

## Educational Ventures

Project Code: 2023-1-IT02-KA220-SCH-000151181



### WP 3.2 – IMMERSIVE EXPERIENCES (FOCUS GROUPS) SUMMARY OF THE FOCUS GROUP DISCUSSION IN ITALY



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# 1. INTRODUCTION

This study represents a synthesis of the results of the focus group survey conducted in relation to the Erasmus Plus Project Educational Venture - KA220-SCH-000151181.

The general purpose of this study is to get feedback on the topics developed by the partners regarding the three themes of the project: immersive technology, outdoor learning and cross-cutting competences. Its objectives are to evaluate the effectiveness and applicability of AR and VR in specific educational settings, to explore the integration of technologies into open-air learning activities and to assess how the proposed technologies support the development of skills such as critical thinking, collaboration and creativity. Moreover, the discussion among the stakeholders included in the focus group, allowed this study to assess the effectiveness and applicability of the proposed technologies from the point of view of educators, to collect feedback on the user experience and perceived effectiveness of technologies in learning, to understand the perceptions and concerns of parents regarding the use of new technologies in education.

# 2. METHODOLOGY

This survey has been carried out by Liceo Scientifico Francesco D'Assisi on 4<sup>th</sup> November 2024 in Rome. The participants were invited to the meeting by email. The email included a short description of the project 'Educational Ventures'.

The meeting was guided by one moderator with the presence of a co-moderator who coordinated the technology and took notes and documented key points, quotes, and observations, ideas, and answers.

The Focus group protocol has been organized as follows:

1. **Introduction:** welcome participants, explain the purpose of the focus group, and assure confidentiality.
2. **Warm-up questions:** begin with easy-to-answer questions to establish rapport and comfort.
3. **Key questions:** present the focus group questions in a logical order, allowing for in-depth discussion.
4. **Probe questions:** use probing techniques to encourage deeper insights and elicit more specific examples.
5. **Summarizing and clarifying:** periodically summarize key points to ensure understanding and correct any misunderstandings.
6. **Conclusion:** thank participants for their time and contributions.

The room where the meeting was held was a comfortable place, Aula Averardi, where all the participants could feel at ease and free to express their opinion in a relaxed and enjoyable atmosphere. The coordinators made sure the



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participants were in a noise-free environment to minimize distractions and interruptions. Moreover, all the participants were informed about the focus group protocol and their anonymity would be granted in the final report.

### 3. FOCUS GROUP PARTICIPANTS

The participants at the focus included 4 students, 3 teachers and 4 stakeholders (two parents and two experts in teaching methodology)

The criteria for the selection of the research sample were based on teachers and stakeholders interested in innovative educational approaches, students who showed an interest in the use of new technologies. Furthermore, all the participants could potentially be involved as direct recipients in the new educational model developed with the Erasmus plus project 'Educational Ventures'.

### 4. DATA ANALYSIS BY THEMES

Data were collected through the note-taking technique carried out by the co-moderator.

After concluding the activity of the focus group, the moderator and the co-moderator debriefed, recording initial impressions of the discussion as well as any highlights, issues, or immediate conclusions they have drawn. The next step was to read and re-order the data. Each participant was assigned a number pseudonym for organizational purposes and the data collected were analyzed for themes or for categories of the participants.

#### 4.1. Immersive Technologies (AR – VR)

In order to evaluate the effectiveness and applicability of AR and VR in specific educational settings the moderator suggested these questions:

1. How do you perceive the effectiveness of AR and VR in learning compared to traditional methods?
2. What benefits do you see in the use of immersive technologies to delve into complex or abstract topics?
3. How do you rate the quality of interaction between students and technology? Are they easily involved or are there obstacles?
4. How do AR and VR support the development of soft skills (e.g. critical thinking)?



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The overall feedback regarding the theme of immersive technology has been positive. All the representatives of the three groups of participants agreed on the effective impact of the use of these new technologies to arise motivation enhancing innovative approaches in the teaching and learning process.

