DIGITAL EDUCATION THROUGHOUT LIFE

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Abstract: The paper focuses on digital education throughout life. Lifelong digital education targets all citizens and is indispensable in a world that is in the midst of a rapid transformation process. Thus, European action plans aim to expand digital skills to advanced ones among as many citizens as possible, especially those involved in education and training. The European Union institutions have made considerable efforts to update the common vision on lifelong learning and training, and in particular the digital component. Digital skills have become indispensable even in areas that, traditionally, had little to do with technology. The spread of technology has a major effect on society and democratic systems, on the labor market and the way work is organized, and, implicitly, on the expectations related to the skills that citizens should have.

Keywords: digital education, lifelong learning, technology, training, teachers

1. Introduction

The spread of technology has a major effect on society and democratic systems, on the labor market and the way work is organized, and, implicitly, on the expectations related to the skills that citizens should have. This impact can be identified by transforming the way of involvement in public participation processes and access to public services, changing lifestyles, changing the way the learning process takes place, the automation of processes in the workplace, the emergence of new jobs, the emergence of the need for digital skills not only in jobs in technology and engineering-related fields, but also in other jobs.

Digital skills have become indispensable even in areas that, traditionally, had little to do with technology. For example, in agriculture, farmers take e-learning or blended learning training courses, find out about funding opportunities on online portals and submit documents in electronic format, learn informally from materials available online and consult with colleagues from other areas through online communication applications, integrate and electronically control all kinds of equipment located far from where they are. Another example, in the public system, the lack of digital skills among civil servants is reflected in the poor performance of institutions in giving citizens access to public services in an electronic system, which would reduce waiting times and bureaucracy and increase the degree of transparency and trust in institutions.

Lifelong digital education targets all citizens and is indispensable in a world that is in the midst of a rapid transformation process. Thus, European action plans aim to expand digital skills to advanced ones among as many citizens as possible, especially those involved in education and training. The European Union institutions have made considerable efforts to update the common vision on lifelong learning and training, and in particular the digital component. Understanding technology also requires a critical approach to it from the perspective of potential issues related to ethics, environmental

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sustainability, data protection and privacy, children's rights, discrimination, including gender and disability prejudices, and ethnic and racial discrimination. In this effort, formal education must be complemented by non-formal education in partnership with libraries, industry and research institutions.

2. Lifelong digital education

The indicator that the EU is pursuing to assess the efficiency with which the European Skills Agenda 2020 will be implemented in terms of digital education is that by 2025, 230 million adults (16-74 years old) will have acquired at least basic digital skills, which is equivalent to 70% of the EU population. The proposed target involves a 25% increase in those who currently have basic digital skills. The current average at EU level is 56% of the total population. In order to contribute to achieving the indicator assumed by the EU, approaching digital education as part of lifelong education, with a direct address to vulnerable categories and older adults (50-74), is imperative.
(https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en)

During the pandemic, not only educational institutions in compulsory and tertiary education cycles organized themselves in the online environment, but also providers of educational services for adults. From this context it emerges that the existence of digital skills among adults is a mandatory condition. Lifelong digital education is more than a goal and a finality of education, but becomes an essential premise and a means for access and acquisition of skills in all other educational fields.

In Romania, there are also major differences in the use of some concepts: this is the case with the concept of lifelong learning, which is approached sectorally, while, for the European Union, it is essential to have an integrated vision of education and training, regardless of the form they take. Not only is there a need for more coherence at the national level, but, first of all, it is necessary to develop an overall vision connected to the European vision and this must be built according to what we want to happen to the beneficiaries of education at the national level in the long term. Secondly, more flexibility and diligence are needed in taking over the strategic documents and instruments developed at the European level. This is the case with the European Digital Competence Framework (DigComp), which, although it has existed since 2013 and was updated in 2016, is not yet uniformly or sufficiently applied in Romania's internal documents, is not promoted in any way and does not have a Romanian version.

