ROMANIA

Report on methods for holistic literacy and emerging technologies (ET) in Adult Learning and Education (ALE)

ETH LA — Emerging Technologies for Holistic Literacy in Adult Education

Co-funded by the European Union

Desk research findings

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Policy Frameworks

Romania has adopted several policies and strategies aimed at integrating digital technologies in education, but there is no clear and dedicated budget line for adult education. Important documents include:

- SMART.Edu Strategy (2021-2027) - the strategy on digitalisation of education.
- National Strategy for Adult Continuing Education (2024-2030).
- National Digital Skills Strategy (currently being updated).

National policies encourage the digitisation of education, including adult education. However, there are still implementation gaps and insufficient funding for adult education. European projects, such as Erasmus+, play an important role in stimulating the deployment of emerging technologies.

Romania has adopted strategies that promote the digitisation of education and digital literacy as essential parts of educational reform. These strategies are supported by government documents, such as the "SmartEdu" Strategy (2021-2027), which emphasises the importance of integrating emerging technologies (ET) into education, including adult education. The National Education Act also provides legislative frameworks for the integration of technologies in education systems.

Although these strategies are an important step towards the modernisation of education, their concrete implementation remains challenging due to a lack of dedicated funding and uneven implementation at the national level. Emerging technologies are still partially mainstreamed, with positive results in some European projects, but large-scale implementation in adult education remains limited. These policies are essential for promoting digital literacy, but practical implementation needs to be strengthened through continuous training for teachers, increased access to technologies and the integration of an adequate digital infrastructure in adult education institutions.

Obstacles and Enablers

Romania's efforts to integrate emerging technologies (ET) into adult education face a complex interplay of structural, social, and institutional challenges, but also benefit from a growing body of supportive strategies, initiatives, and infrastructures. The integration of digital tools into adult learning remains uneven, and its effectiveness is significantly influenced by socio-economic disparities, institutional readiness, and cultural attitudes toward lifelong learning.

A persistent barrier is the low participation of adults in online education. With only 19.1% of Romanian adults having engaged in educational activities in the last 12 months (2022), Romania falls well below the EU average of 39.5%.

This gap is further exacerbated by territorial inequalities, with participation rates at 29.7% in urban areas versus 11.2% in rural regions. Vulnerable groups—including older adults, individuals in rural communities, and those with low income—are disproportionately affected, lacking both access to digital devices and the skills needed to engage with digital content.

Another major obstacle is the absence of a national framework for validating digital competences acquired through non-formal means. Without formal recognition of online or informal learning, adult learners have little institutional incentive to pursue such opportunities. Compounding this is the limited access to technology and connectivity, particularly in remote or underserved regions, where broadband infrastructure and device ownership remain insufficient. Even when access exists, a widespread lack of digital competences, especially among marginalised populations, inhibits effective participation in technology-based education.

The adult learning landscape in Romania is also shaped by low intrinsic motivation among adults with limited or outdated educational experiences. This disengagement is amplified by a weak culture of lifelong learning, where adult education is not consistently valued or supported at a societal level. Furthermore, institutional fragmentation and the lack of coherent strategies for integrating ET into adult learning systems result in uneven implementation and underutilised opportunities for innovation.

Despite these challenges, Romania does show signs of progress and promise. National and European strategies, such as the National Education and Adult Learning Strategy (NEAAL 2030), are setting the stage for systemic improvements by explicitly encouraging the use of digital tools in lifelong learning. EU-supported programmes like Erasmus+ and various NGO-led initiatives are actively promoting digitisation in adult education, offering both resources and capacity-building efforts that target educators and learners alike.

There are also grassroots enablers that can be further harnessed. Public libraries, for instance, have strong potential to act as local hubs for digital learning, offering access to technology and guidance in developing digital competences. Similarly, training programmes such as "Teach for the Future" are beginning to fill gaps in educator preparedness, helping instructors integrate ET into their pedagogical approaches.

The increasing political recognition of the role of emerging technologies in educational inclusion is another encouraging sign. This recognition is translating into new investments and pilot initiatives that promote online and hybrid learning models, which have proven to offer greater flexibility and reach—especially critical for adult learners balancing work, family, and education.

To move forward, Romania could focus on several key priorities: establishing a national framework for online education; expanding digital literacy initiatives in disadvantaged areas; ensuring continuous professional development for educators in digital pedagogy; strengthening partnerships between educational institutions and NGOs; and supporting innovative, inclusive, and flexible learning models. These coordinated efforts are essential to closing participation gaps and enabling Romanian adults to fully benefit from the opportunities offered by emerging technologies.

Existing Educational Programmes (Best Practices)

Romania does not yet have a broad national system for integrating ET in adult literacy, but there are pilot projects - and local or sectoral initiatives that can be scaled up.