The following statements clearly show what has been just underlined:

- *‘Both AI and VR can allow students to practice critical thinking by actively engaging them in realistic scenarios, so students are eager to move beyond theoretical concepts and try out their skills in dynamic and simulated environments. These technologies can assist students in creative processes by generating new ideas, challenging mindsets and widening the horizons of human mind. Both VR and AI can allow students to communicate with each other in shared spaces and participate in joint activities, making them an effective tool for remote collaboration’.*
- *‘Lots of pedagogical texts confirm an increase in learning speed and a deeper comprehension of conceptual nuclei of the discipline, making use of virtual reality. Virtual scientific working environments, such as national laboratories, or virtual simulation of physical/chemical phenomena can be reproduced in a more understandable way to students, graphically rather than oral. Artificial intelligence, taking into account of its limits, can be used as an endless source of knowledge to deepen certain themes, or imagine a virtual setting where the student can learn from different points of view’.*
- *‘All these activities and tools are not in contradiction with usual learning methods, such as flipped classroom or group work, but rather the former assist and support the latter for a better, quicker and deeper comprehension of the subject’.*

From the interviews, it is clear that the students use technologies in daily life but these technologies are not always available at school since the process of equipping institutions with these tools has just started and it will take a long time.

- *‘I don’t really use VR OR AR at school since they are not available, but overall, immersive technologies often inspire a stronger motivation to engage with and complete tasks because they make the experience feel immediate, meaningful, and rewarding’.*
- *‘AR and VR make me feel more engaged and focused because they create fun, interactive experiences. These technologies capture my attention and make tasks more enjoyable, which boosts my motivation to continue and explore further. The sense of immersion keeps me motivated to reach goals or complete activities. I hope that schools will be able to offer and implement the use of these virtual tools’.*

## 4.2. Outdoor learning

By following this methodology and asking these specific questions, the focus group can provide valuable insights into the potential of AR and VR to enhance open-air learning and the development of essential skills.

To explore the integration of technologies in outdoor learning activities, the following questions were proposed:



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1. How can immersive technologies be integrated into outdoor learning activities? What benefits do they bring?
2. What challenges or limitations do you see in using technology in non-traditional environments, such as outdoors?
3. Do you think technologies help to better connect students to nature or their surroundings? How so?

The general feedback of the respondents underlined the benefits of outdoor learning or outdoor education programs that can provide adolescents with the skills of working together as a group, of problem solving in practical ways and of leadership.

The benefits would also be allowing students to have another setting in which to learn is not so confining like the classroom. This could enhance both learning and students' curiosity. It could help with interactive learning by conducting experiments in virtual labs, for example. It can also help with immersive exploration so students can explore otherwise inaccessible sites--such as historical sites--with virtual reality.

- *'Outdoor learning plays an important role in Italian education. There are various experiences, offering the possibility to acquire specific and transversal skills in environments other than the usual classroom. Virtual reality and artificial intelligence also contribute to teaching proposals, with the aim of stimulating new ways for students' critical thinking and training them to innovative problem-solving methods'.*
- *'Amongst these activities, I would like to report educational visits to laboratories, museums and sites of scientific importance, transversal-skills and future orienteering projects (in Italian, PCTO) and outdoor activities in gardens or cultural centers close to our school'.*

Even if all the participants agreed on the positive impact of outdoor learning activities and its integration with new technologies, they underlined some challenges that are linked to space, time and weather.

- *'Outdoor learning provides a less structured/more fun learning environment and a change to routine which is seen as like a class trip. The challenges are increased distraction and the absence of teaching tools such as a LIM and the absence of toilets available'.*

### 4.3. Soft skills

To stimulate the discussion about soft skills, the moderator suggested the following questions to evaluate how the proposed technologies support the development of skills such as critical thinking, collaboration and creativity:

1. How do immersive technologies (AR, VR) facilitate the development of critical thinking and creativity among students?
2. If you use them, have you noticed an improvement in collaboration between students thanks to the use of these technologies? In what activities or contexts?



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3. Do the technologies used offer opportunities for the development of soft skills? What suggestions do you have to improve these aspects?

By analyzing the answers on this topic, when it comes to soft skills, there is a shared awareness about the impact of immersive technology on the learning process: it provides a stimulus to think outside the box enhancing critical thinking and creativity by promoting the questions of *Why? Therefore?* and *What does this mean?* while at the same time encouraging a group approach to problem solving which has been shown to be more effective.

Both AI and VR can allow students to practice critical thinking by actively engaging them in realistic scenarios, so students are eager to move beyond theoretical concepts and try out their skills in dynamic and simulated environments. They can assist students in creative processes by generating new ideas, challenging mindsets and widening the horizons of human mind. Both VR and AI can allow students to communicate with each other in shared spaces and participate in joint activities, making them an effective tool for remote collaboration.

