Educational Ventures

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FINAL REPORT WP2

Joint report on immersive and collaborative learning with indications for the new school-cooperative model and the identification of 5 modules for e-learning training, also considering the evaluation of the survey.

Summary

INTRODUCTION AND BACKGROUND

The Erasmus+ project "Educational Ventures" (KA220-SCH-000151181) represents an ambitious initiative aimed at the creation and testing of an innovative cooperative school model, designed to develop transversal skills through immersive and collaborative learning methodologies. The main goal is to create an educational system to support formal education that not only equips students with valuable skills, but also fosters a strong connection with their community and cultural heritage.

The Educational Venture model aims to promote non-formal education methods, favouring outdoor experiences and actively involving students in activities that explore the local culture.

The research presented in this report spans cultural, educational and technological fields to identify places of interest, outline the profiles of target groups and identify the fundamental competences for the future of school and society. It is not just a matter of developing an educational prototype, but of creating a combination of didactic innovation and the cultural identity of the territory, contributing significantly to the evolution of the educational system. In this context, experiential learning is favoured that stimulates skills such as critical thinking, creativity, collaboration, active participation and cultural awareness.

The integration of modern technologies and the adoption of the network activation system (RAS) represent a key point to personalize learning and improve student motivation.

In addition, the paper emphasizes the importance of meta-skills and soft skills, which are essential to prepare individuals for success in life and to build a more inclusive and resilient society. The interplay of the natural environment, advanced technologies, and emerging teaching methodologies reveals significant potential to transform contemporary education, delivering immersive experiences that promote active learning and collaboration.

The study also explores the fundamental role of emotions in learning, emphasizing how stimulating emotional aspects is fundamental to translate educational experiences into skills applicable in real life. This integrated approach aims to reduce stress and improve students'

emotional well-being, providing them with the tools they need to face new challenges with intelligence and wisdom.

To outline the educational model of Educational Venture, the report was integrated with the analysis of a survey administered to the target groups of the four countries involved in the project: Italy, Poland, the Czech Republic and Turkey. Feedback from the survey provided valuable insights, helping to ensure that the model responds to the specific needs of the different cultural and educational contexts in which it will be tested.

In order to create a solid basis for the model, a mixed research methodology combining qualitative and quantitative criteria was used. The survey distributed to the students allowed to acquire data on direct testimonies, while the review of existing studies and publications provided a solid theoretical framework that integrated and contextualized the empirical data collected on the target groups.

Together, these insights and assumptions have made it possible to formulate the guidelines for the prototype of the Educational Venture cooperative school and, consequently, to identify the structure of the e-learning course of which it will be composed, including precise indications on the contents it will have and on who among the partners, based on previous skills and experience, will be in charge of the drafting of the contents.

Analysis of the territories and topics of study

Spatial analysis is an essential tool for a thorough understanding of a given geographical context, be it a neighbourhood, a city or a region. This process aims to identify and define the potentials, aspirations and needs necessary for sustainable human development in the social, economic and environmental spheres. The “Educational Ventures” project uses territorial analysis to examine the educational needs of the target groups, identifying key topics and methodologies to develop its model. This analysis highlights how each country involved in the project offers a rich and diverse landscape, ideal for unique and enriching outdoor learning activities.

In an era in which education is often confined to the classroom, “Educational Ventures” aims to overcome these limits, taking students to places of great historical and natural significance. Through guided tours, interactive workshops and field activities, students can directly explore the topics covered in their studies, making learning more concrete and engaging. The project is based on the belief that education should be experiential and that direct contact with cultural and natural heritage can stimulate a deeper and more lasting understanding. The chosen methodology aims to transform the territory into a space for the realization of the individual and collective aspirations of present and future generations, increasing the social, educational and economic opportunities of young residents, without excluding anyone.

At the basis of the transformation of educational, technological and territorial dynamics there is the need to live and rediscover spaces: streets as intertwining relationships and public places as symbols of collectivity, enhancing history, culture and ties with the territory. Being part of a territory means coming into contact with spaces associated with knowledge and social practices. The image of a territory is shaped by the perception of those who observe it and those who live in it; Feeling involved in the redevelopment process can guarantee positive results for both the place and the community. The possibility of feeling an integral part of a territory promotes inclusion, social cohesion, the development and application of key skills. Observing the places and their practices leads to an understanding of the territory, highlighting the very meaning of living, with greater attention to the needs of the individual.

In this first phase, the task of the researchers of “Educational Ventures” is to develop a study capable of exploring the relationship between the territory and culture, initiating virtuous participatory processes of technological and innovative teaching. It is a matter of developing practices in which culture, spaces and the integration of digital tools contribute to increasing the sense of belonging and quality of life. The aim is to demonstrate how these tools and methodologies can ensure the development of fundamental skills, benefiting from the interaction between individuals, context of belonging, cultural identity and technological progress.

Currently, we are witnessing what is commonly called a crisis of the city, with a consequent impoverishment of ideals and values, both from a cultural, social and environmental point of view. To address this scenario, the implementation of a territorial enhancement model capable

of providing students with a path of educational and human growth, closely linked to the surrounding environment, is proposed. The first step towards achieving this goal consists in identifying and enhancing the main historical, artistic and meeting buildings and places, as authentic representatives of identity and culture, which act as spokespersons for individual and collective uses, traditions and behaviours.

The Czech Republic, located in the heart of Europe, offers a unique mix of natural and urban landscapes, making it an ideal setting for outdoor educational activities. The Czech partner company, Caio, and the selected target school are located in Prague, the capital, where there are immense opportunities and suitable places to explore the effects of outdoor learning. Prague Castle, for example, is not only a historical landmark, but also a place where students can learn about medieval history, Gothic architecture, and Czech politics through guided tours and interactive activities. Petřín Hill, with its extensive gardens and observation tower, offers another setting for outdoor learning. Students can explore local botany, study the geography of the cityscape, and engage in physical activities such as hiking. The banks of the Vltava River offer opportunities to study river ecosystems, urban ecology and the impact of pollution. Stromovka Park and Divoká Šárka Nature Reserve are ideal for ecology and biodiversity classes, offering a nature laboratory where students can observe the local flora and fauna.

In Poland, Podkarpackie Voivodeship, where the Polish Partner Association CRAS operates, is characterized by a varied landscape that includes mountains, hills, and plains, making it a perfect place for outdoor educational activities. Rzeszów, the capital of the region, is a cultural and educational centre that offers numerous learning resources. One of the main locations selected for the project is Folwark Miłociński, a historic estate with old buildings and a surrounding park. Here, students can explore historic architecture, learn about agricultural life in the past, and participate in workshops on topics such as traditional art and crafts. Sybirak Park, a large green space that includes a significant historical monument, is another key location. Not only does this park provide opportunities for outdoor physical activities, but it is also a place to reflect and learn about local history, especially the deportation of Poles to Siberia during the Soviet regime.

Rome, the capital of Italy, is a city that needs no introduction when it comes to historical and cultural richness. Both the Liceo Francesco D'Assisi and the company WIDE are based in Rome

and have selected a series of iconic locations for the “Educational Ventures” project, with the aim of using the city’s historical heritage to enrich the educational experience of students. The Catacombs of St. Marcellinus and Peter offer a unique opportunity to explore the archaeology and history of early Christianity. Students can learn about the construction and use of catacombs, the life of early Christians, and conservation techniques at archaeological sites. The Mausoleum of Sant’Elena and the Centocelle Archaeological Park are other sites of great importance. These places allow students to explore Roman history, ancient architecture, and archaeological excavation methods. The Alexandrian Aqueduct, with its imposing structure, provides a context for lectures on Roman engineering and architecture, as well as the historical importance of the aqueducts to the city of Rome. Again, the Centocelle Park is an area of great historical memory. Prehistoric and Romanesque sites have been found on this soil, and it is also the place where the first flight in Italy took place, carried out by Wilbur Wright aboard his “Flyer IV”.

Finally, Turkey, with its vast cultural heritage and unique natural landscapes, provides an ideal context for interdisciplinary learning. Located between Europe and Asia, it boasts a rich heritage to draw on and a complex demographic structure. The city of Çanakkale, where NARA Partner, a company specializing in virtual and augmented reality, operates, is a place rich in history and mythology, best known for its proximity to the ancient city of Assos and for its role in the Gallipoli campaign during the First World War. These places are perfect for immersive learning, allowing you to bring to life, with the creation of augmented and virtual reality experiences, historical events, mythological stories and practices of local artistic craftsmanship.

As can be seen, every city and every place are distinguished by elements that make up its identity and it is very important to identify and enhance these peculiarities. Participation, involvement and attractiveness to a place make it a powerful habitat for learning, engaging all the senses and promoting increased concentration, stress reduction and deep grounding of information in memory.

Students who have the opportunity to consciously immerse themselves in the complexity of the places of the past, the culture and sociality of their territory acquire the necessary tools to face new experiences. They improve their cultural sensitivity and ability to communicate in different

contexts, learn to maximize shared experience, evaluate and interpret critically, manage their time efficiently, and develop the ability to adapt quickly to new circumstances.

The educational opportunities experienced outside the school must be integrated with the characteristics of the territory and the social and cultural context in which the school is inserted; This is why the training offer should include a preparatory phase of study of the territory and the target audience. Outdoor teaching is not limited only to experiences carried out in natural contexts, but also extends to educational paths carried out in urban contexts, ensuring a direct and concrete relationship with the real world and the full involvement of learners.

In addition to this, thanks to the use of new technologies, students have the opportunity to explore in a dynamic and stimulating way the fundamental aspects of the history and culture of their territory, also appreciating the elements of the Italian cultural heritage and other European realities. This model can contribute to the education and training of aware and active citizens, to the enhancement of local heritage, to respect for the environment understood as a common good to be preserved, used and transformed in a sustainable way and to the promotion of interculturality for the respect of other cultures and diversity.

Identification of target groups

The target group of beneficiaries for the pilot experimentation of the “Educational Ventures” model is a key component in defining and evaluating the effectiveness of the project itself. This group of individuals represents those who will benefit directly or indirectly from the experimentation and who will contribute to the overall success of the entire model. The definition of the target group is essential to adapt the model to specific needs and to ensure positive and sustainable results.

The direct participants in the experimentation program are high school students from Italy, the Czech Republic, Romania and Turkey aged between 15 and 17, residing in urban areas, with a variety of social and cultural backgrounds. The target group includes boys and girls, with a particular focus on ensuring representation among different ethnicities, socioeconomic groups

and psycho-physical abilities. This diversity aims to reflect the reality of the society in which the project model will be implemented.

Teachers will also participate in the program, who will act as intermediaries between researchers and students, supporting the latter during training and activities. The adhesion of the "guide" teachers will help to maintain a high level of commitment and motivation within the target group indicated by the teachers themselves in agreement with the experienced researchers of the Partners.

Student engagement will take place through online training sessions, interactive workshops, and continuous feedback. A participatory approach will be encouraged, where beneficiaries will have the opportunity to provide input and suggestions to improve the model during its implementation.

An evaluation system will also be launched to continuously monitor the effectiveness of the model; Data will be collected on the skills acquired, the improvement of educational prospects and the overall satisfaction of the beneficiaries, thus building a solid foundation for the success of the program and for its future implementation on a larger scale.

The families of the students, students at the same school or of other schools not participating in the experimentation are equally important as an indirect target and their support will be essential to ensure the involvement of the participants, the continuity of the project and the dissemination of the model in the school context.

During the dissemination of the project results, the involvement of a secondary target is also envisaged, which is essential to amplify the impact and visibility of the project. This group, which will take part in the multiplier events, is made up of individuals, organizations or stakeholders who are not directly involved in the trial, but who can contribute significantly to its dissemination and overall success. These are representatives of government institutions, local authorities, and non-governmental organizations interested in the topics covered by the project model; media communication professionals; professional organizations and associations in the sector; entrepreneurs, business leaders, and representatives of participating companies can offer opportunities for collaboration, future sponsorship, or partnerships for large-scale

implementation of the model; academics, researchers and research institutes; organizations active in volunteering.

OUTDOOR LEARNING AND VIRTUAL TECHNOLOGICAL PATHS

In this section, the main features of the new outdoor learning method are presented, the pedagogical approaches associated with this model and the way in which it is possible to incorporate technological virtual paths into instructional design, emphasizing the importance of this combination to enrich learning.

Outdoor learning, also known as outdoor education or experiential learning, is a pedagogical approach that takes students outside of traditional classrooms and engages them in learning experiences in natural or urban environments. This method is based on the idea that the external environment can act as a stimulating educational context, favouring the direct interaction of students with the territory and nature. Such an approach encourages the development of environmental awareness, teamwork, problem-solving skills, and critical thinking.

The benefits of this method are many: it stimulates creativity and the ability to solve problems through exploration, experimentation and critical and creative thinking. It also promotes a deep connection with nature, improving concentration and reducing stress. It also develops social and emotional skills through teamwork, collaboration, and effective communication, as well as encouraging kinesthetics learning through physical activity and exploration, which is useful for students who may struggle in a traditional classroom setting. This approach also boosts focus, motivation, social skills, and creativity, improving emotional well-being and inclusivity.

Theoretical approaches to Outdoor Learning are rooted in different currents of pedagogical thought, emphasizing the importance of direct experience and interaction with the natural environment to foster student learning. Students learn by doing, experimenting, and reflecting on their actions, thus developing a deeper understanding of concepts. Outdoors, it is possible to transform standard learning into interdisciplinary learning, integrating multiple subject areas and offering learning opportunities that cross traditional disciplines, such as biology, ecology, geography and art. Connecting with nature fosters an appreciation for the environment and a sense of responsibility towards its conservation, contributing to the mental and physical well-

being of individuals. In addition, social and emotional learning provides opportunities for social interaction and collaboration among students, promoting the development of social skills and teamwork skills.

These theoretical foundations guide the design and implementation of outdoor educational experiences, based on key principles such as:

- active involvement,
- inquiry-based learning,
- interdisciplinary connections,
- Play and creativity
- social and emotional learning.

Students actively participate in learning through exploration and problem-solving directly in the natural environment, fostering more meaningful and lasting learning; they are encouraged to ask questions, investigate and draw their own conclusions through observation of their surroundings, developing research and critical thinking skills. In addition, Outdoor Learning integrates different disciplines and subjects, allowing students to apply knowledge and skills in real-world contexts, fostering a broader and deeper understanding of concepts. Play and creative activities are considered powerful tools for fostering *engagement* and **deep learning**, while **social and emotional** learning encourages collaboration, communication and respect for nature.

To successfully develop and implement the Outdoor Learning teaching methodology, it is crucial to clearly establish the educational goals you want to achieve, integrating outdoor activities with existing curricular norms. It is important to design challenging, **engaging**, and meaningful activities that foster active learning and student participation, and to assess learning through observations, reflection journals, presentations, or creative projects. Additionally, it is essential to develop risk management protocols to ensure a safe learning environment during outdoor activities, placing student peace of mind as a priority.