"**Ion Neculce"** Theoretical High School in Târgu Frumos has implemented, in the period 1 September 2023 - 31 August 2024, the Erasmus+ project entitled "Education for VALoarE+: a 3D puzzle: DIGITALIZATION, SUSTAINABLE DEVELOPMENT, DIVERSITY for INCLUDING! Through this project, ten secondary school teachers participated in three international mobilities in Belgium, Italy and Malta. These mobilities aimed at training teachers in key areas such as digitisation of learning, conflict management, bullying prevention and education for sustainable development. The courses enabled the teachers to acquire advanced skills in the use of digital platforms, to develop effective strategies for managing conflict situations at school and to integrate environmental issues into the educational process, thus contributing to a positive and inclusive educational climate.

The CRED project ("Relevant Curriculum, Open Education for All"), implemented by the Romanian Ministry of Education, has been highlighted in the European strategy "Europe's Digital Decade: Digital Agenda 2030" as an example of good practice in developing teachers' digital competences. In the context of the COVID-19 pandemic, CRED offered training modules focusing on digital competences, attended by 56,615 teachers, representing almost half of all primary and secondary school teachers. At the same time, the course dedicated to digital educational resources has been completed by around 3,900 teachers, with more than 8,700 open educational resources created and made available. The CRED platform has recorded over 90 million page views since its launch. The report also mentions Romania's involvement in EU Code Week 2022, with 2,297 activities organised mainly in schools, attracting almost 80,000 participants, 45% of them girls, ranking Romania 5th in Europe.

Initiated by the Association of Assistance and Programs for Sustainable Development - Agenda 21, **Digital education for a sustainable future** project aims to introduce ICT in the educational process in the village of Cîndești, Buzău County, a disadvantaged rural community with high unemployment and high risk of social exclusion. The aim of the project is to reduce educational inequalities and increase opportunities for young people from vulnerable backgrounds by equipping with digital tools (tablets) and conducting ICT training workshops for 30 students and 10 teachers from the Secondary School "Sat Cîndești".

The initiative also supports volunteering by involving 6 young people in updating the software on the devices provided. The project contributes locally to the Sustainable Development Goals of the 2030 Agenda (quality education, reduced inequality, innovation and infrastructure) and responds to an urgent need for digital equipment in rural areas where access to the internet and technology is low. The project promotes digital education as an essential pillar of sustainable development and aims to create a model of good practice that is sustainable and adaptable to other disadvantaged communities.

"TEACH FOR THE FUTURE" - training for librarians and trainers in technology and innovation is a project supporting educational transformation in Romania, providing training for educators and promoting the integration of emerging technologies in adult education. The project includes modules that help educators to adopt digital educational methods and apply innovative active learning approaches such as gamification and augmented reality learning. The project "Teach for the Future - Adult Educational Transformation through Innovation, Technology and Entrepreneurship" is a strategic initiative launched in November 2019 by the National Association of Librarians and Public Libraries in Romania (ANBPR), in partnership with organizations from Bulgaria and Greece, and funded by the Erasmus+ Programme (Key Action 2 - Strategic Partnerships). The project aims to modernise and widen access of low-skilled adults to innovative educational opportunities tailored to today's labour market needs by promoting digital skills, entrepreneurship and leadership. The initiative aims to create a transnational network of trainers in the fields of IT, innovation management, networking and entrepreneurship, who will disseminate knowledge to diverse adult communities in Romania, Bulgaria and Greece. The project proposes an integrated and multi-sectoral approach, involving public libraries as hubs of innovation and lifelong learning in an inclusive, adaptive and technology-driven educational approach.

Back to School project - a platform with AI resources, gamification and storytelling for students combines artificial intelligence (AI) technologies with innovative learning methods, such as gamification and flipped learning, to support digital adult education. The platform is an excellent example of using emerging technologies to enhance adult education, providing a flexible and accessible framework for lifelong learning. At the beginning of the new school year, teachers in several European countries are benefiting from an innovative online educational platform, developed in the framework of the Back to School Open Resources project, coordinated by the Romanian "Once upon a time" team in collaboration with institutions in Greece and Spain. The platform offers freely accessible open educational resources that can be easily integrated into teaching activities, whether for homework, classroom lessons or homework. The platform proposes activities structured on two modern pedagogical methods - flipped learning and gamification - and is based on a set of 20 international stories. Each story is transformed into ten different types of activities, including educational games, debates, environmental activities, quizzes or critical thinking exercises, all illustrated with artificial intelligence to make them as appealing as possible to children of the digital generation.

