementation, sustained training for teachers, and equal access to technological resources for all students, regardless of socio-economic background.

A central component to successful digital education is the continuous professional development of teachers. Programs such as Erasmus+ and the Digital Education Action Plan 2021-2027 by the European Commission play an essential role in offering structured training, international collaboration opportunities, and access to digital pedagogical resources (European Commission, 2020b, p.5).

A significant example is the eTwinning platform, which enables teachers to collaborate across borders, exchange experiences, and adopt innovative instructional methods (European Commission, 2020a). At the national level, projects like the "Digital School" initiative demonstrate how European funding can be effectively leveraged to upskill educators and equip classrooms.

As Romania continues to digitalize its education system, sustained efforts must focus on not just infrastructure and equipment, but also on creating a culture of digital fluency, inclusiveness, and pedagogical innovation.

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