Outdoor learning stimulates a wide range of **skills** in students, contributing to integral development and personal growth. Some of the skills that outdoor learning helps stimulate include:

- Critical thinking and problem-solving,
- Collaboration and mutual respect,
- Communication, empathy and leadership,
- Managing emotions and developing positive relationships,
- Motor skills and physical coordination,
- Adaptation, flexibility and resilience,
- Self-awareness and self-esteem,
- Time management and stress reduction,
- Motivation and concentration,
- Creativity,
- Environmental awareness and awareness,
- Active citizenship,
- Inclusion.

The theme of inclusiveness, in particular, emerges as a key element of Outdoor Learning, since this educational approach is naturally configured as **accessible** to all students, regardless of their physical abilities or socioeconomic conditions.

Another issue, increasingly perceived, is sustainability. With the growing awareness of global environmental issues, outdoor learning programs have begun to spread and focus more on topics such as natural resource conservation, biodiversity, and environmental ethics.

While sharing common objectives such as promoting connection with nature and developing social and emotional skills, the implementation of Outdoor Learning in Italy, Turkey, Romania and the Czech Republic may have differences related to the geographical, pedagogical and technological context of each country. In Italy, for example, activities could focus on artistic and cultural heritage, while in Romania they could include activities more related to natural landscapes and, in Turkey, draw on historical and mythological heritage. Inevitably, the territory,

culture, pedagogical traditions and educational policies of each country influence the approach to Outdoor Learning, yet the characteristics and opportunities of this approach are the same in all four European realities. The opportunities offered by outdoor teaching are manifested through an increase in students' attention, an enhancement of the ability to concentrate and the freedom to explore in an informal environment. In this context, criticism and error play a fundamental role in promoting stimulation, inquiry, the courage to dare and the willingness to try again, thus fostering deeper and more meaningful learning.

From the analysis of the individual studies conducted by the Partners, it was also possible to appreciate some **best practices** and references, the knowledge of which will certainly benefit the construction of the outdoor learning model of Educational Venture, which are the following:

- In the Czech Republic, the organization "*Lessons in Grass – Učíme se venku*" is a valuable source of inspiration for teachers around the world. Not only does this website offer advice for beginners, but it also provides advanced tools for professional development through development maps and mentoring. Thanks to this platform, it is possible to become part of a vibrant community made up of teachers, enthusiastic parents and experienced instructors, creating a collaborative environment for the exchange of ideas and educational strategies. In addition, various non-profit organizations, such as Meta and the Center for the Integration of Migrants in Prague, use outdoor learning to help foreigners integrate more quickly into Czech society by offering language courses, tutoring, and various activities that facilitate social inclusion.
- In Italy, the Francesco D'Assisi High School has been experimenting with outdoor learning initiatives within the geography curriculum since 2022. This approach goes beyond just sightseeing, turning classes into hands-on, immersive experiences. Students participate in educational trips to London and Cornwall, where they explore geographical concepts through direct observation and active participation. For example, by navigating the River Thames, students become urban geographers, analysing the development of the city along the river. These multi-sensory experiences not only improve content understanding, but also stimulate creativity, critical thinking, and problem-solving skills, fostering a love of nature and improving academic achievement.

- In Turkey, while outdoor learning initially took place only in schools in villages and semi-rural areas, where interaction with the natural environment was part of everyday life, today the integration of technologies such as augmented reality (AR) and virtual reality (VR) has made it more interactive and engaging. These innovative technological tools have made it possible to create educational experiences that combine the exploration of the natural environment with virtual elements, enriching learning and stimulating students' interest.
- In Romania, outdoor activities are designed to enrich the school curriculum, improve student well-being, and create a stimulating and inclusive learning environment.

These customs and best practices demonstrate how outdoor learning can be successfully adapted and implemented in various cultural and geographical contexts, offering enriching and formative educational experiences.

Digital technologies for outdoor learning

As the Turkish experience anticipates, in the field of outdoor educational design, **technological virtual paths** can be integrated to enrich and expand the educational experience of students. In the digital age, the challenge is to harness the potential of technology to create dynamic and engaging learning processes. Traditional pedagogical approaches need to be reinvented to respond to the different needs and preferences of contemporary students. In this sense, the integration of virtual technological paths in educational design conveys educational enhancement. Some of the most effective technologies for enhancing outdoor learning include:

1. Augmented Reality and Virtual Reality,
2. Online Platform,
3. Gamification and educational games,
4. Interactive maps and GPS devices,
5. Applications and digital resources,
6. Virtual labs and simulations.

The most powerful tools in this context are certainly **Augmented Reality (AR) and Virtual Reality (VR).** These technologies make it possible to create immersive experiences that can be integrated into outdoor classes. For example, students can use AR devices to view historical reconstructions of an archaeological site during a visit or employ VR to explore remote natural environments that are not physically accessible. AR and VR can help to contextualize learning, making lessons more interactive and engaging. Before a field visit, students can virtually explore the area to be visited, familiarizing themselves with the points of interest and the history of the place. During the hike, they can use AR apps to gain additional information about the places they visit, overlaying digital data on the real environment. After the visit, VR technologies can be used to review and deepen the content covered, allowing a critical reflection on the lived experience.

Online **platforms** provide virtual spaces for collaboration, communication, and resource sharing, allowing educators to extend learning beyond the confines of the traditional classroom. From learning management systems (LMS) to social media platforms, online tools offer diverse opportunities for asynchronous and synchronous interactions between students and teachers. By leveraging online platforms, educators can facilitate personalized learning experiences, foster community building, and provide access to a wide range of digital resources. For example, teachers can use discussion forums to promote peer-to-peer learning, while video conferencing tools can facilitate virtual guest lectures or collaborative projects with experts from around the world.

Education **gamification** uses game design elements in non-gaming contexts to improve student engagement and motivation. By incorporating points, levels, and rewards into educational activities, gamification transforms learning into a dynamic and interactive process. Language learning, for example, can be greatly enhanced by interactive games that reinforce vocabulary and grammar in a fun and engaging way, while math games can help students develop problem-solving skills quickly.

Interactive **maps** and **GPS navigation systems** are other valuable tools as they facilitate orientation and the collection of geographical data in real time, allowing students to actively participate in the documentation and analysis of the territory. Teachers can create educational paths that include informative stages, using interactive maps accessible via smartphone or

tablet. Students can use GPS to track their route, record geolocated observations, and collect environmental data that can later be analysed in the classroom. Digital maps can be shared among students, making it easy to collaborate and compare the data collected.

There are also numerous **applications and digital resources** designed specifically for outdoor learning. These tools offer a wide range of educational content, from interactive quizzes to plant and animal species identification guides. While hiking, students can use educational apps to identify plants, animals, and geological formations, enriching their knowledge in real-time. Apps can turn learning activities into interactive games, stimulating students' interest and active participation. Apps can also provide immediate feedback on student responses, allowing for more effective correction and learning.

Finally, **virtual labs** and **simulations** provide students with the chance to explore complex scientific concepts in a safe and controlled manner. These systems can be used to prepare experiments that will then be carried out outdoors or to analyse the data collected during excursions. Before outdoor activities, students can use virtual labs to familiarize themselves with experimental procedures and scientific concepts. After data is collected in the field, simulations can be used to test hypotheses and visualize the results in more detail. Virtual labs offer advanced tools for data analysis, helping students interpret the results of their field observations.

Using the technologies examined, educators can create bridges between the natural environment and the digital world, providing students with unique opportunities for exploration and learning. The technological virtual paths integrated with outdoor learning offer students a multidimensional and innovative approach to education, combining the benefits of direct experience with the potential of digital technologies to create a stimulating and engaging learning environment. In addition, the use of technological virtual paths can contribute to the development of soft skills, which are recognized as crucial for the personal and professional lives of individuals in the digital age. Here's how virtual technology paths can be integrated into outdoor learning:

- **Immersive exploration:** Virtual Reality allows students to explore remote or unreachable places in reality, such as archaeological sites or particular ecosystems, providing an immersive and engaging experience.
- **Realistic simulations:** through augmented reality, students can interact with digital elements superimposed on the natural environment, creating realistic simulations that promote the understanding of complex concepts.
- **Documentation and reflection:** digital technologies allow students to document their outdoor experiences, recording observations, reflections and learning through photos, videos or annotation apps, facilitating critical reflection and review of experiences.
- **Collaborative activities:** online platforms and interactive applications allow students to collaborate in real time during outdoor activities, sharing information, resources and ideas to foster collective knowledge building.

At the beginning of the chapter, Outdoor Learning was discussed, as an educational approach aimed at leading students into nature and distancing them from the digital technologies to which they are strongly accustomed. However, it is necessary to overcome the perception of opposition between the outdoors and technology, since these elements can, on the contrary, mutually support and enhance each other. Educating in the critical and functional use of digital tools not only prevents dependence on them, but also offers the opportunity to integrate diversified languages, thus stimulating active participation. This synergy manifests itself more easily in an outdoor context, which requires full sensorimotor activation. In this scenario, the use of technology takes on a proactive role, becoming a real tool and not an end in itself. The goal is to read the world in a more in-depth way, encouraging the conjunction between practice and theory. Such an approach not only opens up new educational perspectives, but also fosters the acquisition of skills that go beyond mere theoretical knowledge, promoting a more complete and interactive vision of learning. To facilitate this path, teaching must give students time to observe, reflect and experience emotions. Outdoor classrooms are not simply physical spaces, but represent the opportunity to conceive, compare, debate and build knowledge in a context of creative freedom that not only stimulates curiosity, but also promotes inclusion through the recognition of the other as an active resource in the group context. The new generations are characterized by a predisposition to acquire skills through direct experience, exploring the world

with their senses. Learning takes place through action and experimentation, making obsolete the traditional educational tools that were limited to transmitting school notions. Educational institutions, including schools, must adapt to new educational needs that have been radically transformed over time.

New technologies represent a coherent and effective solution to bridge the gap between traditional education systems and new needs in the field of education. They have the potential to become a standard tool in education, integrating as an indispensable resource adopted at school level and in the education system as a whole.

RETICULAR ACTIVATION SYSTEM (RAS) AND APPLICATIONS

The Reticular Activation System (RAS) is a complex and vital structure of the human brain, fundamental for cognitive processes and for the way the world is perceived and reacted to it. Located in the brainstem, the RAS acts as a filter for sensory information, deciding which stimuli deserve attention and which can be ignored.

The main function of the RAS is to regulate arousal and attention. It receives inputs from various sensory systems, such as sight, hearing, touch, and smell, and determines which of these inputs should be transmitted to higher regions of the brain, such as the cerebral cortex. This process is essential for maintaining an adequate level of consciousness and alertness, allowing individuals to respond effectively to relevant stimuli.

A crucial aspect of the RAS is its role in **selective attention**. Through a mechanism known as the reticular activation mechanism, the RAS directs human attention to stimuli that it considers important, based on factors such as novelty, emotional significance, and relevance to current goals. Selective attention allows for focus on specific tasks, ignoring distractions and facilitating learning and problem-solving.

RAS not only helps focus attention but is also involved in the formation of **associative networks** within the brain. By selectively activating certain neural pathways in response to external stimuli, it helps to establish connections between different pieces of information. This process is crucial for learning, as it allows new knowledge to be integrated with existing schemes and concepts, fostering a deeper understanding of the topic in relation to the real world.

RAS is also closely linked to the regulation of the sleep-wake cycle and the maintenance of general cognitive functioning. RAS dysfunctions may be implicated in various neurological disorders, such as attention deficit hyperactivity disorder (ADHD) and narcolepsy, highlighting its importance for **cognitive health and well-being**.

The studies that laid the foundations for the understanding of RAS date back to the 40s and 50s of the twentieth century, thanks to the pioneering research of Giuseppe Moruzzi and Horace

Magoun. These scientists demonstrated the role of reticular brainstem formation in the regulation of arousal and consciousness. Subsequently, Bernard Baars' Global Workspace Theory further clarified how RAS interacts with other brain regions to modulate attention and awareness.

Fundamental contributions were also provided by the Spanish neuroscientist Joaquin Fuster, who studied the prefrontal cortex and its role in executive functions, and by the Italian Antonio Damasio, known for the somatic marker hypothesis, which integrates the emotional and motivational aspects of RAS-mediated learning. Michael Posner's theory of attentional networks has also identified the neural mechanisms underlying selective attention, which is closely linked to the functioning of the RAS.

The educational applications of the RAS

The educational applications of the RAS are many and promising. In the educational context, leveraging the understanding of RAS can lead to more effective and engaging teaching methodologies. For example, promoting novelty and unexpected stimuli can capture students' attention, while integrating emotionally meaningful content can make learning more impactful and lasting.

Active learning is the ideal approach to activate the RAS. Instructional strategies that encourage active participation, such as group discussions, problem-solving activities, and collaborative projects, can optimize student engagement and improve their ability to process and retain information.

Additionally, tailoring teaching methods to accommodate individual differences can increase students' intrinsic motivation and foster a sense of ownership in their learning journey. Flexible **teaching** not only improves knowledge acquisition, but also promotes the development of fundamental skills such as critical thinking, communication skills, creativity and resilience.

Understanding and exploiting RAS can lead to significant innovations in education, improving the effectiveness of teaching methodologies and fostering deeper and more lasting learning.

The potential of the RAS for the "Educational Venture" model

The new educational model proposed by "Educational Ventures" is based on an individual-centred approach, which considers the diversity of learning styles and encourages active student involvement. This paradigm aims to create an environment that not only imparts knowledge, but also stimulates curiosity, creativity, and a passion for learning. In this context, the integration of Network Learning (RAS) is essential to personalize the educational experience and exploit advanced technologies such as Virtual Reality (VR) and Augmented Reality (AR) to enrich learning with multisensory stimuli.

Networked Learning represents a significant advance in educational innovation, as it actively involves key actors in the educational process, fostering the development of transversal skills and promoting more meaningful learning. This participatory and collaborative approach could shape the new cooperative school model, enhancing students' cultural heritage and using the multiple facets of technological immersive learning to make the educational experience engaging and interactive.

Applying the RAS to the "Educational Venture" model can have the following positive impacts:

- **Meaningful learning**: thanks to the active participation and collaboration promoted by the RAS, students can acquire soft skills in a more meaningful and lasting way, linking learning to reality and their own experiences.
- **Development of Soft Skills**: the use of the RAS allows students to develop decisive skills such as effective communication, collaboration, problem-solving and flexibility, which are fundamental for personal and professional success.
- **Mindfulness and Reflection**: the RAS encourages students to be aware of their abilities and reflect on their actions, promoting personal growth and self-reflection.
- **Transferability of skills**: the soft skills acquired through the RAS are highly transferable, allowing students to apply them in different contexts and situations, improving their ability to adapt and solve problems.

In addition, networked learning fosters **awareness and appreciation of cultural diversity** among students, encouraging **active participation**, **inclusiveness**, and appreciation of one's

cultural roots. This dimension is particularly relevant in an educational context that aims to prepare students for a globalized and interconnected world.