An important aspect of the project is the inclusion component: all materials are also available in Romanian sign language as well as in international sign language, to be accessible to hearing-impaired children. Developed under the Erasmus+ program, the project demonstrates how technology - through AI, gamification and learner-centred pedagogical methods - can transform education into an interactive, adaptive and inclusive process. The platform encourages not only the accumulation of knowledge, but also the development of key skills for the future: autonomous learning, collaboration and critical thinking. According to coordinator Măriuca Mihăilescu, this type of initiative could redefine the way education is conceived and delivered globally in the future.

The course **Designing and Implementing Learning with Digital Support** is intended for pre-university teachers and is offered free of charge on the iTeach platform. It is self-paced, with an estimated learning time of 30 hours. The course is organised under the aegis of the Faculty of Psychology and Education Sciences, University of Bucharest. The aim of the course is to help teachers to integrate online tools and digital resources into classroom activities, thus supporting their continuing professional development. The course provides examples and suggestions for lesson design, making lessons more dynamic, and increasing student motivation, encouraging their participation and interest in learning.

Sources and practices

- Educație inovatoare prin Erasmus+: un viitor digital, verde și incluziv la Liceul Teoretic „Ion Neculce" din Târgu Frumos
- CRED-Curriculum relevant, educație deschisă pentru toți"
- Educatie digitala pentru un viitorul durabil
- "PREDĂ PENTRU VIITOR" – proiect strategic privind transformarea educațională a adulților din România, Bulgaria și Grecia
- Noua platforma „Back to School" îmbină tehnologii AI cu metode de învățare europene precum Gamification și Flipped Learning
- Proiectarea și desfășurarea activităților de învățare cu suport digital

Interview findings and perspectives from stakeholders

Emerging technologies integration in adult learning

The Romanian field research for Task 2.1 included interviews with stakeholders involved in adult learning from both the public and private sectors, including NGO staff, vocational training providers, and actors within educational projects targeting marginalised groups. Their perspectives paint a picture of an adult education landscape where emerging technologies are gaining recognition but remain unevenly adopted due to structural, cultural, and policy-level constraints.

A consistent message across interviews is that digital transformation is increasingly seen as a priority, but its implementation in the adult learning sector lacks coherence. Although some actors have begun integrating digital tools, particularly in response to the pandemic, this uptake has been largely reactive, fragmented, and heavily dependent on project-based funding. National-level strategies do exist, and Romania participates in European frameworks promoting digital skills and inclusion. Yet, according to participants, there is a visible disconnect between policy documents and day-to-day practice in adult education institutions.

Stakeholders emphasised that emerging technologies such as AI, gamification, and digital collaborative platforms are not systematically embedded in adult learning structures. Rather, they are explored in isolated pilots or non-formal projects, often supported by EU or donor funding. The more common digital tools in actual use are relatively basic: Zoom, Google Meet, and messaging platforms for communication. More advanced forms of digital pedagogy, such as interactive simulations, virtual or augmented reality, or personalized AI-driven learning environments, are rarely applied, especially outside urban centres or among learners from marginalised backgrounds.

Several interviewees pointed to infrastructural disparities as a major barrier. While urban institutions often have adequate internet access and equipment, many rural or under-resourced adult learning centres still struggle with outdated hardware, unreliable connectivity, and limited technical support. In such settings, introducing advanced educational technologies is not only difficult but, in many cases, seen as unrealistic. One stakeholder noted that even ensuring stable access to a digital classroom was an ongoing challenge for many learners.

Another critical obstacle is the lack of educator readiness and digital pedagogical training. Most adult educators in Romania have not received structured training on how to integrate digital tools meaningfully into their teaching. Even when they are open to experimentation, they lack time, support, and incentives to redesign curricula around digital platforms. One participant described this situation as a "double gap": learners lack digital skills, and educators lack the strategies to support them effectively through technology.

Furthermore, institutional leadership does not always prioritise innovation. In many centres, the introduction of emerging technologies is left to individual initiative rather than embedded in strategic planning. Some NGOs have managed to incorporate digital tools successfully in working with disadvantaged groups, especially young adults or migrants. However, these efforts remain isolated, with little systemic follow-up or knowledge transfer into public education structures. There is a lack of national coordination to ensure that effective practices can be scaled or sustained.

Despite these challenges, stakeholders also pointed to enabling factors. Romania has a growing base of civil society actors engaged in digital education, often using co-design methodologies and learner-centred approaches. Several projects have explored the use of gamified learning, blended models, and accessible online platforms tailored to adult learners' needs. Moreover, the pandemic has had a long-term effect in pushing both institutions and learners to become more comfortable with digital tools, even if at a basic level.

Importantly, participants stressed the need to redefine the value of adult education in the public discourse. Without elevating the status of adult learning - and integrating it meaningfully into national development goals - innovation will continue to be limited to pockets of experimentation. One interviewee noted that there is a need for "new narratives" that frame adult education not merely as a remedial service but as a strategic space for economic resilience, social inclusion, and democratic participation, especially in a digital age.