A component of general digital competences is the use of software programs, which is becoming a mandatory requirement for more and more jobs. According to the Digital Economy and Society Index Report 2020 - Human Capital (DESI), only 35% of Romanians have basic skills in this regard, only ahead of Bulgaria, where the average is 31%. In contrast, the European average is 61%. In 2018, 57% of companies that tried to recruit ICT specialists reported that they encountered difficulties (64% of large companies and 56% of SMEs). Romania is the first in this chapter in the EU, with 90% of these companies claiming to have encountered difficulties in filling vacant positions in the ICT field. On average, 70% of large companies and 23% of SMEs provide training programs for staff to improve their digital skills. The European leader in this regard is Finland with 37%, while Romania is in last place with only 6%.

According to Eurostat, the percentage of people who did not use the internet in the last 3 months from the date of the study was 26% in 2019. This has decreased considerably compared to 2015 when it was 44%. However, the share of people in

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Romania who do not use the internet remains the second in the EU, after Bulgaria with 32%. The data is also confirmed by DESI which shows that Romania ranks second to last among European States in regular Internet use, with only 28% of the population using the Internet at least once a week, compared to the European average of over 80%. As for people who have never used the Internet, Romania ranks fifth with 17% of the population. With only 2% of the population having never used the Internet, Romania is 8 percentage points behind the EU average of 9% and 15 percentage points behind Denmark and Sweden. Denmark, Sweden, and the Netherlands are at the top of the rankings in terms of regular Internet use with over 95%.

Romania ranks last in the EU in terms of digital public services, being the only country with a score below 50%, compared to the EU average of over 70% and almost 90% in Estonia. Romania also ranks last in terms of the extent to which citizens can complete procedural steps in relation to public administration online (65% compared to the EU average of over 90%). In relation to the business sector, the degree to which public services for businesses are interoperable and operate across borders is below 70% in Romania (last in the EU), compared to the European average of over 80% and 100% in Denmark and Estonia. If in the Open Data chapter, Romania approaches the European average of 65% with a percentage close to 60%, user orientation again places Romania in last place in the EU with 70% compared to the EU average of almost 90%.

At the European level, the European Commission analyzed how many women work in the IT&C field and concluded that only 17% of employees are women. Also, only 1 in 3 people who complete a STEM program are women. In terms of earnings, women in IT&C are paid even 20% less than men. Regarding entrepreneurship, only 19% of women are involved in IT&C initiatives, and 93% of the capital invested in European companies in 2019 was directed to teams made up exclusively of men. (https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en)

3. Community Lifelong Learning Centers

The National Education Law includes two articles (art. 343-344) that stipulate the establishment of Community Lifelong Learning Centers (CCIP). The law requires that these CCIPs be established at regional level through decisions of the UATs. Although additional legislation was also adopted to clarify the status and functioning of the CCIPs (GD 598/2017, MEC Order 3894/2019), it has had no role in ensuring the sustainability of the centers. Also, there has never been an alternative financing mechanism for these regional entities, and the problem of staff and resources make their establishment and efficient functioning impossible. There is a need to rethink CCIPs as educational hubs organized at the local level, through the initiative and under the coordination of either public libraries, pre-university education units, cultural centers, or children's palaces, in partnership with the business environment, civil society and local authorities. With the exception of a project carried out between 2015 and 2018 by the Romanian Institute for Adult Education (IEAR), in partnership with the Swiss Federation for Adult Education (SVEB), the Romanian-German Foundation (FRG) and the Rural Assistance Center Foundation (CAR), within which four CCIPs were established in four localities in four counties in western Romania, this legal framework has never been applied and does not contain elements that would ensure a sustainable functioning of these entities. There is a need for a debureaucratization of their way of functioning and greater flexibility in terms of developing a portfolio of training, coaching and mentoring services, etc. in order to

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support citizens from disadvantaged areas in obtaining basic and advanced digital skills, and beyond. CCIPs can also be the structures on which to build other initiatives to promote lifelong digital education for vulnerable categories: digital innovation hubs, digital entrepreneurship workshops, competitions to support young people who want to start a career in industries that involve advanced digital skills, etc.

