TeachXR: The use of augmented reality in education

POLICY DEVELOPMENT | **PRACTICAL MEASURE/INITIATIVE** | SLOVENIA

Timeline

2024 **Design** 2025 **Implementation**

ID number 49915

Background

The rapid digital transformation of the economy has increased demand for advanced digital, technical and transversal skills, particularly in vocational education and training (VET) and other practice-oriented learning pathways. While Extended Reality (XR) technologies – encompassing Augmented Reality (AR), Virtual Reality (VR) and Mixed Reality (MR) – are increasingly used in industry to support training, simulation and innovation, their systematic integration into education and training has remained limited. In Slovenia, as in other EU countries, teaching practices and educator competences have not yet fully adapted to the potential of immersive technologies to support skills development, active learning and work-based learning environments.

Objectives

The project aims to diversify and supplement traditional teaching content by introducing advanced technologies. It aims to provide training and materials for primary and upper secondary school teachers to support the integration of XR technologies into the teaching process. It is planned that six learning laboratories will be established for learning about and testing XR technologies.

Description

The TeachXR 2024-2026 project supports the research, piloting and deployment of XR technologies—covering virtual, augmented and mixed reality—in primary and upper secondary schools. It provides structured professional development for teachers through training programmes, workshops and mentoring activities focused on developing XR-based learning content and applying immersive technologies in classroom practice.

As part of the implementation, learning laboratories are established to offer hands-on access to XR equipment and applications. These laboratories enable teachers and other participants to experiment with technologies, test educational use cases and further develop their competences. Designed to remain operational beyond the project's lifetime, the laboratories contribute to the sustainability of XR solutions and support the continued adaptation of teaching practices to evolving educational and labour-market needs.

The investment is part of the measures of the Slovenian Recovery and Resilience Plan,

which is financed by the Recovery and Resilience Facility, and is implemented through the public call for proposals"Development Project – Virtual, Augmented, and Extended Reality in Education No. 303-35/2024."

The partners of the project are the University of Ljubljana, Faculty of Electrical Engineering (lead partner), the University of Ljubljana, Faculty of Computer and Information Science, the University of Maribor, Faculty of Education, the University of Primorska, Faculty of Management, the Slovenske Konjice–Zreče School Centre, the Novo Mesto School Centre, the Ljubljana Electrotechnical and Computer Science Secondary School and Gymnasium, Markovci Primary School, the Slovenian National Centre for Vocational Education, and the Institute of Contemporary History. External partners and experts also participate in the project, including colleagues from Radio and Television Slovenia and specialists from Joanneum University (Austria), CWI – the National Research Institute for Mathematics and Computer Science (the Netherlands), and Northeastern University, Boston (USA).The budget is EUR 848 600 00.

2024 Design

Active work on the project started in August 2024 with a kick-off meeting in Ljubljana, where the groundwork for the launch of the educational workshops was laid. One of the first project activities was the lecture of prof. dr. Pablo Cesar, who delivered a hybrid lecture in Ljubljana entitled ‘A Path Towards Volumetric Video Conferencing’, presenting current research developments and practical applications of immersive communication technologies.

2025 Implementation

As part of the project’s knowledge-sharing activities, a guest lecture by an international expert was organised. In January 2025, Prof. Dr. Aron Seitz from Northeastern University (Boston, USA) delivered an online lecture entitled ‘Using Neuroscience Insights to Support Learning and Teaching and the Development of Educational XR Technologies’, which attracted a broad professional audience both online and on site. Recordings of both lectures remain available to future participants in the project’s training programmes.

In the same year, a multidisciplinary team of 25 educators and specialists was established to explore the pedagogical potential of XR technologies. Through four in-person workshops, the group identified key competence needs and priority areas for teacher training and proposed new topics for professional development. These proposals were subsequently translated into structured training programmes now available to teachers in primary and lower secondary education.

By October 2025, a total of nine training sessions had been delivered across Slovenia, involving 130 participants (101 unique individuals). To ensure accessibility and regional coverage, the training sessions were hosted at various partner institutions. The completed training topics included introductory and advanced modules covering XR use in education, such as initial familiarisation with XR technologies, 360° virtual tours, 3D modelling and programming XR solutions.

As part of the project implementation, two innovative educational tools were developed. ‘Tracing Radio Kričač’ is a 360° virtual tour combining cultural heritage, history and electrical engineering to present educational content through immersive XR experiences, based on the historical underground radio station that operated in occupied Ljubljana during the Second World War. ‘LingoVerse’ is an interactive XR platform for foreign language learning, primarily German, which uses virtual environments and simulated dialogues to enhance learner engagement and comprehension.

Throughout 2025, the project maintained strong visibility through social media activities, promotional videos and photo documentation. Project partners also presented project outcomes and demonstrations at a range of public and professional events, including the Audiofestival, Radio Krka, the National Cultural Bazaar, the ‘Languages in Education’ conference, and several information days and digital

education workshops held across Slovenia.

Bodies responsible

- Ministry of Education

Target group

Education professionals

Teachers
Trainers
School leaders
Adult educators

Thematic categories

Modernising VET infrastructure

Improving digital infrastructure of VET provision

Modernising VET offer and delivery

Diversifying modes of learning: face-to-face, digital and/or blended learning; adaptable/flexible training formats

Developing and updating learning resources and materials

Teachers, trainers and school leaders competences

Systematic approaches to and opportunities for initial and continuous professional development of school leaders, teachers and trainers

Supporting teachers and trainers for and through digital

European priorities in VET

VET Recommendation

VET as a driver for innovation and growth preparing for digital and green transitions and occupations in high demand

VET as an attractive choice based on modern and digitalised provision of training and skills

Osnabrück Declaration

Resilience and excellence through quality, inclusive and flexible VET

Subsystem

CVET

Further reading

Project website

Related policy developments

2025 **Implementation**

Digital Action plan (ANDI)

From 2023 onwards, most development projects implemented under the ANDI 2021–2027 framework have been co-financed by the Ministry of Education and funded through the National Recovery and Resilience Plan.

SLOVENIA

Type of development

Strategy/Action plan

Subsystem

IVET

2025 **Discontinued**

Developing Teacher Competencies through Digital and Blended Learning Initiatives

Towards achieving these goals, several projects have been developed to support teachers in acquiring the necessary competencies, integrating digital technologies into teaching, and enhancing the overall quality of education.

Artificial Intelligence for Teachers (AI4T) (2021-2024)

SLOVENIA

Type of development

Practical measure/Initiative

Subsystem

IVET

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