The Romanian context reflects a complex interplay of policy ambition and operational constraint. Emerging technologies are viewed as relevant and increasingly necessary, yet the conditions for their meaningful integration into adult education remain fragile. Achieving systemic impact will require a coordinated effort to improve digital infrastructure, build educator capacity, support institutional leadership, and recognise adult learning as a central pillar of Romania's digital transformation agenda.

Holistic literacy programmes and emerging technologies

The Romanian field research for Task 2.2 explores how holistic literacy programmes are implemented for adult learners, especially those in vulnerable situations, drawing on insights from both educators and learners themselves. The findings reflect a learning ecosystem in which emerging technologies hold significant potential but are confronted by structural inequities, cultural hesitations, and pedagogical limitations. In this context, holistic literacy is unevenly fostered, with access and success often determined by geographic location, socioeconomic status, and institutional context.

The adult education providers interviewed frequently work with learners from disadvantaged backgrounds: those experiencing long-term unemployment, limited formal education, and rural or peri-urban exclusion. For many of these learners, digital literacy remains at the level of basic functionality, such as using smartphones for communication or navigating simple apps. Yet even these minimal skills are unequally distributed. One educator described learners who "couldn't tell the difference between a browser and an app," while others were more confident but lacked understanding of digital risks, critical thinking, or online communication norms.

The emotional dimensions of learning emerged as especially critical. Many learners carry the weight of educational failure, economic stress, or familial responsibilities that shape how they engage with learning. Educators noted that motivation is often fragile, and learners can easily become discouraged by setbacks, particularly when digital tools introduce feelings of incompetence or shame. The abrupt shift to online learning during the COVID-19 pandemic exacerbated these issues: some learners disengaged entirely, while others continued only with substantial external support.

Despite these challenges, there are signs of resilience and adaptability. Educators emphasised that trust-building and relational teaching are key to re-engaging learners who have had negative experiences with formal education. Digital tools can assist in this process when they are introduced in a learner-centred way. For instance, some educators use messaging apps like WhatsApp or Telegram to maintain informal communication, check in on learners' well-being, and provide micro-learning resources. Others rely on blended learning models, mixing in-person sessions with carefully guided digital exploration.

At the same time, there is a notable absence of structured pedagogical approaches to emerging technologies. Tools such as gamified learning environments, AI-supported writing aids, or immersive simulations are rarely used in adult education for vulnerable groups. Educators cited a lack of training, limited resources, and institutional risk aversion as major obstacles. Even in cases where learners were enthusiastic, teachers felt ill-equipped to select, adapt, or evaluate such tools meaningfully.

The learner voices in the research echoed many of these challenges. Adults who had previously dropped out of education described returning to learning as emotionally taxing, particularly in environments where the emphasis was placed on "catching up" rather than valuing their lived experiences. One learner described feeling "outside of everything digital," even though they used a smartphone daily. This paradox highlights a key issue in digital inclusion work: access does not equate to literacy. Without guided, contextualised, and supportive pathways, learners may remain passive consumers of technology rather than active participants in digital culture.

Some educators expressed a critical stance toward mainstream digitalisation narratives, warning that technology can deepen inequality if implemented without care. They pointed out that many platforms are not designed for adults with low levels of literacy or who face cognitive barriers. For these learners, slow-paced, highly personalized instruction is necessary, conditions often at odds with platform-driven models of efficiency and scale. In this sense, the ethical dimension of holistic literacy becomes clear: inclusion requires not only access to devices and networks but also technologies and pedagogies designed with equity in mind.

Importantly, the research also identified strategies that educators found effective in promoting holistic literacy. These include narrative-based learning, peer mentoring, and creating safe spaces where learners can make mistakes without judgment. Although not technologically advanced, these approaches help build the confidence and self-awareness needed to approach digital learning meaningfully. In some cases, technology was used to document learners' progress and reflections, reinforcing a sense of ownership and agency over the learning process.

The institutional context, however, does not always support such work. Educators reported that adult learning programs are often underfunded, time-limited, and oriented toward rapid outcomes rather than long-term development. This creates tension between the need for slow, relational work and the pressure to meet administrative or funding requirements. As a result, many promising practices remain confined to individual educators or projects, with limited opportunities for replication or scaling.

The Romanian field research underscores that building holistic literacy among vulnerable adults requires more than introducing digital tools. It demands a pedagogical and institutional shift toward empathy, contextual relevance, and long-term commitment. Emerging technologies can support this transformation, but only if their use is grounded in the realities of learners' lives and the capacities of those who support them. Without such alignment, technology risks reinforcing the very exclusions it seeks to overcome.