An example of good practice in the field of developing adult digital skills is the project on the development of an integrated digital skills training and assessment system implemented by a consortium of 8 organizations from 6 Member States, including the EOS Foundation in Romania. The project - Digital Competences Development System (DCDS) - aimed to apply the European Digital Competence Framework (DigComp) in adult training programmes in the national languages of the participating countries. The project also aimed to develop a methodology for assessing and validating basic digital competences of adults in the non-formal education system corresponding to DigComp.

The implementation of a digital education strategy depends not only on the strategy itself, but also on the social capital enjoyed by public institutions in Romania, on electoral cycles, on allocated resources and many other external factors. However, as long as the financing of the education system at the level provided by law is postponed by government ordinances, any effort to transform education, so that it becomes inclusive and supports social and economic transformations, will be doomed to failure.

Financing education in Romania with 6% is essential, but equally important is the assumption of a pragmatic approach focused on results and cross-cutting impact, not only on spending money from European funds to obtain a good score on financial absorption. Another threat to the implementation of the strategy is the level of competence and diligence among employees in public institutions and other people involved. It is necessary for those involved in implementing the strategy to understand the overall vision, to have excellent professional skills to carry out their assigned activities, and to work tirelessly in favor of all categories of beneficiaries.

4. Arguments for the digitalization of lifelong learning

Through the obligations it has assumed through the European Skills Agenda, Romania will have to pay greater attention to the idea of skills, both in terms of basic skills and employability skills and entrepreneurial skills. In this context, DigComp can be used as a reporting tool in inclusive education programs, in reskilling and upskilling programs, as well as in the assessment of digital skills of those looking for a job. By obtaining certificates that attest to real skills acquired in modular training programs, including in the blended learning system, access to jobs is facilitated, which implicitly helps to increase the quality of life and general well-being of families in Romania.

One of the measures announced in the European Skills Agenda, published on 1 July 2020, is the development of a common approach to microcredit, measures that allow for a greater degree of flexibility, personalisation, openness and rapid adaptation in terms of preparing European citizens for both the challenges of the labour market and their own interests. This approach is included in the European Commission's vision announced on 30 September 2020 on the establishment of a European Education Area by 2025. Romania does not have any study on the quality of adult training nor on the training capacities of companies and non-governmental organisations active in this field. However, in recent years, there has been increasing discussion about the poor quality of training programmes and trainers, about competence assessment models that do not

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properly screen course participants, leading to a situation where everyone who goes to a training programme obtains certifications and diplomas.

Regarding adult participation in learning activities, the Council Recommendation of 20 July 2020 on Romania's National Reform Programme for 2020 mentions that, in 2019, the percentage was only 1.3%, being among the lowest in the European Union. The elderly represent the most vulnerable demographic category from a digital literacy perspective, which is reflected in the statistics on the level of acquisition of basic digital skills. The lack of digital education among the elderly is a common problem at European level, they are well below the average digital literacy limit among the EU populations. According to DESI, at European level, 82% of young people (16-24 years old), 85% of those with university degrees, 68% of employees and 87% of students have basic digital skills compared to 35% in the 55-74 age group and 30% of pensioners. At European level, there are already several programs and platforms dedicated to the elderly and which produce awareness and advocacy programs through which they try to respond to the needs of this category. The European Commission shows that there is a significant gender gap in digital skills. Proportionally more men than women have at least basic digital skills, and the gap increases with age. Although girls may outperform boys in digital literacy at school, over the course of their lives, women end up being underrepresented in digital professions, where men still account for more than 80% of the workforce, the DEAP shows. (https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en)

Despite the active measures adopted by Romania to increase the employment rate of people with disabilities, major discrepancies still exist. A large part of people with disabilities who could be integrated into the labor market fail to find a job also due to a lower level of basic skills and employability skills. The European Commission has called on Member States to make more consistent efforts towards making educational technologies accessible to people with disabilities. The European Commission has also often emphasized the need for inclusion programs to also cover refugees and asylum seekers. These categories of people can fill the labor shortage in certain areas, but require their integration into apprenticeship, conversion and professional development programs.