These are some sample answers:

- *‘I think just taking the student out of the classroom would stimulate critical thinking and creativity. In my experience and conversations with the students, I can say they are looking for and eager to have new ways to learn that include new technologies’.*
- *‘Finally, the immense number of images and locations these technologies can elaborate is a fertile soil for the creativity of students, who can create everything their mind can think of.’*
- *‘Artificial intelligence helps to stimulate creativity by providing interesting and amazing tools, it is possible for students to develop them in a different and original way, giving rise to unexpected results. At the same time, virtual reality provides endless possibilities to explore things that in the physical world could not be studied: this means that students’ creativity is incredibly increased and their critical thinking and problem solving are encouraged. Furthermore, collaboration is developed while doing activities who allow students to work together to do specific groupwork, using the data provided by the AI and virtual reality’.*

## 5. FOCUS GROUP FOR SPECIFIC STAKEHOLDERS

### 5.1. Teachers

The teachers that have taken part in the focus group are perfectly aware of the new opportunities given by the immersive technologies and of how the students’ horizons can be widened by their employment in educational practice. However, they have also emphasized how difficult it can be to integrate new technologies in the school curriculum and how many technical challenges they have to face. Among them, they considered the issue of such as Hardware compatibility and devices and software functionality: to make sure they are compatible and function smoothly can avoid time-consuming and frustration. Even reliable internet access is crucial for online platforms and



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can be a challenge in some areas as well as the lack of technical support can hinder troubleshooting and problem-solving. Last but not least, these new educational tools imply continuous training for teachers who need to study new pedagogical strategies to integrate these technologies into their teaching methods and curriculum. Moreover, teachers' responses underlined that adapting teaching methods to leverage the unique features of these technologies require careful planning and consideration even for special needs students. If on one hand immersive technologies can be helpful, it can be a challenge when it comes to assessing students learning in a technology-rich environment. Finally, ensuring that all students have equal access to devices and technology can be a significant hurdle.

In conclusion, by addressing these challenges and investing in teacher training, we can unlock the full potential of immersive technologies to transform learning experiences and empower students to succeed in the 21<sup>st</sup> century.

- *'Not all the schools have the same technological tools available, in Italy, for instance, there is a gap to be filled in equipping them with AR and VR devices.'*
- *'As far as I am concerned, it is not easy to get used to integrating the traditional lesson with the new immersive technology.'*
- *'These technologies can be complex to set up and operate, requiring specialized knowledge and training.'*

## 5.2. Students

The students' feedback was positive since they are digital natives.

They all stated that immersive technologies like AR or VR make them feel very motivated, especially in the learning context, because they are innovative experiences that enhance their curiosity. They find them engaging and amazing since they create fun, interactive experiences, capturing their attention making tasks more enjoyable, boosting their interest to explore further. Their sense of immersion keeps their attention high while reaching goals or completing activities. They hope that schools will be able to offer and implement the use of these virtual tools. However, many students were aware of the challenges these new technologies imply since they need to be used wisely and filtered by their personal knowledge.

Here are some of the students' answers:

- *'I definitely prefer using AR and VR over traditional methods. It's a much more active and hands-on way to learn.'*
- *'I think AR and VR are great for learning complex concepts or practicing skills. They can really bring abstract ideas to life.'*
- *'While I enjoy using immersive technologies, I still find value in traditional methods like reading and discussion. Sometimes, a good old-fashioned textbook can be helpful.'*
- *'I find AR and VR really exciting! It makes learning feel like a game or an adventure. It's much more engaging than just reading from a textbook.'*



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### 5.3. Stakeholders

The stakeholders expressed their opinions about the impact of immersive technology on educational practices. They recognize the potential of technology to tailor education to face the challenges of the modern world, to enhance motivation, to involve the students' individual talents and their interest in technology. Moreover, it has emerged that technology can make education more accessible for students with disabilities or those in remote areas. Nevertheless, parents advocate for a balanced approach, combining the benefits of technology with traditional teaching methods.

Their answers have also showed their worries about the potential misuse of student data collected through AR and VR technologies, as well as their concern that these immersive environments could be exploited for cyberbullying. In addition, parents are worried about the risk of excessive screen time and technology addiction. Consequently, schools are asked to prioritize teaching students how to use technology responsibly and safely and provide adequate support for students who may struggle with the emotional and psychological impacts of technology use.

They said:

- *'I'm worried about the privacy implications of these technologies. Who has access to my child's data? How is it being used?'*
- *'I'm worried about the potential for excessive screen time and addiction to these technologies'.*
- *'I believe a balance between technology and traditional methods is ideal. While technology can enhance learning, there's still value in face-to-face interaction and hands-on experiences'.*