By harnessing the brain's natural filtering system, reticular learning promises to transform classrooms into vibrant centres of discovery, facilitating deeper understanding and a lifelong love of learning. One of the main advantages of including the activation of the RAS in the Educational Venture training course is its ability to foster the development of transversal skills essential to face the challenges of the contemporary world, including:

- **Effective communication**: networking learning pushes students to articulate their understanding, express coherent ideas, and engage in constructive dialogue, mirroring communication needs in real-world contexts.
- **Empathy**: the RAS promotes an environment where empathy is central, helping students develop greater sensitivity to the needs and emotions of others, thus creating a more inclusive and understanding learning environment.
- **Flexibility**: thanks to Networked Learning, students are exposed to a variety of educational scenarios that require them to be flexible, promoting a mindset open to change and new challenges.
- **Problem Solving**: the RAS puts students in front of real and complex problems, stimulating them to develop innovative and pragmatic solutions. This strengthens their critical and analytical thinking skills by allowing them to solve problems creatively and effectively.
- **Teamwork**: the network approach encourages teamwork, allowing students to learn how to collaborate effectively, exploit the skills of their peers and work towards a shared goal, effectively managing group dynamics.
- **Conflict management**: in the context of network learning, students learn to deal with conflicts in a constructive way, trying to resolve them through dialogue and collaboration, thus improving cohesion and cooperation within the group.
- **Responsible decision-making capacity**: the RAS stimulates students to consider the consequences of their decisions, developing a sense of responsibility and reflecting on the possible impacts of their choices on a personal and collective level.

- **Reflective skills and critical thinking**: Networking encourages students to critically analyse information by relating it to practical scenarios. It also stimulates a deep reflection on one's actions, thoughts and emotions, promoting greater awareness of oneself and others.
- **Creativity and innovation**: by connecting classroom learning with real-life challenges, networked learning fuels creativity and innovation. Students explore alternative perspectives, devise inventive solutions, and adapt their approaches, cultivating an innovation-friendly mindset.
- **Resilience and adaptability**: networked learning cultivates resilience by exposing students to different experiences and uncertainties. Through iterative problem-solving and encountering setbacks, students develop adaptability, perseverance, and a growth mindset essential for navigating life's complexities.

Networked learning transcends traditional educational boundaries, allowing students to recognize the importance of their learning journey beyond school boundaries. By connecting theory with practice, students become active participants in their learning process, fostering a sense of belonging and intrinsic motivation.

For the full effectiveness of the model and to create an immersive learning environment, **the concept of RAS is accompanied by the integration of advanced technologies such as e-learning, VR and AR.** These technologies are particularly useful in fields that benefit from visual and experiential learning, such as in "Educational Venture". By simulating complex processes and environments, VR and AR allow students to interact in a more hands-on way, thereby deepening their understanding and retention of complex topics.

Learning is no longer limited to memorizing and applying knowledge but is considered as a continuous process to generate new knowledge and promote individual and social development.

Finally, in order to exploit RAS in the "Educational Venture" model, the use of techniques involving multiple sensory stimuli must be envisaged. In an educational model that integrates practical and interactive experiences, the RAS can help consolidate knowledge through activities that link theoretical information to students' personal and cultural experiences. The flipped classroom method, simulations and immersive exploration, for example, allow students to learn new

content and apply it through interactive discussions and reconstructions of real situations, stimulating creativity and innovation.

Networked Learning, integrated into the educational model of “Educational Ventures”, represents a forward-looking approach that could significantly improve the educational landscape, offering benefits not only in the cognitive and academic development of students, but also in their emotional and social growth.

META-SKILLS, SOFT SKILLS AND MOTIVATION

Meta-competences and soft skills are two fundamental concepts in the context of education and personal development, but they differ significantly in their purposes and application. Meta-skills represent high-level cognitive skills that allow individuals to manage and coordinate other specific skills. These skills include the ability to think critically, learn to learn, adapt to new situations, and be self-aware. For example, a person who possesses a strong capacity for self-regulation knows how to monitor and control his or her learning processes, adapting his or her strategies when necessary. Among the main theoretical contributions on the subject are those of Richard Boyatzis, Robert Sternberg and John H. Flavell. Boyatzis first explored different perspectives on competence in 1982, while Sternberg analysed higher-order competencies that allow individuals to adapt effectively. Flavell, on the other hand, delved into the concept of metacognition, which is fundamental for the development of meta-skills.

On the other hand, soft skills are practical and interpersonal skills that can be applied in various contexts. These skills include effective communication, the ability to work in a team, time management, empathy, and leadership. An individual with good communication skills can express their ideas clearly and actively listen to others, while a person with strong leadership skills can motivate and guide a group towards a common goal.

The main difference between meta-competencies and soft competencies lies in the level of application and the nature of the skills. Meta-competences operate at a higher level, regulating and coordinating the other competences; They are essential for continuous learning and adaptation to new situations. Soft skills are practical skills that improve effectiveness in various contexts, without necessarily coordinating other skills.

Meta-skills are more abstract and cognitive, involving complex mental processes such as critical reflection and self-regulation. Soft skills, on the other hand, are more concrete and interpersonal, directly concerning interaction with others and the management of daily activities. The distinction between competence and meta-competence is essentially theoretical: in order to be considered as such, a competence must be intrinsically reflective and expendable in several situations. In other words, competence must also be “meta” or not at all.

The meta-learning perspective sees learning as an indispensable opportunity for personal empowerment and growth. Hanging becomes an essential way of being and realizing oneself, an inalienable right that allows the individual to grow according to his experiences and the opportunities offered by his personal and cultural history. Meta-learning or continuous learning, moreover, especially when it fosters the development of meta-skills, can be an opportunity to build active citizenship, giving individuals a significant role in understanding and interpreting reality, as well as in decision-making.

Meta-learning has enormous potential in terms of developing communication skills, discussion, consensus-seeking, understanding reality and using thought and imagination. This investment promotes self-regulation, self-awareness and social interaction in students as key factors for success in learning and life. Meta-learning and soft skills are closely linked and mutually reinforcing. As students develop meta-learning, they become more aware of the learning strategies that work best for them, including ways to improve their soft skills. For example, an individual who practices meta-learning might reflect on how they manage time during a group project and try to improve this skill through mindful practice.

Similarly, soft skills can support meta-learning. Skills such as effective communication and teamwork can facilitate the sharing of learning strategies and mutual peer support, creating a collaborative and reflective learning environment.

The integration of meta-learning and soft skills into the educational process requires a deliberate, structured, holistic and inclusive approach. School curricula must be designed to include activities that promote both dimensions. Teachers, for example, may adopt teaching methods that encourage critical reflection and collaboration, such as project-based learning. At the center of training processes, or rather learning, there must not only be the transmission of knowledge, but above all the development of reflexivity and criticism, as well as the ability to continuously rework one's knowledge and skills; This is fundamental for metacognition, which **allows the individual to manage his or her knowledge independently**. Metacognition allows us to apply reflexivity to knowledge itself, allowing for the constant revision and adaptation of patterns of thought and actions, as well as social conventions and societal foundations.

Integrating meta-competences into the educational process also fosters the **development of transversal skills** such as critical thinking, creativity, collaboration and effective communication; all essential skills to prepare students to be active and competent citizens in an interconnected and rapidly changing world. In addition, the inclusion of meta-competences and soft skills in the school curriculum promotes **meaningful and lasting learning**, as it helps students understand not only what they learn, but also how they learn. The metacognitive approach makes learners aware of their own thought processes and enables them to adapt more effectively to future challenges. To be effective, the implementation of meta-skills requires a holistic approach that involves teachers, curriculum and educational contexts. Transversal skills must be able to be integrated organically into teaching activities in order to promote more meaningful and goal-oriented learning.

The metacognitive approach aims to gradually increase students' ability to take direct control of their cognitive processes. The teacher, as a facilitator, has the task of promoting a positive climate, guiding students towards **conscious and autonomous learning**, encouraging them to use their strategies, providing practical indications and constant support to improve them. Meta-cognition exerts an influence on cognition, including both learning strategies and problem-solving strategies, as well as various types of academic achievement that involve the development of such awareness among adolescents. Through the metacognitive teaching approach, students adopt an active and responsible attitude towards learning, as they are able to understand and reflect on their own perceptions, emotions, beliefs and feelings, as well as on the difficulties they may encounter during the educational journey.

The "metacognitive" student builds his or her intellectual heritage by asking questions, conducting investigations, and solving problems. The approach adopted promotes problem-solving and at the same time increases awareness of one's own actions and the processes involved. This new way of thinking has an immediate influence on self-perception and self-esteem, leading to tangible benefits, including **increased motivation**. By being aware of the strategies used, the student is able to identify the most efficient and effective ways to achieve educational success.

There are many school activities, both formal and non-formal, that can be used to implement meta-competences and soft skills in the learning process. These methods are designed to actively engage students rather than having them passively absorb information.

Here are some examples:

1. **Research projects**: the involvement of students in research projects encourages them to analyse data, ask questions and draw conclusions, thus favouring critical reflection, problem-solving and creativity.
2. **Simulations**: simulations of real or imagined situations allow students to practice skills such as problem solving, teamwork and uncertainty management.
3. **Role Playing**: through role-playing, students can improve their communication, empathic and relational skills, identifying themselves with different roles and learning to manage complex situations.
4. **Debates and discussions**: organizing debates and discussions on controversial topics encourages students to develop effective communication skills, critical thinking, and active listening skills.
5. **Project work**: working on multidisciplinary projects allows students to develop soft skills such as planning, organization, creativity, and problem-solving skills.
6. **Action-oriented activities**: involving students in practical activities that require the application of the acquired knowledge fosters the development of transversal skills related to practice and direct experience.
7. **Peer tutoring**: promoting peer tutoring where students teach and learn from each other encourages self-confidence, communication skills, and solidarity.
8. **Cultural and artistic activities**: promoting experiences related to cultural and artistic expression helps students develop creativity, empathy and awareness of themselves and their surroundings.
9. **Experiential learning**: engaging students in on-the-job learning experiences, such as visits to local businesses or nature parks, fosters active learning, critical observation, and practical application of knowledge.
10. **Creative and recreational activities**: activities such as creative writing, painting, music, or drama stimulate creativity, self-expression, and lateral thinking skills.

Many of the suggested methodologies and activities can be used to implement meta-competences and soft skills in the learning process, both within the classroom and outside it, such as in the schoolyard, gymnasium, urban park or any meeting place. The combination of these activities can provide students with a comprehensive, inclusive, diverse, robust, flexible, and multifunctional educational experience.

In addition, acquiring soft skills that are always up-to-date and knowing how to use them in different contexts leads students to develop **self-confidence as** they realize their abilities to face challenges successfully. An educational approach that includes the transmission of soft skills aims to prepare students not only with specific knowledge, but also with essential skills to face life's challenges safely and competently.

Transversal skills, as defined by the European Union, represent the skills necessary to navigate with awareness in an increasingly complex social context and to face the challenges of the interconnected digitized organizational models that characterize the current landscape. The Recommendation of 22 May 2018 of the European Council provided a structured and complete picture of these competences, summarising them in a unified matrix, thus outlining the specific aspects of each competence.

First and foremost, **personal, social and learning competence** focuses on the skills needed to effectively manage one's educational path, maintaining both physical and mental balance. It also includes the promotion of group collaboration and the management of interpersonal relationships in an inclusive and constructive way.

Citizenship **competence** enables the individual to actively participate in civic life, understanding the structures and rules of society, with a special emphasis on environmental sustainability.

Entrepreneurial competence focuses on the ability to conceive, manage and develop projects that generate social, cultural or economic value, thus contributing to the general well-being of society.

Finally, **competence in cultural awareness and expression** requires understanding and respecting the ideas and meanings communicated in different social contexts, through various

forms of cultural, creative and artistic expression. It also includes awareness of one's role in society and commitment to effective and meaningful communication.

Self-esteem, one of the transversal skills in the field of personal characteristics or "knowing how to be", plays a fundamental role in the approach to life and the challenges it presents. Self-esteem directly affects the individual's perception of oneself and the way in which one relates to the context. Being endowed with solid self-esteem means not only having self-confidence, but also being aware of one's abilities, talents and the resources at one's disposal. This awareness allows you to face ambitious goals and complex situations with determination and success, even when they arise unexpectedly. It also fosters the ability to take on roles of responsibility and leadership.

Self-esteem also involves a process of self-evaluation that includes the objective recognition of one's own skills, but also of any areas in which one can improve.

Encouraging students to develop strong self-esteem is of paramount importance, as it is a determining factor in maintaining intrinsic **motivation** and perseverance in the learning process. Good self-esteem provides the confidence to face school, work and personal challenges with determination and optimism, thus fuelling the desire to learn and grow continuously.

These skills not only stimulate reflection and behavioural skills essential for interacting in social and professional contexts, but also involve cognitive and behavioural processes. Their importance lies in their ability to be transferred and applied in different contexts, providing students with tools to adapt and act effectively in varied situations. In addition, it is essential to consider the value of these soft skills in students' self-orientation: they must be able to receive feedback on their actions and use it to adjust their ability to adapt to different contexts. Basically, soft skills enrich students' personal baggage with knowledge, skills and attitudes that make them capable of acting appropriately and effectively in complex situations.

Transversal skills, precisely because of their characteristics, require a renewal of school teaching methodology, aimed at enhancing the connection between formal, informal and non-formal learning contexts. The emotional and relational element takes on a central role in the educational process, becoming an integral part of continuous learning.

Soft skills can be acquired, improved and developed over time, offering significant advantages in various areas, including:

1. **Improved efficiency**: soft skills such as effective communication and time management are essential for optimizing interpersonal relationships and the organization of activities, ensuring greater productivity and meeting deadlines.
2. **Adaptability**: soft skills teach students how to adapt to new situations and how to solve problems in different contexts.
3. **Creativity and innovation**: the development of soft skills encourages creativity and innovation, as students learn to think outside the box and explore original solutions.
4. **Autonomy and self-learning**: students who develop soft skills become more autonomous in their learning, able to identify and pursue their knowledge and skills proactively.
5. **Improved interpersonal relationships**: soft skills include the ability to communicate effectively, work in a team, and resolve conflicts, helping to improve interpersonal relationships in both school and personal settings.
6. **Better school learning**: soft skills such as critical thinking and problem-solving can enhance school learning, helping students to better understand complex concepts and apply them effectively.
7. **Leadership skills**: soft skills can help students become effective leaders who can motivate others, take responsibility, and lead with empathy.
8. **Active citizenship**: soft skills include understanding of others, tolerance and social awareness, which are key to becoming responsible and active citizens in society.
9. **Resilience**: the ability to face challenges and overcome obstacles without being discouraged.

10. **Personal well-being**: the development of soft skills contributes to increasing self-esteem, self-confidence and self-confidence, emotional balance and the ability to manage stress, improving interpersonal relationships.

The process begins with inner work focused on self-knowledge and self-control, setting the stage for the next steps. Personal reflection serves to understand one's values, strengths and needs, promoting awareness, inner balance and self-esteem.

Subsequently, we move on to the phase of interaction with others through empowering relationships and effective communication; This involves giving oneself consciously and responding to the needs of others in an empathetic way.

Finally, the last phase involves the ability to direct change and lead with leadership. After understanding oneself and one's resources, being able to interact effectively with the surrounding environment prepares one to plan and implement positive and harmonious changes together with others.