Public libraries, cultural centers and children's palaces can serve as complementary spaces to schools, which can provide the infrastructure, qualified human resources and favorable context for carrying out creative and participatory learning activities of the makerspace type, based on the Do It Yourself (DIY) principle, which has gained ground in the last decade in Europe. At the European level, The Pact for Skills was launched, which starts from the premise that stakeholders such as: companies, employees, national, regional and local authorities, social partners, cross-industry and sectoral organizations, education and training providers, chambers of commerce and employment services each have an important role in the process of developing the skills framework necessary to accommodate the double ecological and digital transition process.

5. The training of teachers for digital education

Significant changes in all education systems of the EU member states have been imposed by the new development directions at the level of educational policies in the direction of professionalizing the teaching career, its orientation towards continuous

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development, increasing the attractiveness of the teaching profession, orientation towards quality standards "in the field of initial training through higher education institutions, continuous professional development and lifelong learning, promoting mobility and developing partnerships". (Bates 2022, p.39) Continuous teacher training can be complementary or an extension of the initial one, but the correspondence between them is not absolute. Continuous teacher training includes professional development and career evolution.

A study conducted by the European Commission on the training of digital skills for teachers revealed that teachers need support and guidance in using and practicing their digital skills. Thus, it was found that students and teachers in Europe want the instructional-educational process to be digitalized, "given that the number of computers has doubled since 2006 and most schools are now connected, but the use of information and communication technologies (ICT) and digital skills is very uneven". (Carey 2021, p.87) These skills and abilities need to be introduced in continuous training courses for teachers, according to a survey on the use of digital technologies in schools in Europe.

The main findings of the study were:

a) Only one in four 9-year-olds study in a highly digitalised school – with up-to-date equipment, fast broadband and high connectivity (website, email for students and teachers, local area network).
b) Only half of 16-year-olds are in such digitally-rich schools.
c) 20% of secondary school students have never or almost never used a computer in their school lessons.
d) The high frequency of ICT-based learning activities in the classroom increases when schools have specific formal policies on the use of ICT.
e) There are significant differences between countries. Scandinavian and Nordic countries are the best equipped (Sweden, Finland, Denmark); while students in Poland, Romania, Italy, Greece, Hungary and Slovakia are the most deprived.
f) Laptops, tablets and notebooks are replacing desktop computers in many schools.
g) Lack of equipment does not mean lack of interest: some countries with the highest use of IT equipment are also the ones with the lowest equipment scores (e.g. Bulgaria, Slovakia, Cyprus and Hungary).
h) It is essential that students have access to ICT at home and at school.
i) Most teachers believe that a radical change in policy is needed.
j) Teachers are generally confident and positive about the use of ICT for learning. This confidence is essential: qualified and confident teachers are more important than the latest equipment to provide digital skills and knowledge.
k) However, teacher training in ICT is rarely mandatory and therefore most teachers allocate time from their free time for private study.
l) Teachers use computers to prepare lessons more often than they use them in lessons.

In Romania, teachers' confidence in their operational skills with ICT is in line with the EU average. The frequency of ICT use by teachers in lessons is close to the EU average, despite relatively low levels of equipment provision. "Regarding teachers' use of ICT during lessons, there are very few teachers who use teaching-learning through virtual environments, the main use of ICT being for lesson preparation". (Francois 2020,

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p.78) Interestingly, Romania ranks first or second among European countries in terms of student-centred education. While 92% of teachers report regular participation in professional development, 21% of them declare a need for additional training for teaching students with special needs; 16% report a need for additional training on the use of information and communication technology (ICT) for teaching; and approximately 13% report the need for additional training in teaching in multilingual and multicultural environments. (Rosenburg 2023, p.58)

Romania is in the middle range in terms of the number of teachers who have not spent any time on professional development activities related to ICT in the last two years. Under the influence of the changes brought to society by the development of ICT and imposed on education by the need to acquire the necessary skills for the 21st century, daily teaching practice demonstrates that today's students, compared to those of yesterday, have different expectations from school, in terms of learning and education. A solution to the justified expectations of students can be the management of training activities with IT tools and on e-learning platforms. The approach to learning based on the traditional symbiosis - ICT tools has the additional advantage of ensuring the continuity of training between school and faculty, between school and lifelong learning. An important aspect of national policies towards the training of new generations is the use of the computer as a support for learning. The impact of ICT on learning must therefore be foreseen and oriented by revealing expectations. ICT must not only be considered as one of the content elements of education, but also as a teaching tool (integrated into the teaching of various subjects), with an important role in improving the quality of teaching and the improvement of the instructional-educational process.

The term *competence* has experienced a significant increase in its importance in recent years, becoming a key term of the practical-educational discourse. “In adult education competence development has even come to be designated as the term of the year 2001". (Selingo 2021, p.104)

The gap between the development of diversity and efficiency of ICT tools for education and teacher training is obvious, but especially the gap between the training courses followed by teachers and the application of training results in the teaching process. For the success of the change, collaboration and sharing of information, ideas, experiences, acquired skills regarding the creation of digital materials and the results of their experimentation are important. Practically, within the teaching staff, pride and professional individualism must be replaced with the adoption of open attitudes and the spirit of teamwork.

The participation of teachers in training courses aimed at goals and objectives that motivate and develop digital didactics is essential for the need to acquire new skills as a guide and advisor to students in the classroom, in order to acquire skills in the art of teaching with ICT, so necessary in current educational requirements. Initial training is not an excuse, nor is the accumulated experience in the use of traditional didactics sufficient. Collaborations within transnational educational partnerships funded by the EU through the ERASMUS + program and training courses in the European context provide the optimal framework for acquiring and/or developing digital skills “to explore and capitalize on ICT tools for school instruction, informing about the emergence of new IT tools for education and improving the teaching process through the use of e-learning platforms (Ehlers 2021, p.98)

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6. Conclusions

In order to respect the right of each student to a quality education, which contributes to the construction of character, personal identity and the acquisition of skills according to the graduate's profile, it is necessary for each teacher to agree to go through a process of auditing personal skills and, subsequently, to follow a plan to improve them through a variety of dedicated programs: training courses, webinars - support, technical training on accessing and using platforms, etc.

The main proposed tool is a learning platform. Education professionals should exercise, from the initial training stage, the responsibility for their own learning in a safe context. In short, the platform means the context in which they build their own learning journey, like a puzzle that they can permanently redo, depending on the challenges they have in the classroom. The platform dedicated to teachers must place them on professional improvement paths, periodically, in line with global trends.

The platform will allow supporting and shaping the processes of improving teachers' skills at their own pace, in a space of emotional safety. The learning relationship between the university professor and the future student teacher is partially mediated by technology, which reduces the anxiety associated with the processes of transformation and confrontation of one's own learning limits and adaptation to the new.

Digital competence is one of the key competencies and aims at the set of knowledge, skills, attitudes, formed and developed through learning, which are mobilized to identify and solve the characteristic problems that arise in the process of accumulating, storing, processing and disseminating information with the help of the means offered by information and communication technology. The process of developing digital competence in teachers is carried out efficiently by motivating educators to develop that competence, ensuring digital and information literacy, and capitalizing on digital tools in professional activity. The involvement of educators in a complex program consisting of seminars, consultations, workshops, round tables, trainings targeting relevant topics (skills developed by educators through the use of ICT; computer use in creating graphic documents; word processing; spreadsheets; Google applications; graphic organizers; psychopedagogical requirements in creating and editing digital content in the teaching-learning-evaluation process; social and ethical aspects in the context of using ICT) ensures the progress of the digital competence of teachers in school education.

References

1. Bates, T., 2022. *Teaching in a digital age*. https://opentextbc.ca/teachinginadigitalage.
2. Carey, K., 2021. *Creating the Future of Learning and the University of Everywhere*. London: Riverhead Books.
3. Ehlers, U.D., 2021. From Open Educational Resources to Open Educational Practices. *Elearning papers, 23*.
4. Francois, N., 2020. *Elearning Now: How to Create Successful Elearning Courses and Teach Online Today*. London: Routledge.
5. Rosenburg, M., 2023. *Elearning: Strategies for Delivering Knowledge in the Digital Age*. London: McGraw Hill Education.
6. Selingo, J. J., 2021. *MOOC U: Who is Getting the Most out of Online Education and Why*. London: Simon & Schuster.
7. https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

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