Investing in the development of transversal skills represents a valuable asset for one's personal and professional future, offering essential tools to face complex challenges successfully. Integrating the teaching of soft skills into educational pathways contributes to students' personal growth, improving their self-esteem, their relationships and the achievement of short and long-term transversal goals, as well as helping them to be ready to face future challenges with awareness, resilience and adaptability.

It can be deduced, therefore, that competence goes beyond simple action; it implies a value orientation, an attribution of meaning, a conscious interpretation of the action and a reference to the context and other subjects or factors involved. Using certain skills appropriately also requires a keen sense of responsibility. For this reason, assessment methods must also adapt to assess these skills effectively. This could involve more formative assessments, self-assessments and peer assessments, alongside traditional exams, with constructive feedback and focused on improving the application of meta-competences and soft skills.

Continuing professional development that helps teachers understand how to teach and assess these skills can include workshops on collaborative teaching methods, assessment design, or

integrating technology into the classroom.

Finally, the learning environment also plays a crucial role in the development of skills. It is essential to create a classroom culture that encourages experimentation, risk-taking, and reflection, allowing students to explore, fail, and learn from their mistakes in a safe space.

To summarize, the implementation of meta-competences and transversal skills in the curriculum and in the learning process in general, the following strategy is proposed divided into categories:

STRATEGY FOR THE IMPLEMENTATION OF META-SKILLS AND SOFT SKILLS IN TEACHING

Design and integration of the teaching curriculum:

- Incorporate competencies into learning objectives: ensure that the curriculum explicitly includes meta-competencies and soft skills in its learning outcomes.
- Interdisciplinary projects: devise projects that require the application of these skills in different subjects, encouraging students to make connections between disciplines.
- Gradual meta-learning activities: gradually building students' skills through increasingly complex tasks and challenges.

Teaching methods:

- Active learning: use teaching methods that require active student participation, such as group discussions, problem-based learning, and case studies.
- Project-Based Learning (PBL): encourage students to work on real-world projects that require collaboration, critical thinking, and problem-solving.
- Flipped Classroom: use flipped classroom templates where students prepare outside of the classroom and engage in interactive activities during class hours.

Monitoring, Evaluation and Feedback:

- Formative assessment: use formative assessments to provide continuous feedback on the development of meta-competences and soft skills by students.
- Soft Skills rubrics: develop clear rubrics that outline expectations for soft skills and use them in assessing student work.

- Self-assessment and peer assessment: encourage students to value their own and their peers' contributions and the development of these skills.
- Progress tracking: use tools and methods to track students' progress in developing meta-competencies and soft skills.
- Feedback mechanisms: implement robust (timely) feedback mechanisms from students, teachers and external stakeholders to refine and improve the learning process.

Learning environment:

- Collaborative spaces: create physical and virtual spaces that facilitate collaboration and
- communication.
- Technology integration: using digital tools and platforms that support the development of digital literacy and other soft skills.
- Supportive atmosphere: foster an environment that encourages experimentation, creativity, and risk-taking.

Professional Development for Educators:

- Training programmes: to offer professional development opportunities focused on teaching meta-competences and soft skills.
- Collaborative teaching: encourage teachers to collaborate and share best practices to integrate these skills into their teaching.
- Reflective practice: promoting reflective practice among educators to continuously improve their methods and strategies.

Student-centred approaches:

- Personalized learning: tailor learning experiences to meet each student's individual needs and strengths.
- Mentorship and Coaching: provide mentorship and coaching notions and tools to support students in the development of their meta-competences and transversal skills.
- Extracurricular activities: encourage participation in extracurricular activities that provide an opportunity to practice these skills.

Implementation examples:

- Case studies: use real-world scenarios in various subjects to develop critical thinking and problem-solving skills.
- Debates and presentations: incorporate debates and presentations to improve communication and leadership skills.
- Peer Learning Groups: form peer learning groups to foster collaboration and teamwork.
- Digital projects: assign digital projects that require the use of various technological tools, improving digital literacy.

Enhancing awareness of learning processes and metacognitive skills is feasible. It is essential to understand and satisfy individual needs while respecting the uniqueness of each one. Dealing with change involves learning to live with uncertainty, accept different points of view, enhance critical and self-critical thinking, collaborate and take responsibility, and adapt to progress and your time consistently.

NEW TECHNOLOGIES, DIGITAL SKILLS E LIFELONG LEARNING

The evolution of new technologies has radically transformed many aspects of daily life, from the economy to communication and education. Digital technologies, in particular, have created unprecedented opportunities for lifelong learning, allowing individuals to acquire new skills and knowledge throughout their lives.

In schools, the integration of technological tools such as computers, interactive multimedia whiteboards (IWB), tablets and e-learning platforms has revolutionized teaching and learning methods. Technology has made possible a more personalized and flexible education, allowing students to learn at their own pace and according to their own learning style. New teaching practices for students defined as “digital natives” are closely linked to technologies and this change requires the adaptation of teaching approaches in order to offer more engaging and meaningful learning. If effectively leveraged, technologies can motivate students and foster greater generational interaction.

The adoption of innovative practices such as the inverted classroom, supported by new educational technologies, allows teachers to propose more complex activities that stimulate students’ critical thinking, promoting greater depth in learning and facilitating closer collaboration between teachers and students. Some of the ways in which new technologies can play a significant role include:

- **Access to global educational resources**: thanks to the internet, you can access a wide range of online educational resources, including courses, videos, tutorials, e-books, and e-learning platforms. This allows individuals to gain new skills and deepen their knowledge on a variety of topics, regardless of their background or geographic location.
- **Personalized learning platforms**: Artificial Intelligence and intelligent technologies can be used to develop personalized learning platforms, tailored to the specific needs of each individual, allowing them to progress at their own pace and according to their own learning style, thus increasing the effectiveness of education.

- **Collaboration and sharing tools**: digital technologies facilitate collaboration and the sharing of resources and knowledge between individuals around the world. Platforms like Google Drive allow students to work together, share ideas, and collaborate in real-time, regardless of their geographic location.

- **Learning through games and simulations**: digital technologies enable the creation of educational games and simulations that make learning engaging and fun, especially useful for teaching complex concepts or providing hands-on experience in various industries.

- **Online and distance learning**: digital technologies enable online and distance learning, providing flexibility for those who want to continue learning while working or managing other commitments. Through online courses, webinars, and streaming classes, students can access education from anywhere, anytime with an internet connection.

New technologies are a valuable ally in lifelong learning, providing innovative tools to promote effective, flexible and tailored learning to individual needs. The introduction of these technologies in teaching goes beyond the simple use of digital resources, transforming the way of teaching and learning to respond to the evolution of society.

Technologies can revolutionize teaching methods and trigger new forms of educational experimentation considering several aspects:

- **Accessibility and flexibility**: democratization of learning with access to resources anywhere and anytime (MOOCs, webinars, educational apps).
- **Personalized learning**: algorithms for tailor-made content and feedback, adapted to individual needs.
- **Global collaboration**: online learning communities that facilitate sharing and collaboration across geographical boundaries.
- **Immersive experiences**: use of AR, VR and MR to integrate theory and practice, improving engagement.

- **Continuous evaluation**: real-time monitoring of progress and timely feedback based on data analysis.
- **Lifelong learning**: promotion of curiosity, critical thinking, and adaptability for continuous development.

Along with the use of electronic devices, it is important to focus on acquiring the specific skills in using these technologies; it is not only about knowing how to use digital tools, but also about knowing how to effectively guide students so that they can learn meaningfully through the digital resources available.

DigComp 2.2

In the contemporary landscape of education and employment, technological competence has emerged as a resource par excellence, particularly in the European context. Schools' priority is to equip the next generation with the digital fluency needed to navigate an increasingly complex and interconnected world.

The DIGCOMP 2.2 framework is the European framework that outlines the digital skills necessary for active citizenship and full participation in society and the labour market. The European Commission considers digital skills to be fundamental in lifelong learning as they are an individual process aimed at acquiring skills and roles that involves lasting change over time.

The elaboration of the DigComp began in December 2010 thanks to the *Joint Research Centre* on behalf of the *Directorate General for Education and Culture*. This process involved various stages, including concept mapping, case study analysis, online consultations, expert workshops and stakeholder engagement. The active involvement of more than 150 stakeholders contributed to the creation and refinement of the framework.

DigComp 1.0, published in 2013, identifies digital competence through a combination of 21 competences grouped into five macro-areas, each numbered from 1 to 5 and with a detailed description to reflect the needs of the digital context.

This framework was subsequently updated: version 2.0 in 2016 revised the conceptual framework and descriptors of specific competences, while version 2.1 in 2017 expanded the levels of mastery of the competences envisaged and provided new examples of application in various contexts.

The framework, in its latest version published on March 22, 2022, identifies five main areas:

1. **Digital literacy**: includes the ability to identify, locate, access, retrieve, store, organize, and analyse digital information.
2. **Communication and collaboration**: includes participation in the digital society through communication technologies, sharing of information and digital content, and collaboration through digital tools.
3. **Digital content creation**: this involves the ability to create and edit digital content in a variety of formats, including text, images, audio, and video.
4. **Security**: this refers to the protection of personal information and the management of digital identities, as well as an understanding of cybersecurity principles and mitigating online risks.
5. **Problem-solving**: includes the ability to identify needs and problems, find solutions, and use digital tools to solve them.

The first three areas are specific to certain digital contexts, while the last two are transversal to all online activities. Although problem solving is present in all skills, a specific area has been dedicated to it to underline its importance.

Each area is divided into 21 specific skills and levels of mastery ranging from BASIC 1 to ADVANCED 8.

The evolution to version 2.2 introduced Dimension 4 with new examples on the use of artificial intelligence in everyday life and on the responsible approach to digital technologies.

Dimension 5 provides use cases in specific learning and employment contexts.

Each dimension has specificities that favour flexibility in the application of the reference framework, allowing adaptations to contingent needs and at the same time promoting better

interoperability and comparability between the different models. For example, you can only use Dimensions 1 and 2 without necessarily having to refer to the mastery levels (Dimension 3).

The main objective of this update is to ensure that all European citizens can use digital technologies, including those related to artificial intelligence, competently and critically. In addition, it aims to improve understanding of AI, promote inclusive and accessible digital literacy at all levels of society, as well as foster awareness of the importance of digital accessibility.

DigComp 2.2 also emphasizes the importance of digital ethics and responsible citizenship, promoting a culture of respect and responsibility in the digital world.

Since its inception, DigComp has significantly influenced digital education policy, curriculum design, and certification standards across the EU. He has been instrumental in integrating digital skills into education systems, guiding the training of educators and shaping digital literacy programs for individuals of all ages. In addition, the framework supports government policymaking by providing a structured approach to improve digital inclusion and ensure that the population is equipped to orient themselves and contribute to the digital economy.

DigComp 2.2 is an ambitious project that provides a common language for identifying and describing digital skills, helping to reduce the gap with other European countries and supporting the EU's goal of having at least 80% of the population with basic digital skills by 2030.

The implementation of DigComp across the EU supports efforts to harmonise education and training systems, making it easier for people to move and study or work in different countries within the EU and ensuring uniformly high levels of digital skills.

State of the art on the use of technological tools in Italy, Turkey, Czech Republic and Poland

Italy, Turkey, the Czech Republic and Poland are making considerable efforts to integrate digital technologies into their education systems, each with unique approaches and different focuses.

Each of the Partner Countries of “Educational Venture” has adopted specific strategies, offering a varied and rich panorama of teachings.

Italy

Italy has embarked on a decisive path towards the integration of technological tools into the education system, supported by initiatives such as the National Digital School Plan. This program has promoted the adoption of interactive multimedia whiteboards (IWBs), tablets, educational software, and electronic directories in schools. IWBs, for example, offer dynamic visual support that facilitates interactive learning, while tablets allow flexible access to educational resources and promote personalized and collaborative learning. Interactive flat screens (VET) foster interaction and collaboration between students, while electronic registers improve efficiency in attendance management and communication with families.

In addition, Italy has invested in the continuous training of teachers to keep them updated on new technologies and teaching methodologies. This holistic approach not only improves the quality of education but also helps to reduce the digital divide, offering learning opportunities even in the most disadvantaged areas.

Turkey

Turkey has adopted a systematic, structured and well-funded approach to the integration of technologies in education and other sectors. Among the initiatives undertaken by the Turkish government, one of the main projects was the “Fatih Project” (Movement to Increase Opportunities and Technology), which introduced the use of tablets and interactive whiteboards in schools, improving access to digital resources for students and teachers. In addition, online platforms for distance learning have been developed, especially during the COVID-19 pandemic, ensuring educational continuity. The government has also invested in teacher training to make

them competent in the use of digital technologies. Finally, high-speed internet in schools has been enhanced to support the use of online teaching tools.

In addition, Turkey promotes collaboration between schools, universities and technology industries, creating an innovation ecosystem that supports the development of advanced digital skills. This approach not only prepares students for the 21st century job market, but also stimulates the country's economic growth and global competitiveness.

Czech Republic

The Czech Republic has seen a rapid adoption of digital technologies in the education sector, supported by government initiatives and European investments. The *"Digital Czechia"* programme aims to improve access to digital technologies and promote digital literacy at all levels of education.

Czech schools use a variety of technological tools, including IWBs, tablets, and e-learning platforms. A distinctive element is the widespread use of immersive technologies such as Augmented Reality (AR) and Virtual Reality (VR), which offer practical and immersive learning experiences. For example, students can explore historical sites in VR or conduct virtual science experiments, bridging the gap between theory and practice.

The Czech Republic also places a strong emphasis on continuous teacher education and digital inclusion, ensuring that all students, regardless of their socioeconomic background, have access to technological resources and learning opportunities.

Poland

Poland has also made significant progress in integrating digital technologies into the education system, led by the "*Polish Digital School*" program. This program focused on expanding digital infrastructure in schools, providing digital devices and improving access to high-speed internet.

Polish schools adopt a range of technological tools, including IWBs, tablets and educational software. One area of particular concern is the integration of artificial intelligence (AI) technologies into education, with the development of adaptive learning platforms that personalize the educational experience to the individual needs of students.

Poland, like the other three countries, promotes international collaboration and the sharing of best practices through European projects such as Erasmus+, which facilitates exchanges between students and teachers and the adoption of innovative methodologies.

Examining the state of the art of the use of technological tools in Italy, Turkey, the Czech Republic and Poland, both commonalities and significant differences emerge that reflect the different priorities and approaches of each country. In common, all four countries are investing significantly in the digital infrastructure of their schools. Italy, with its National Digital School Plan, and Turkey, with the "Fatih Project", show a similar commitment to improving Wi-Fi networks and acquiring digital devices such as tablets and laptops. Similarly, the Czech Republic and Poland have launched national programs to expand access to high-speed internet and equip schools with advanced technological tools.

Another common point is the emphasis on continuous teacher training. Everyone agrees that in order to effectively integrate digital technologies into education, teachers need to be well prepared and up to date. Italy and the Czech Republic, in particular, underline the importance of keeping educational staff up to date with new technologies and teaching methodologies, thus ensuring that the adoption of technological tools is accompanied by a pedagogically sound use.

Despite the commonalities, there are slight differences that reflect the different strategies and priorities. Turkey, for example, places a strong emphasis on the development of online learning platforms and data privacy. This approach results in schools having learning management systems in place that comply with safety standards, ensuring a safe learning environment for all students.

Italy, on the other hand, has made significant progress in adopting interactive tools such as interactive multimedia whiteboards (IWBs) and interactive flat screens (IFPs). These tools have been particularly effective in promoting interaction and collaboration in the classroom, making learning more dynamic and engaging.

The Czech Republic stands out for its advanced use of immersive technologies such as augmented reality (AR) and virtual reality (VR). These technologies offer hands-on learning experiences that go beyond traditional teaching methodologies, allowing students to explore virtual environments and conduct experiments in a safe and interesting way.

Finally, Poland focuses on the integration of artificial intelligence (AI) in education. This country is developing adaptive learning platforms that tailor the educational experience to the individual needs of students in order to improve the effectiveness of learning and provide targeted one-on-one support.

The future of education in Europe will depend on the ability to continue to innovate and adapt to new technologies, creating learning environments and good practices that promote continuous growth.

New AR and VR devices

Augmented Reality (AR) and Virtual Reality (VR) technologies are revolutionizing various industries, including education. The ability of these technologies to create immersive and interactive experiences offers new opportunities for learning, both inside and outside the classroom.

Virtual Reality (VR) immerses users in a whole new world, independent of the real world. Using devices such as VR headsets and headsets, users are completely detached from the real world and can explore detailed and interactive virtual environments. The applications of VR range from gaming to military training, flight simulations, corporate environments, and personal and professional development. In art, VR is used to create immersive and interactive artworks that transform the viewers' experience.

VR is particularly effective in educational simulations, where it can provide an interactive three-dimensional experience of a real job, process, or action. For example, students can explore the human body in detail, participate in historical reenactments, or practice skills in safe and controlled environments. VR simulations can also be used to train practical skills safely, such as piloting aircraft.

Augmented Reality (AR) superimposes digital elements on the real world, expanding the perception of the surrounding environment with interactive information. Using devices such as smartphones, tablets, and AR glasses, users can see virtual objects integrated into their real-world environment. A popular example of AR is the game "Pokémon Go," which introduced millions of people to this technology by overlaying virtual creatures on the real world.

AR has found practical applications in fields as diverse as marketing, education, medicine, mobility, design and tourism. In the education sector, AR can enhance learning by overlaying contextual information in real-time, making it easier to understand complex concepts through interactive visualizations. For example, AR applications can show three-dimensional models of molecules in chemistry or historical reconstructions in history lessons, making learning more engaging and intuitive. In addition, AR-enhanced textbooks and learning materials can provide supplemental information, interactive quizzes, and multimedia content, catering to different learning styles and preferences.

Unlike Virtual Reality, which creates fully immersive digital worlds, Augmented Reality maintains awareness of the real environment, allowing users to interact with both simultaneously. VR requires dedicated headsets and controllers and offers totally immersive experiences, for example in gaming or simulation; On the other hand, AR is easily accessible through devices such

as smartphones, tablets and AR glasses, and is used to enrich the user experience, providing additional information and improving interaction with the real world. From the point of view of physical involvement, in AR the user can move freely and interact with the surrounding environment, while in VR the user is confined to the virtual environment and physical involvement can vary depending on the type of application and the devices used.

The use of these technologies in teaching and training has a positive impact on student outcomes, increasing student engagement and stimulating the teaching staff. They also help remove educational barriers and improve learning potential, contributing to the overall well-being of students.

New technologies, including AR and VR devices, offer unique opportunities to extend learning beyond the classroom walls. These technologies can transform abstract concepts into immersive experiences, fostering deeper understanding and stimulating a love of learning. They can support personalized learning paths, adapting to the needs of individual students and suggesting resources and activities that meet their strengths and weaknesses.

Interactive platforms, such as educational apps, simulations, and VR experiences, can make learning more exciting. Similarly, online collaborative tools allow students to work together on projects even if they are geographically dispersed, improving teamwork, communication skills, and problem-solving. Video conferencing and educational forums connect students with experts and peers from around the world, broadening their perspectives and encouraging cultural exchange.

Integrating new technologies into learning models

Teaching is basically a form of communication, both verbal and non-verbal, traditional and technological, which has evolved considerably with the advent of the Internet. Digital transformation has led to the creation of new communication channels and virtual spaces, which act as facilitators of learning, expanding the possibilities of dissemination and access to educational content.

Thanks to digital tools, it is possible to process and transmit large amounts of information in an immediate, efficient, simple and always up-to-date way. Technology facilitates communication for the entire school community, involving not only the pupils, but also the teaching staff, families and the students themselves. The virtual world offers the possibility of creating educational environments and communities, where experiences and best practices can be shared to foster and track student progress.

Teaching materials and digital tools make the teaching-learning process more stimulating and improve the classroom environment, complementing the importance of physical presence. Additionally, they allow for content customization to meet the needs of each student, providing greater flexibility.

The integration of technology into teaching offers several significant advantages:

- **Completion of student education**: the label “digital native” does not automatically guarantee technological competence; therefore, it becomes essential to educate students on the correct use of digital tools and make them aware of their potential and risks.
- **Leading role of teachers**: teachers and educators have the opportunity to guide students in the digital world to develop critical thinking and teach responsible use of the network.
- **Active learning**: students prefer to learn through hands-on experience, making active learning one of the most effective methods.
- **Interactive content**: technology enables the creation of interactive content, which increases student engagement and facilitates learning.
- **Personalization of learning**: digital platforms allow for greater flexibility and personalization of content to fit the individual needs of students.
- **Central role of the student**: the use of digital devices allows students to take an active role in their own learning, with the teacher as their guide.
- **Preparing for the future**: the use of technologies prepares students for the skills required in the ever-changing world of work.

Using VR and AR technology, students have the opportunity to move around in a completely new virtual environment, which becomes an interactive learning space for them. Artificial intelligence also plays a key role by allowing the personalization of the learning process.

To effectively integrate new technologies into student experiences, it's critical **to align these technologies with the school curriculum**, ensuring that they reinforce the concepts learned in the classroom. AR and VR technologies should be used as complementary tools that help to better visualize and understand complex concepts.

AR and VR technologies can **support personalized learning paths**, allowing students to proceed at their own pace and according to their interests and needs. Through interactive and adaptive platforms, it is possible to monitor the progress of students and offer personalized content and activities that respond to their strengths and areas for improvement. This personalized approach can increase student engagement and motivation, making learning more effective and engaging.

The use of AR and VR technologies can **transform students from passive spectators to active participants**. Increased engagement is one of the main benefits of using technology in the classroom. Immersive and interactive experiences give students the ability to explore and manipulate information dynamically, fostering deeper learning. For example, in a history lesson, students can "visit" historical sites and participate in past events through VR simulations, living the experiences firsthand and developing a more emotional and contextual understanding of historical events.

The integration of digital technologies into education also requires training students in **digital citizenship**. It is crucial to teach students to use technologies responsibly, safely, and ethically. This includes being aware of cybersecurity, protecting personal data, and behaving respectfully and appropriately online. Educating students about digital citizenship prepares them to face the challenges of the digital world in a conscious and critical way.

To effectively integrate AR and VR technologies, it is crucial to provide teachers with **adequate training**. Teachers need to be trained not only in the technical use of devices, but also in pedagogical strategies for incorporating these technologies into their teaching. Training should

include practical sessions and workshops that allow teachers to experience technologies directly and develop the skills needed to use them effectively in their lessons. In addition, it is important to provide ongoing support through educational resources, technical assistance, and communities of practice where teachers can share experiences and best practices.

Involving parents and friends in the process of integrating technologies is essential to ensure the success of educational initiatives. Educators can provide parents with resources and guidelines to support the use of educational technologies at home, helping to create a continuous learning environment. Collaboration with parents can also include information meetings and training sessions to explain the benefits of new technologies and how they can be used to support their children's learning.

An important aspect of integrating AR and VR technologies is ensuring that all students have **equitable access** to these resources. This includes addressing the digital divide by ensuring that students with fewer financial resources have access to the necessary devices and a reliable internet connection. In addition, it is important to develop content and applications that are accessible to students with disabilities, using assistive technologies and designing inclusive educational experiences that can be enjoyed by all students.

To assess the effectiveness of the integration of AR and VR technologies, **monitoring and evaluation systems** must be implemented. These systems can collect data on technology use, student engagement, and learning outcomes. The information collected can be used to make continuous improvements to educational practices, ensuring that the technologies actually contribute to improving student learning.

There are numerous examples of schools and institutions that have successfully integrated AR and VR technologies into their learning models. For example, some schools use VR simulations for science lessons, allowing students to explore natural environments and scientific phenomena in an interactive way. Other schools use AR applications for learning mathematics, overlaying three-dimensional objects on textbooks to facilitate the understanding of geometric concepts. These examples demonstrate how technologies can be used to enrich learning and make education more engaging and relevant.

Despite the many benefits, integrating new technologies also presents challenges. The digital divide is a major concern, as not all students have access to the same technological resources or a reliable internet connection. Additionally, it is important to manage screen time to avoid overuse of technology at the expense of other educational activities. Finally, the common culture that arises from exchanges between schools, institutions and companies is essential to align students' skills with the needs of society and the labour market. Teaching must adapt to social changes, but it can do so by exploiting the same tools that children use on a daily basis, such as smartphones or the virtual worlds of the metaverse.

Integrating new technologies into students' extracurricular experiences

New technologies allow students to access a wide range of information from different sources. This expansion of the resources available allows students to deepen their knowledge in more detail than traditional materials. Easier access to information not only supports learning but also fosters the development of critical thinking and research skills.

E-learning platforms, educational applications, and online collaboration tools provide **flexible learning opportunities that can be adapted** to students' individual needs. Emerging technologies such as VR and AR offer immersive learning environments, allowing students to learn at an individual pace and develop critical skills in an engaging way.

Educational technologies, such as interactive educational apps, educational games, and online platforms, **make learning more engaging and motivating**. These digital tools stimulate students' interest, promoting an active and participatory approach to learning. Gamification, in particular, has proven effective in keeping students' motivation high, transforming traditionally boring tasks into fun and rewarding challenges.

New technologies **facilitate collaboration and communication** in new and innovative ways. Social media platforms, instant messaging apps, and other communication technologies allow students to work together on projects, exchange ideas, and share experiences both inside and

outside the classroom. Not only does this improve students' communication skills but it also fosters global collaboration, allowing students to connect with peers from different cultures and backgrounds.

Through the use of advanced technologies, students develop **practical skills** that will be critical in their future careers, such as the ability to use complex software, programming, and technological problem-solving.

Mobile technologies, online educational platforms and applications **enable learning anywhere, anytime**. Students can use educational resources while traveling, at home, or during internships, constantly expanding their knowledge and skills. This flexible approach to learning not only makes education more accessible but also allows students to better manage their time and learn at their own pace.

Access to a variety of educational paths, materials, and tools allows students to explore their interests and passions in a more **interactive** way. Students can learn to code, develop artistic skills, or explore issues related to science and technology through interactive online courses and applications. This not only enriches their educational journey but also helps them discover and cultivate passions that could influence their future choices.

Augmented reality and virtual reality technologies offer students completely new opportunities for **experiential learning**. They can explore faraway places, discover history or science through virtual journeys and simulations that make learning more immersive and engaging. This type of learning not only makes the lessons more interesting but also fosters a deeper and more lasting understanding of the concepts studied.

Using new technologies outside of school allows students to develop **digital skills** that are essential in today's world. Learning how to use various tools, programs, and applications not only enriches their education but also prepares them for everyday and professional life. Digital skills have become a critical component of modern education, essential for success in many professions and in managing daily life.

Another amazing benefit of VR, AR, and AI technologies is their **ability to support students with learning disabilities**. Through alternative learning environments and interactive tools, these students can find new ways to understand difficult concepts and develop their skills. Technologies can be used to create personalized learning experiences that consider the specific needs of each student, thereby improving their educational outcomes and overall well-being.

Integrating new technologies into students' experiences outside of the classroom environment brings numerous benefits, allowing them to develop themselves, learn through experience, and expand their horizons in innovative and engaging ways.

Technology transforms learning into a continuous, lifelong process that extends beyond the walls of the classroom. In addition, through technology, students can connect with their peers around the world, learning about different cultures and perspectives, promoting cultural empathy, inclusivity, and global citizenship. Students can participate in international projects and collaborations, which enrich their educational experiences.

Despite the benefits of new technologies and the enormous potential of VR, AI and AR, there is a need to be aware of the risks associated with them, such as social isolation, dependence on technology, the risk of violating the privacy and security of personal data, the spread of false information and misinformation, the loss of interpersonal skills or the emergence of digital inequalities. It is worthwhile to conduct regular analyses of the impact of these technologies on students and take action to minimize the risk of them occurring and take preventive measures if potential adverse effects are detected.

CIVIC AND SOCIAL COMPETENCES

Civic and social competences, which are essential for the full involvement of individuals in society and for promoting constructive and inclusive coexistence, include a wide range of skills and behaviours that enable people to interact effectively in social, school and work life, resolve conflicts when necessary and actively contribute to the well-being of their communities. These skills are the foundation of a healthy democracy, a thriving workforce, and an empathetic and understanding society. Civic skills enable individuals to actively participate in their communities and government, promoting critical thinking, the ability to analyse information from different points of view, and effective communication. Similarly, social skills are essential for building strong relationships, fostering collaboration, and promoting a more just and equitable society.

The fundamental skills that an active and responsible citizen must possess include:

- **Knowledge and civic engagement:** understanding knowledge and civic engagement involves recognizing the rights and responsibilities inherent in citizenship within various government and community contexts. This includes an in-depth understanding of political processes, legal frameworks, and civic norms. This skill allows individuals to actively participate in democratic practices and community activities, such as voting, engaging in public service, and navigating government systems. This commitment is essential to sustain democracy and promote community cohesion.
- **Critical thinking and decision-making:** critical thinking and decision-making are integral to the effective use of civic and social competences, particularly in addressing and evaluating social issues. These skills require the ability to critically evaluate information, appreciate different points of view, and make reasoned decisions that consider social complexities. They are essential for participating in meaningful debates, influencing public policy, and making personal choices that reflect a deep understanding of civic responsibilities.
- **Communication skills:** effective communication is essential for active participation in the social and civic spheres. It includes the ability to listen actively, verbal and non-verbal communication, and the articulation of ideas and opinions in a clear and respectful

manner. These skills extend to negotiation, persuasion and engagement in dialogues that promote constructive outcomes, which are crucial for resolving conflicts and building consensus in different contexts.

- **Social and ethical responsibility:** the components of social responsibility and ethics in civic and social skills involve recognizing and responding to the impact of one's actions on others and the community at large. Adherence to ethical standards and demonstrating integrity in both personal and public life are paramount. These principles guide individuals to contribute positively to their communities and uphold the values of equity and justice.
- **Empathy and cultural competence:** empathy, combined with cultural competence, constitutes a critical aspect of civic and social skills. Empathy allows individuals to understand and share the feelings of others, facilitating compassionate interactions. Cultural competence builds on this by enabling effective interactions with people from diverse cultural and socioeconomic backgrounds, thus promoting inclusivity and respect in multicultural contexts.
- **Teamwork and collaboration:** teamwork and collaboration are key in both community settings and the workplace. These skills involve the ability to cooperate with others, understand group dynamics, and pursue common goals. Effective teamwork increases productivity and fosters the collaborative spirit that is essential for achieving collective goals and maintaining harmonious relationships.
- **Leadership skills:** leadership in the context of civic and social competencies involves directing and inspiring others to achieve common goals and to work harmoniously toward shared goals. This skill often involves the ability to motivate and mobilize community members, manage conflict, and lead civic or community initiatives. Effective leadership is key to initiating change and guiding collective efforts towards positive outcomes.
- **Digital skills:** promoting ethical use of information and technology builds resilience to disinformation and junk news through media and information literacy, including 'solutions journalism'. Inspiring and harnessing ethical and informed uses of technologies to promote democracy serves to protect citizens and help them understand the benefits of digital tools such as AI.

In addition, nowadays, citizenship education must also take into account issues related to global challenges such as environmental protection, human rights and tolerance, so that young people become informed and engaged citizens not only on a local scale but also on a global scale.

The learning of these skills takes place in various contexts, both formal and informal, such as the school environment, educational and social activities, volunteering and interaction with different communities; experiences that provide individuals with the opportunity to improve their personal, interpersonal and intercultural skills, thus contributing significantly to social cohesion and civic progress.

Schools, in particular, have a responsibility to provide students with the knowledge, skills and values necessary to become responsible citizens. Building the foundation of civic education includes understanding democratic principles, citizens' rights and responsibilities, and the importance of active participation in the community. Integrating these concepts into the school curriculum, through subjects such as history, social studies, and literature, is critical.

Education for responsible citizenship goes beyond the teaching of democratic rights and structures; it requires empathy, tolerance, cooperation, justice, respect for different perspectives, and the ability to engage in constructive dialogue. Civic and social skills are critical to developing students' ability to interact with peers, understand social structures, and engage in community issues. Social-emotional learning programs can equip students with these skills, promoting emotional awareness, conflict resolution strategies, and responsible decision-making. Through various initiatives, such as anti-discrimination campaigns, charity drives, volunteer and conflict resolution programs, the school can actively shape students' attitudes and teach them how to be responsible members of society.

Educating for citizenship means starting students towards making conscious choices, in a path of lifelong learning; it means preparing them to live as responsible and participating citizens, providing them with the tools to acquire a set of fundamental skills that include the ability to face challenges as members of a global society, to understand and appreciate cultural diversity, to exercise critical thinking, to adopt non-violent approaches to conflict resolution, to adapt their lifestyle to preserve the environment and to be sensitive to the protection of rights Human.

In practice, encouraging students' active participation in responsible citizenship can take place through different educational approaches:

- **Service Learning**: connecting classroom learning with community service allows students to apply knowledge by responding to local needs, building teamwork and communication skills.
- **Student Government**: participating in student government provides students with a platform to experience democratic processes.
- **Mock elections and debates**: simulations such as elections and debates help students understand different points of view and develop communication and critical thinking skills.
- **Promotion of a responsible school culture**: a school culture based on respect, inclusiveness and democratic decision-making fosters the development of these qualities.
- **Respectful Dialogue**: encouraging open discussions about important issues, even when there are disagreements, teaches students the value of civil discourse and critical thinking.
- **Inclusive practices:** creating a school environment that celebrates diversity and promotes inclusion prepares students to navigate the increasingly complex world they will inherit.
- **Leadership opportunities for students:** Enabling students to take responsibility for their learning environment through leadership opportunities fosters a sense of responsibility and builds skills that are essential for future civic engagement.
- **Participation in European projects:** school partnerships in Erasmus Plus initiatives, such as "Educational Venture" can foster an open-minded attitude by developing themes and practices to be analysed, discussed and shared within the different school communities of the European Union.

Approaches to citizenship education in Partner Countries

Considering that school plays a crucial role in educating young people, shaping their perspectives and values, it is essential to examine how each country's education policy promotes responsible citizenship through educational policies, curricula and teaching methodologies.

Italy

In Italy, citizenship education has a long history and has undergone significant changes over the years. Since the Decree of the President of the Republic of 13 June 1958 n. 585, civic education has been formally introduced in secondary schools. Although initially limited to two hours per month, this initiative represented an important first step towards the formation of aware citizens.

Later, the democratization of education led to the establishment of the comprehensive middle school in 1962 and the introduction of civic education as a specific subject in the school curriculum in 1979. Civic education was further strengthened in the elementary school curricula of 1985 as a "pedagogy of the Constitution" and with the National Guidelines for Curricula of 2004, where the concept of "education for civil coexistence" replaced that of citizenship.

A significant turning point was Law 169/2008, which introduced the teaching of citizenship and the Constitution, and the subsequent Law 92/2019, which extended civic education to all levels of education, including pre-primary education. This law placed more emphasis on the outcomes of civic education, introducing a final assessment for this topic and promoting essential civic skills such as critical thinking, problem-solving, and responsible decision-making.

Italian schools, such as the Francesco D'Assisi High School, integrate civic education into curricular subjects, promoting digital citizenship and using tailor-made projects to involve students in activities related to the Sustainable Development Goals of the 2030 Agenda.

Turkey

In Turkey, citizenship education has historical roots, dating back to the Ottoman Empire. The systematic inclusion of citizenship education began with the Tanzimat Edict of 1839, which aimed to strengthen the link between the state and citizens. Turkey's first constitution, Kanun-i Esasi, made elementary education compulsory, emphasizing its role in the process of socializing children.

During the Second Constitutional Era in 1908, citizenship education acquired a new dimension, seeing children as future producers, soldiers and citizens. This period marked the beginning of the state project of cultivating citizens through school education. With the proclamation of the Republic, educational reforms aimed to instil new social and political values, making education a key tool for forming good citizens.

Today, citizenship education in Turkish schools is regulated by the Ministry of Education and integrated into school curricula from primary to upper secondary. The programme covers democracy, human rights, national identity and civic responsibility, with teaching methodologies including discussions, practical projects and simulations. Teachers receive specific training to deal with civic issues and are updated through workshops. However, the system faces challenges such as political polarization and the need to continuously update teaching materials to promote inclusion and respect for cultural diversity.

Czech Republic

The Czech Republic developed its own approach to citizenship education after the fall of the communist regime in 1989, and the first law on the subject was adopted in 1919, a few months after the creation of the independent republic. This historical period has left a legacy of strong democratic ethos and a deep-rooted tradition of civil society. Citizenship education is, today, an integral part of the school curriculum from the earliest years of education but, especially at secondary level. However, the predominant approach is informational, with little focus on developing skills and forming critical opinions. The official curriculum allocates minimal time to

citizenship education and often lacks adequate teaching methods. Czech NGOs play a significant role, filling gaps in the education system through non-formal educational projects that aim to develop a sense of civic responsibility and a propensity for debate and teamwork in young people.

Poland

In Poland, citizenship education has also been influenced by post-1989 political transformations, but also by contemporary events reflecting the war in Ukraine. The Polish education system places a strong emphasis on civic education as a means of building a democratic and participatory society.

Citizenship education in Poland covers a wide range of topics, including human rights, the Polish Constitution, the political and judicial system, and the European Union. Teachers use a variety of teaching methods, including lectures, discussions, simulations of decision-making processes, and hands-on projects. In addition, participation in social campaigns such as the Great Orchestra of Christmas Charity and other local initiatives is an example of how citizenship education is integrated into daily life.

An important element is the influx of Ukrainian citizens due to the war, which has led many Ukrainian children to attend Polish schools. This has created opportunities to promote values of tolerance and cultural integration, fostering a deeper understanding of cultural diversity.

In 2022, Poland participated in the International Civic and Citizenship Education Study (ICCS), achieving excellent results. Polish students demonstrated a high knowledge and understanding of civic issues, as well as a strong interest in political and social issues. This data demonstrates the effectiveness of the Polish approach to citizenship education.

The study on the state of the art of citizenship education in the four countries reveals a common commitment to the formation of responsible and active citizens. Each country has developed specific approaches, adapted to its own historical and cultural realities, but they all share the goal of promoting democratic values and civic participation. Through targeted educational

policies, well-structured school programs and innovative teaching methods, these countries are training the new generations of citizens capable of facing the challenges of the future with awareness, tolerance, sustainability, respect and commitment.

Integrating citizenship education and technological skills into the new cooperative school model

The “Educational Venture” project represents an innovative approach in the field of education, aimed at integrating civic, social and technological skills within a new model of cooperative school. Currently being studied and created as a framework, this methodology is based on cooperative learning architectures, where students work in teams on projects that require the use of individual and collaborative skills. The goal is to create an educational environment that not only improves students’ academic skills, but also prepares them to become responsible and innovative citizens, capable of facing the challenges of the twenty-first century.

Cooperative learning and active participation

One of the cornerstones of the “Educational Venture” model is cooperative learning. In this approach, students would be organized into working groups where they would collaborate to achieve common goals. This type of learning would promote not only teamwork and communication skills, but also the assumption of responsibility and awareness of the consequences of one’s actions. Through group work, students would develop essential social skills such as collaboration, empathy, and conflict management.

Interaction with the territory and exploration of cultural heritage

The project emphasizes the importance of interaction with the territory and the exploration of cultural heritage. Students would be encouraged to conduct research on local environmental issues, using technology to collect data and present their findings. This approach would not only help them better understand their environment and community, but it would also foster the responsible use of technology. Through these activities, students would learn to see problems

from different perspectives and develop essential civic skills such as active participation and conscious citizenship.

Digital citizenship

Another fundamental element of the "Educational Venture" model is digital citizenship education. Students would learn how to take care of their online identity, identify and combat cyberbullying and fake news, and protect their privacy and safety online. In addition, they would be introduced to the principles of online etiquette, such as respecting the opinions of others and promoting civil exchange. These skills are crucial in an increasingly digitized world, where the ability to navigate cyberspace safely and responsibly has become a fundamental necessity.

Sustainable development

The cooperative school model proposed by "Educational Venture" adopts the Sustainable Development Goals of the 2030 Agenda in school activities. Students would be involved in projects that promote environmental sustainability and social well-being. This would not only prepare them for academic success, but also educate them to become responsible citizens, committed to contributing positively to society and the planet. Integrating these goals into the school curriculum would help to cultivate a global consciousness and develop a sense of responsibility towards future generations.

Active and collaborative methodologies

To foster the development of civic and social competences, the "Educational Venture" model would use active and collaborative methodologies, such as project-based learning, where students address real social and environmental issues using technological tools to analyse problems and propose solutions. This approach would facilitate not only the development of practical skills, but also critical reflection on the ethical and social implications of technologies. Students would learn to work together effectively, developing soft skills that are critical to their future.

Immersive and collaborative technologies

Technology plays a crucial role in the new cooperative school model. Tools such as virtual reality (VR) and augmented reality (AR) would offer students immersive learning experiences that go beyond traditional methods. For example, students could use VR to explore historical sites or natural environments, developing a deeper understanding of cultural and environmental heritage. In addition, cloud-based training and collaboration platforms, such as e-learning, would allow students to learn and work together in real-time, regardless of their geographical location. Technological tools not only enhance learning, but also promote collaboration and intercultural communication.

Evaluation and feedback

To ensure the effectiveness of the educational model, it is essential to implement robust evaluation and feedback mechanisms. This would involve the use of traditional methods of assessing civic understanding and social competences, as well as modern approaches to assessing technological competences. Digital portfolios, peer reviews, and project-based assessments would provide comprehensive insights into student progress and help educators tailor education to meet each student's needs. A holistic approach to assessment would ensure that students develop all the skills necessary to be informed, ethical, and active participants in a rapidly changing digital world.

Interdisciplinary projects

An effective way to integrate civic, social and technological skills would be through interdisciplinary projects. These projects would engage students in addressing social and environmental issues using technological tools to analyse problems and propose solutions. For example, a project could focus on civic education and include modules on the responsible use of social media, understanding online information and digital citizenship. This approach would facilitate not only the development of practical skills but would also encourage critical reflection on the ethical and social implications of technologies.

Citizenship Education and Service Learning

Citizenship education is a key element of the "Educational Venture" model. It focuses on teaching sociopolitical concepts, active participation in social and political life, and promoting

social and cultural diversity. A particularly effective practice is Service Learning, which involves students in solving real community problems. This approach would allow students involved in experimenting with the model to learn and act simultaneously, improving learning and enhancing the values of active citizenship. By linking projects to curricular subjects, Service Learning offers a comprehensive and meaningful educational experience, distinguishing itself from simply transmitting content about citizenship.

Active and collaborative methodologies, supported by immersive technologies and modern assessment tools, would ensure that students develop all the skills needed to meet the challenges of the 21st century.

INITIAL SURVEY ON THE TARGET GROUP OF STUDENTS

The evaluation of the educational approaches proposed in the "Educational Ventures" project was conducted through questionnaires distributed to students from four realities in Italy, Turkey, the Czech Republic and Poland. The aim was to gather views on current teaching approaches and how these could be improved to better prepare students for their academic, personal and occupational futures. The questionnaire consisted of 10 closed-ended questions with four answer options plus two open-ended questions. The answers allowed the Partners to collect the knowledge and background of the target groups related to transversal skills, as well as to investigate the skills that schools and educational facilities should focus on, in order to stimulate students' motivation and implement their critical thinking and social awareness.

Each survey collected students' opinions on various aspects of their educational path, from the subjects considered most useful for future employability to the necessary soft skills, up to the preferred teaching methods. By analysing and comparing the data collected, this exhibition aims to identify the common trends and peculiarities of each context, offering concrete recommendations to improve the educational offer and respond more effectively to students' expectations.

The analysis of the results of the questionnaire, together with the study of the literature and good practices presented in this report, will provide the necessary feedback to shape the new cooperative school model, define the topics of the e-learning course and the different school and outdoor activities that the "Educational Ventures" project will develop.

The survey involved:

- 39 Italian students,
- 31 Turkish students,
- 33 Polish students,
- 27 Czech students.

The students, aged between 15 and 17, took an average of 10 to 20 minutes to complete the questionnaire.

Analysis of the results

1. School subjects most useful for future employability

Answering the first question, the students rated school subjects in terms of their usefulness for future employability. The responses showed the common tendency of all four targets to consider **foreign languages** and **STEAM** (Science, Technology, Engineering, Arts, Mathematics) subjects crucial for work. The humanities**,** economics and law received less attention, suggesting a lower perception of their direct impact on employability than technical skills.

2. Transversal skills to be valued at school

The students, answering the second question, identified soft skills that they felt were underdeveloped in their schools, but that they would like to improve. All students expressed a strong need for **digital skills**, recognizing a significant gap in current education and indicating the importance of integrating information and communication technologies into education. In Italy, **critical thinking** and **problem-solving** have also been considered essential skills for personal, school and professional life. In the Czech Republic, it was critical thinking that obtained the highest evaluation for work purposes, followed by problem solving and group work, which obtained equal preferences, albeit lower. In Turkey and Poland, **teamwork** and problem solving were considered fundamental. It should be noted that in Poland, digital skills were mentioned by only 2% of respondents; such a low result may not derive from the fact that they are poorly appreciated by young people, but from the consideration that digital skills are seen as something natural for them; a skill they learn from an early age.

In general, all the skills envisaged in the answer options were considered necessary, albeit with uneven weights and trends. Greater attention must be paid to the need to improve critical thinking and digital skills, without neglecting teamwork and problem-solving within the teaching curriculum.

3. Skills already learned at school /

4. Skills on which the school should insist

The students' answers to the third and fourth questions provided an overview of the skills they feel they have acquired during their school career and those that should be further developed at school. Students in all four targets stated that they had mainly acquired logical-mathematical and linguistic skills, while they perceived a **significant lack in digital and analytical/synthetic skills**, with a unanimous request for greater attention to this aspect. The results indicate that, despite schools providing a good foundation in traditional skills such as mathematics and languages, there is an urgent need to boost the teaching of digital and analytical/synthetic skills.

5. Teaching Resources and Methods for Better School Success

Students expressed their views clearly, similarly, and unequivocally about the areas that should be included in their education. The most desirable form of educational support of all was **experience-based learning** (laboratory and extracurricular activities), followed by the use of information and communication technologies (**ICT).** The traditional methodology received less support, suggesting that students perceive the need for a shift towards more interactive and practical approaches, such as outdoor activities and openness to new technologies.

6. Social skills to be developed

The students were also asked about the social skills that should be developed at school. The majority of respondents in Italy and Poland indicated **empathy** and **understanding**, followed by cooperation and **receiving and providing feedback**. For Turkish students, however, **cooperation** was considered significantly more important. In the Czech Republic, the same number of students felt the need to include cooperation and empathy skills in their teaching. Only 1 person, in Poland and Turkey, indicated that it was important to develop **leadership** skills, while for the Italian and Czech target it had a greater weight.

7. Communication skills to be developed

In Poland, Turkey and Italy, the most valued communication skills for personal fulfilment were **constructive criticism** and **verbal communication**, followed with detachment by **nonverbal communication** and **active listening**. Polish students, on the other hand, considered active listening and verbal communication as indispensable communication skills, while giving constructive criticism and communicating with non-verbal channels was considered less indispensable. All students showed a low interest in non-verbal communication, probably indicating a lack of knowledge of its application value.

8. Learning success factors

Young people from the Czechs, Poles and Italians opted **for motivation** as the most important factor in achieving good results during the learning process, followed by **self-confidence** and **self-awareness**. Turkish students, on the other hand, put motivation, self-confidence and self-awareness on the same level. Innovative **teaching methods** achieved a lower response rate especially in Poland and the Czech Republic, while, for all respondents, extracurricular activities seem to have no use for learning success.

9. Emerging technologies

The majority of students found the use of virtual reality (VR), augmented reality (AR) and artificial intelligence (AI) **useful or very useful** for their future. Only a few found them unhelpful and few (no one in Turkey) rated them as completely useless. It will be essential, in the model, to emphasize the importance of these technologies to students as they are well on their way to becoming part of everyday life and knowledge of their use will certainly be indispensable in the future.

10. Social engagement and community involvement

The survey also included feedback on the social activity carried out by young people. It was positive to note that most of the students participated, at least sometimes, in **local community**

projects; however, a relatively small number of respondents said they had never or rarely taken part. It will be essential during the project to encourage the participation of these young people in social commitment initiatives.

Finally, the questionnaire included two open-ended questions aimed at examining the needs of the target group's community, how the project could be welcoming to all adolescents by offering them both environmental benefits and a space for them to "think outside the box", and how new technologies are important for enhancing their learning experience and stimulating their creativity.

11. Outdoor initiatives or projects that students would like to be involved in

The responses of the target group of the Francesco D'Assisi High School highlighted that Italian students would like to participate in outdoor educational programs to be involved in different activities: from volunteering with children and the elderly to interactive school projects based on peer-to-peer strategies and group work, from sports initiatives to the rediscovery of their own cultural territory.

The answers of Czech and Polish students were more evasive and generic to this question. Park and city cleaning activities or helping the elderly were indicated as the only social initiatives in which respondents would like to take part, showing that adolescents in these countries may not be very well informed about these projects or perhaps may not be sufficiently motivated to participate in them.

The Turkish target has shifted the focus of interest to the technological aspect, declaring that it wants to become part of communities related to technology, computerization or innovation.

12. Innovative technologies considered beneficial in terms of learning and experience

With reference to the second open question, all the students underlined how the use of innovative technologies such as Virtual Reality and, above all, Artificial Intelligence, can be really beneficial

for their learning path as well as for their future career. The introduction of these tools in teaching, according to the Turkish target, would facilitate learning and increase accessibility to education, observation skills and cooperation. The only drawback, Polish students showed little inclination to innovation, proposing as the only idea of technology to support learning that of replacing textbooks with tablets. The Czech target, on the other hand, has put forward the interesting proposal of providing for the use of digital tools within project-based teaching experiences.

Evaluation deductions and strategies for implementing results

Research conducted has shown that students are able to think critically about what they learn in school and what subjects, methodologies, or skills should be further developed or taught more in school. There is a strong interest in **non-traditional learning environments**, such as community-supported projects and **outdoor activities**, suggesting a demand for more interactive and hands-on learning experiences. In this sense, the use of **advanced technologies** such as VR, AR and AI in education was seen as beneficial, reflecting a forward-thinking attitude among participants towards the adoption of new educational tools.

Skills such as **collaboration**, **active listening, effective communication** and **constructive criticism** are highly valued by students, who feel the need to enhance and experiment with them.

There is also an active interest in **community-related and innovation-related initiatives**, indicating that students value engaging in initiatives that have a tangible impact on their surroundings.

To implement the results of the questionnaire and improve the teaching practices tailored to students in the context of the “Educational Ventures” project, the following strategies could be adopted:

- **Incorporate the teaching of soft and social skills**: promote skills such as cooperation, empathy, leadership and the ability to receive and provide feedback, both within e-learning training and through extracurricular cooperative activities.

- **Enhancing digital competence teaching and bridging the gap**: as students have recognised the importance of digital competence for their future, the e-learning course could include a specific module to improve students' digital skills, aimed at introducing advanced technological tools and digital resources in subsequent teaching activities.
- **Promote innovative teaching methods**: based on student feedback on the usefulness of lab-based learning over traditional methodology, the model must give more space to innovative teaching approaches that foster interactivity, active learning and practical exploration of concepts.
- **Develop career guidance programmes**: considering the importance given by students to skills useful for future employability, an information part on career guidance could also be included in the training to help students understand the skills required in the world of work and to develop a targeted training path.
- **Personalize learning**: the e-learning methodology is in itself accessible, personalized and, consequently, more effective and tailored to students.
- **Integrate recent technology**: the model plans to leverage modern technologies such as VR, AR, and AI to create more engaging and effective learning environments.

The feedback provided by the participants clearly indicates the need for educational reforms that prioritise practical skills, digital competences, soft skills and innovative teaching methodologies. Integrating these signals into the "Educational Venture" model would not only meet the immediate needs and well-being of students but would also allow their educational outcomes to be aligned with future labour market needs, significantly increasing motivation for current and continuing education.

INDICATIONS FOR THE “EDUCATIONAL VENTURE” MODEL

The “Educational Ventures” project was born with the intention of creating a model capable of integrating advanced technologies such as Augmented Reality (AR) and Virtual Reality (VR) in education, in order to develop students’ transversal, social and civic skills. This section, based on the results of the research and the survey conducted on the students, provides a solid foundation for the creation of the new cooperative and innovative learning model.

The study of the literature and practical examples of successful application of existing similar models helped the Partners to understand the current context, to identify best practices and to have concrete indications on which to build and innovate, minimizing the risks of duplication of efforts and maximizing the probability of success.

The initial survey of the target group made it possible, in addition to the research, to understand the specific needs, expectations and problems of the students in order to better define the objectives of the model and ensure that it responds to the real needs of the beneficiaries. Collecting data on existing behaviours, habits, and practices in their schools allows for the development of a model that is functional, effective, and well-received by end-users.

Responding students identified foreign languages and STEAM subjects (Science, Technology, Engineering, Arts and Mathematics) as essential for their future work. However, they highlighted the need to improve digital skills, critical thinking, problem-solving, and teamwork. When it comes to social skills, students believe it is important to develop empathy, cooperation, and the ability to give and receive feedback. The most valued communication skills include constructive criticism, verbal communication, and active listening. Experience-based outdoor learning, such as hands-on and laboratory activities, is preferred over traditional methods, and the use of information and communication technologies (ICT) is seen as a key support for learning. In addition to ICT, students recognize the importance of virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) for their future, emphasizing the need to integrate these technologies into learning. Finally, motivation and self-confidence are considered the most important factors for academic success.

Based on the conclusions drawn from the analysis of the survey results, the following aspects should be considered to build the "Educational Venture" model:

- **Transversal and Social Skills**: integrating cooperation, empathy and leadership into e-learning courses and extracurricular activities.
- **Digital Skills**: offer specific modules to improve digital skills.
- **Innovative Methods**: encourage interactive and practical teaching approaches.
- **Career Guidance**: provide information on the skills required in the world of work.
- **Personalization of Learning**: use e-learning to offer tailor-made learning.
- **Advanced Technologies**: implement VR, AR, and AI to create immersive learning environments.

The new "Educational Venture" model aims to create a stimulating and cutting-edge learning environment, reinforcing the mission of modern teaching that promotes the link with the territory and international openness. The main objectives, in line with student expectations, include:

- **Development of transversal, cultural, digital and social skills**: fostering empathy, collaboration, communication and civic responsibility.
- **Facilitation of problem solving and critical thinking**: stimulate these skills through the use of AR and VR technologies.
- **Creation of a new model of cooperative school**: promoting the idea of plural knowledge, closely related to each other and to the territory.
- **Promotion of networked learning**: reflecting the approach that pupils mostly experience outside the school environment.

To achieve these goals, the "Educational Venture" model involves the implementation of an integrated approach that includes hands-on, real-world outdoor experiences and AR and VR technologies. The benefits of advanced technologies in education can be manifold and include:

- **Improved learning**: new technologies facilitate a deeper understanding of the subjects covered, making learning more engaging.
- **Promotion of social and civic competences**: the use of AR and VR encourages students to work together, developing empathy, collaboration and civic responsibility.

- **Facilitation of problem solving and critical thinking**: immersive and interactive environments stimulate students' minds, improving their ability to solve problems and think critically.
- **Network Activation (RAS):** a learner-centred learning model, focusing on novelty, emotional relevance, and personal meaning, allows for a more receptive and stimulating learning experience.

Linking digital learning with practical experiences, in addition to this, promotes the acquisition of skills such as collaboration, communication, creativity, problem solving, critical thinking and awareness of the role of the school in the cultural identity of the territory.

From a practical point of view, the "Educational Venture" model will have a structure composed of several key components:

1. **Map of the Creativity Districts:** a map equipped with a QR Code for displaying the most suitable places within or near the sample schools in which to carry out the activities envisaged by the model. These are places, such as parks, libraries, football fields, etc., that can unite the realities involved in all the Partner Countries. By framing the QR Code of each place, the student will be able to access useful information such as the description of the place, the activities that can be carried out there and the purposes, how that place can be redeveloped according to this activity and other practical and stimulating indications of connection with the territory.
2. **Technology Platform**: a platform including training, information and orientation content, useful for both e-learning and immersive learning through AR and VR. The online portal will also be a basin in which to find ideas on possible outdoor educational activities that schools can organize and feedback on the benefits they bring to the students who participate.
3. **Training Content:** e-learning modules on digital skills, soft skills, civic education and local culture, interactive and integrated with AR and VR experiences to improve student engagement.

4. **Outdoor Education experiences with the use of virtual**: outdoor activities that connect digital learning with practical experiences, including cultural and historical explorations, service-learning projects and team building activities.
5. **Feedback collection**: feedback collection surveys are planned at the middle and end of the experimentation to evaluate and optimize the model.

The “Educational Venture” learning model aligns with the Partners’ goals of using technology as a catalyst to develop crucial meta-skills, but also a deep understanding of cultural diversity and social dynamics. Its implementation harnesses the benefits of technology to enhance learning, reinforcing the mission of adopting innovative teaching. This will allow the practical dimension of the school to be expanded, also thanks to the sharing of results with other European schools. The new learning model offers a glimpse into a future where education is not only about acquiring knowledge, but also about training responsible citizens, lifelong learners and active participants in society, ready to shape a brighter tomorrow.

IDENTIFICATION OF THE MODULES OF THE E-LEARNING COURSE "EDUCATIONAL VENTURE"

The themes proposed by WIDE for the implementation of the new cooperative school model between e-learning course and immersive experiences reflect the objectives and strategies outlined in the project, enriched by the conclusions drawn from this study and by the results of the survey on the needs of the target group, which will take part in the experimentation of the model. For the personal development of students in the long term, transversal skills, digital skills and immersive technologies, active and responsible citizenship, the enhancement of cultural and environmental heritage through outdoor learning, meta-skills and the use of RAS to promote learning emerged as important topics.

On the basis of these assumptions, WIDE has hypothesized the following 5 e-learning training topics for students aged 15 to 17, declining them into 4 teaching units and 1 assessment quiz:

MODULE 1: TRANSVERSAL SKILLS FOR THE XXI CENTURY

(CAIO)

Objective: to develop essential skills such as critical thinking, collaboration, communication and creativity, which are essential to foster a real change in the dynamics of personal development, also in the perspective of future employment.

UNIT 1: CRITICAL THINKING AND PROBLEM SOLVING

Objectives:

- Understand and apply critical analysis techniques.
- Develop problem-solving skills to deal with complex situations.
- Use tools and methods to identify and resolve issues
- Apply critical thinking in real-world contexts.

Contents:

- **Introduction to Critical Thinking:** definition and Importance, Fundamental Principles of Critical Thinking.

- **Critical analysis techniques:** tools for evaluating information, identifying biases and logical fallacies.
- **Problem solving strategies:** structured problem-solving methods, such as the Plan-Do-Check-Act (PDCA) cycle and the 5-plus method.
- **Practical problem-solving exercises:** real case studies, simulations and role-playing to put into practice the techniques learned.
- **Evaluation of solutions:** criteria for the evaluation of proposed solutions, cost-benefit analysis and impact of decisions.

UNIT 2: COLLABORATION

Objectives:

- Understand the dynamics and benefits of teamwork.
- Develop skills for effective cooperation in group environments.
- Manage and resolve conflicts constructively within teams.
- Apply collaboration techniques in concrete projects.

Contents:

- **Introduction to collaboration**: definition of collaboration and the importance of collaboration.
- **Group dynamics:** roles and responsibilities in groups, how to create a cohesive team, the stages of team development (formation, conflict, normalization, performance, dissolution).
- **Intercultural communication:** understanding and managing cultural differences, techniques to facilitate communication in multicultural environments.
- **Conflict management:** identification of the causes of conflicts, resolution and mediation techniques, approaches to negotiating.
- **Group projects and team building:** planning and management of collaborative projects, team building, evaluation of the effectiveness of group work and feedback.

UNIT 3: COMMUNICATION

Objectives:

- Improve verbal and non-verbal communication skills.
- Be able to prepare and present information in a clear and persuasive way.
- Apply active listening techniques and provide constructive feedback.
- Manage communication in digital and social media contexts.

Contents:

- **Introduction to communication:** fundamental principles of communication, communication models and the role of verbal and non-verbal language.
- **Presentation techniques:** preparation of effective presentations, use of visual aids and public speaking techniques, structuring content for a specific audience.
- **Assertive communication:** techniques for expressing opinions and desires clearly and respectfully, conflict management and assertiveness.
- **Active listening and feedback:** definition and practices of active listening, how to provide and receive constructive feedback, role-play exercises and simulations.
- **Digital communication and social media:** use of online communication platforms.

UNIT 4: CREATIVITY AND INNOVATION

Objectives:

- Stimulate creativity and innovation in different contexts.
- Apply brainstorming and design thinking techniques to solve problems and generate new ideas.
- Develop and implement innovative projects.
- Evaluate and manage the impact of innovation on processes and outcomes.

Contents:

- **Introduction to creativity:** definition of creativity and innovation, the difference between individual and group creativity, and the role of creativity in personal progress.
- **Brainstorming techniques:** methods and tools to stimulate idea generation, such as traditional brainstorming, mind mapping and visual ideation techniques.
- **Design thinking:** phases of design thinking (empathize, define, ideate, prototype, test), practical application through case studies and projects.

- **Methods of increasing creativity:** knowing how to devise functional activities to stimulate creativity, such as role-plays, creative writing exercises and lateral thinking challenges.

UNIT 5: QUIZ

A questionnaire consisting of 8 questions (2 for each unit) with multiple choice with 3 answer options and the indication of the correct answer.

The first module could be assigned to **CAIO.** The Czech Partner is particularly qualified to develop quality content and practical approaches on transversal skills, thanks to its long experience and expertise in the field of corporate and continuing education. CAIO's vast network of contacts also offers the opportunity to have a broader vision of which transversal skills students can enhance to enrich their learning, also with a view to future expendability.

MODULE 2: DIGITAL SKILLS AND IMMERSIVE TECHNOLOGIES

(NARA)

Objective: to provide students with the necessary skills to use digital, AR and VR technologies effectively and safely, preparing them for an increasingly interconnected and technologically advanced future.

UNIT 1: DIGITAL LITERACY

Objectives:

- Understand the fundamental concepts of computer science.
- Know how to use the basic tools for digital productivity.
- Know the main online communication platforms.
- Knowing how to create digital content.

Contents:

- **Introduction to computer science**: hardware, software, operating systems.
- **Digital communication**: email, chat, sharing forums, video conferences.

- **Digital content**: Create and edit digital content in a variety of formats.
- **Web browsing** browsers, search engines, criteria for evaluating online sources.

UNIT 2: ONLINE SECURITY AND PRIVACY

Objectives:

- Know the main risks associated with the use of the internet.
- Learn best practices for protecting your identity and data online.
- Knowing how to recognize and manage digital threats.

Contents:

- **Online risks**: malware, phishing, social engineering.
- **Personal data protection**: encryption, password management, two-factor authentication.
- **Privacy regulations**: GDPR and other regulations.
- **Network security**: firewall, VPN, Wi-Fi network protection.

UNIT 3: ETHICAL AND INFORMED USE OF TECHNOLOGIES

Objectives:

- Promote a conscious and responsible use of digital technologies.
- Understand the importance of ethics in the use of technologies.
- Learn the principles of netiquette and digital citizenship.

Contents:

- **Digital ethics**: copyright, plagiarism, intellectual property.
- **Digital citizenship**: online rights and obligations, appropriate behaviour in digital communities.
- **Social and cultural impacts**: internet addiction, impact of technologies on interpersonal relationships.
- **Media education**: knowing how to distinguish between information and disinformation, fake news.

UNIT 4: AR AND VR TO IMPROVE LEARNING

Objectives:

- Understand the potential of AR and VR technologies in the educational context.
- Knowing how to use AR and VR tools to create immersive learning experiences.
- Evaluate the effectiveness of immersive technologies in teaching and learning.

Contents:

- **Introduction to AR and VR**: differences, applications, equipment.
- **Educational applications**: examples of the use of AR and VR in teaching.
- **Immersive content creation**: software and platforms for developing AR and VR experiences.
- **Evaluation of immersive technologies**: methods for measuring the impact on learning.

UNIT 5: QUIZ

A questionnaire consisting of 8 questions (2 for each unit) with multiple choice with 3 answer options and the indication of the correct answer.

The second topic could be assigned to **NARA,** whose corporate vision is to make the most up-to-date and effective educational technologies accessible to people from all walks of life, developing products and services that build the future of the next generation. Thanks to the experience gained in the field of innovation and technology, Nara's research group has the capabilities to provide students with the necessary skills to use digital, AR and VR technologies effectively and safely.

MODULE 3: ACTIVE AND RESPONSIBLE CITIZENSHIP SKILLS

(Francesco D'Assisi High School)

Objective: to educate students in the principles of active citizenship and civic education, promoting conscious and responsible participation in the community and developing a strong social and ethical awareness.

UNIT 1: THE FUNDAMENTALS OF CITIZENSHIP

Objectives:

- Understand the fundamental concepts of citizenship.
- Knowing the rights and duties of citizens
- Develop an awareness of the role and responsibilities of a citizen.

Contents:

- **Active citizenship and responsible citizenship:** key concepts and types of citizenship.
- **Citizens' rights and duties:** fundamental rights and protection mechanisms, civic duties and civic education.
- **Digital tools for civic participation:** platforms, social media and digital mobilization.

UNIT 2: CONSTRUCTIVE PARTICIPATION IN THE COMMUNITY

Objectives:

- Promote the importance of individual contribution to the community.
- Develop skills to participate actively and positively in Community initiatives.
- Learn to identify and solve community problems through concrete actions.

Contents:

- **Importance of community participation:** definition of community, individual and collective benefits of community involvement.
- **The fundamental civic and social skills** that an active citizen must possess.
- **Issues related to global challenges:** environmental protection, human rights and tolerance.
- **Civic participation and involvement:** ways to participate in civic life.

UNIT 3: SOCIAL AND ETHICAL RESPONSIBILITY

Objectives:

- Understand the importance of social responsibility and ethical decisions.
- Analyse the social and ethical implications of one's actions.
- Apply ethical principles in real-world contexts.

Contents:

- **Definition of social responsibility:** meaning of social responsibility, how individual and corporate actions affect society and the environment.
- **Principles of ethics and responsibility:** ethics, codes of conduct and the concept of social justice.
- **Sustainability and environmental impact:** the role of sustainability in social and business decisions, ecological practices and environmental responsibility.
- **Ethical behaviour:** examples of good practices and responsible behaviour in daily life and work.

UNIT 4: EMPATHY AND CULTURAL COMPETENCE

Objectives:

- Develop empathy and understanding towards people with different cultures.
- Promote cultural competence and respect for diversity.
- Apply empathy in communication and daily interactions.

Contents:

- **Definition of empathy and cultural competence:** concepts of empathy, what is cultural competence and why it is important.
- **Understanding and respecting diversity:** the importance of respecting cultural, ethnic and social differences.
- **The key aspects of an inclusive community:** principles and strategies for promoting inclusion and equity in groups and communities.
- **Techniques for developing empathy:** exercises and activities to improve the ability to put oneself in the shoes of others and understand different perspectives.
- **Intercultural communication:** techniques and practices to communicate effectively with people from different cultures, avoid stereotypes and prejudices.

UNIT 5: QUIZ

A questionnaire consisting of 8 questions (2 for each unit) with multiple choice with 3 answer options and the indication of the correct answer.

The third module could be assigned to **LICEO FRANCESCO D'ASSISI,** as its educational offer aligns perfectly with the objectives of preparing students to face the challenges of active and responsible citizenship in a global context. Its focus on inclusion, dialogue between different cultures and social responsibility can be transferred to the e-learning environment to teach students the importance of community participation, empathy and cultural competence, which are fundamental for responsible citizenship ready for societal transformations and sensitive to stimuli.

MODULE 4: SUSTAINABILITY, TERRITORY AND OUTDOOR LEARNING

(CRAS)

Objective: To learn how to enhance the local cultural and environmental heritage through outdoor learning activities, promoting sustainability and the use of new immersive technologies.

UNIT 1: INCLUSIVITY AND RESPECT FOR OTHERS

Objectives:

- Promote an inclusive and respectful learning environment.
- Understand different cultural and social perspectives.
- Develop empathy and the ability to work in heterogeneous groups.
- Apply inclusive practices in outdoor activities.

Contents:

- **Introduction to inclusivity:** definition and importance of inclusivity, diversity and equity.
- **Recognition of differences:** understanding and respecting different cultural, social and economic perspectives.
- **Empathy and respect:** development of empathy and mutual respect.

UNIT 2: ENVIRONMENTAL AWARENESS AND SELF-PERCEPTION IN THE ENVIRONMENT

Objectives:

- Develop a critical awareness of environmental issues.
- Promote personal connection with the natural environment.
- Understand the impact of individual and collective actions on the environment.
- To promote sustainable behaviours in daily activities.

Contents:

- **Introduction to environmental awareness:** key concepts of sustainability and environmental and cultural conservation.
- **Connection with the environment:** suggestions for practical activities to develop a personal relationship with nature and the surrounding environment, such as observation and volunteering.
- **Impact of human actions:** ecological footprint analysis, examples of environmental impacts and sustainable practices.
- **Sustainable behaviours:** promotion of ecological behaviours in outdoor activities and daily life, environmental and cultural awareness projects.

UNIT 3: LEADERSHIP, AUTONOMY AND INITIATIVE

Objectives:

- Develop leadership skills and autonomy.
- Promote personal initiative and the ability to make informed decisions.
- Foster collaboration and guidance within groups.
- Apply leadership and autonomy skills in outdoor activities.

Contents:

- **Introduction to Leadership:** definition of leadership, leadership styles, and key competencies.
- **Autonomy development:** techniques to encourage personal autonomy, problem solving and decision making.

- **Personal initiative:** promotion of initiative through suggestions and practical activities, development of self-confidence.
- **Leadership in action:** examples of outdoor leadership, group management, and conflict resolution.

UNIT 4: TECHNIQUES AND BENEFITS OF OUTDOOR LEARNING AND CONNECTION WITH THE TERRITORY

Objectives:

- Explore and apply effective techniques for outdoor learning.
- Promote the connection with the territory and the local cultural heritage.
- Highlight the educational, physical and psychological benefits of outdoor activities.

Contents:

- **Introduction to outdoor learning:** definition and importance of outdoor educational activities.
- **Outdoor teaching methodologies:** exploration of specific teaching techniques for outdoor learning, such as outdoor education, nature journaling, experiential activities and citizen science projects.
- **Connection with the territory:** strategies to enhance the local cultural and environmental heritage, integrating history, traditions and natural resources.
- **Outdoor activity design:** guidelines for designing and implementing effective and engaging outdoor educational activities, citing the use of immersive technologies.
- **Benefits of Outdoor Learning:** overview of the physical, mental, and educational benefits of outdoor learning, including improved concentration, reduced stress, increased motivation, and social skills development.

UNIT 5: QUIZ

A questionnaire consisting of 8 questions (2 for each unit) with multiple choice with 3 answer options and the indication of the correct answer.

The fourth theme could be assigned to **CRAS,** for the commitment that the association places in promoting the social, economic and cultural development of the Polish region in which it

operates. Their experience in offering “unconventional” inclusive advice, as well as high social, creative and cooperative skills make it the right partner to develop content related to sustainability, cultural heritage, territory and the promotion of outdoor learning.

MODULE 5: META-COMPETENCES AND USE OF THE RAS

(WIDE)

Objective: To develop self-reflection, time management and autonomous learning skills, leveraging the Network Activation System (RAS) to support continuous learning and training.

UNIT 1: MOTIVATION

Objectives:

- Understand the importance of motivation in learning and personal development.
- Identify your sources of intrinsic and extrinsic motivation.
- Develop strategies to keep motivation high in the long term.

Contents:

- **Definition of motivation:** types of motivation (intrinsic vs extrinsic), theories of motivation (Maslow, Herzberg, Deci and Ryan).
- **Techniques to increase motivation:** goal setting, visualization, positive self-talk.
- **Obstacles to motivation:** procrastination, lack of clear goals, stress, and burnout.
- **Strategies for maintaining motivation:** long-term planning, reward management, developing positive habits.

UNIT 2: SELF-REFLECTION AND FEEDBACK

Objectives:

- Develop critical self-reflection skills.
- Learn to give and receive constructive feedback.
- Use feedback to improve your performance and skills.

Contents:

- **Self-reflection**: self-reflection techniques, critical analysis of one's own experiences and results.
- **Feedback**: principles of constructive feedback, techniques for receiving feedback in a positive way.
- **Continuous improvement cycle**: using feedback to set new goals and strategies.

UNIT 3: RESILIENCE AND ADAPTABILITY

Objectives:

- Develop resilience in the face of difficulties.
- Learn how to manage stress and anxiety.
- Adapt to changes and new situations effectively.

Contents:

- **Resilience**: definition, importance, strategies to develop it.
- **Stress management**: relaxation techniques, mindfulness, anxiety management.
- **Adaptability**: cognitive flexibility, problem solving, creative thinking.

UNIT 4: PERSONALIZING LEARNING WITH RAS

Objectives:

- Understand how the Reticular Activating System (RAS) works.
- Leverage the RAS to improve attention and concentration.
- Personalize learning strategies using RAS.

Contents:

- **Introduction to RAS**: structure and function, importance in learning.
- **Improving attention**: techniques for activating the RAS and focusing attention on specific objectives.
- **Personalization of learning**: adapt methods and strategies to one's cognitive characteristics using RAS.

UNIT 5: QUIZ

A questionnaire consisting of 8 questions (2 for each unit) with multiple choice with 3 answer options and the indication of the correct answer.

The fifth theme could be assigned to **WIDE,** whose specialization in training and communication allows you to deepen essential skills to improve motivation and feedback. In addition, his expertise in technology and innovative design to facilitate access to knowledge can make it easy to understand complex concepts such as meta-skills and the use of RAS. Thanks to its know-how and skills, WIDE is able to create effective and immediately applicable content for the intended target.

TARGET AND APPLICATION CONTEXT: the training is aimed exclusively at students from 15 to 17 years of age and takes place preferably during school hours to facilitate the involvement of the teacher and educator in guiding, encouraging and assisting students as needed.

FORM INDICATIONS: for the presentation of the contents related to their competence module, Partners are invited to use the PowerPoint format created by WIDE and available in the project shared folder starting from 15/07/2024. Each presentation will correspond to one unit and must maintain an approximate size of 10 slides. It is advisable to limit the textual portion in favour of graphs, images, diagrams and practical suggestions that make learning more interesting and engaging. Quizzes are also allowed formats other than PowerPoint, such as Word or Pdf.

DEADLINE: by 31/08/2024, Partners will create the contents of the modules.

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