



Best Practice Example: Integration of Artificial Intelligence into the Secondary School Curriculum (AI4ED)

Location: School Centre Slovenske Konjice-Zreče

1. Starting Point and Needs

Digital transformation is one of the key priorities of educational institutions, as the labor market requires new competencies, among which knowledge in the fields of Artificial Intelligence (AI) and Extended Reality (XR) is becoming increasingly essential. At the School Centre Slovenske Konjice-Zreče, we identified the need for:

- updating the curriculum of the Mechanical Engineering Technician program (open curriculum), elective modules, and ITS contents in the grammar school program,
- developing students' digital competences in line with the European DigCompEdu framework (teachers, grammar school students, and students of the Vocational and Technical Secondary School Zreče),
- ensuring permanent integration of new technologies into the curriculum and pedagogical practice.

2. Objectives

We designed the **AI4ED** project at our school with the following objectives:

- to develop learning materials on the basics of artificial intelligence and integrate them into the existing curriculum,
- to ensure the permanent integration of the content into study programs,
- to increase teachers' digital competence through training and the exchange of practices,
- to encourage interdisciplinary collaboration (AI + XR + programming, learning maker lab),
- to enable students to develop projects using modern technologies that foster creativity, problem-solving, and collaborative learning.

3. Implementation

- Platform and materials: We developed an online learning platform in Moodle, enhanced with interactive H5P content, supporting independent learning and work within the Programming ULab course.
- Integration into the curriculum: In the 2nd year of the Mechanical Engineering Technician program, we permanently integrated 5 lessons dedicated to the basics of artificial intelligence. These lessons are carried out each school year. The number of hours continues in project week, where students, together with mentors, define the topics they can present (10 h). In the grammar school program, we designed a new ITS subject that includes new technologies (50 hours). The program continues in the future.
- Teacher training: We presented the platform to teachers at a professional conference. Three teachers tested the materials and partially integrated them into their teaching. Others became familiar with the content and used segments relevant to their subjects. (in total 45 teachers and 12 professional staff and external lecturers).
- Student work: Students actively applied the acquired AI knowledge in developing XR

(Extended Reality) content, created in groups using the Unity software tool – also within the Programming ULab module. In this way, they combined AI with XR, giving them a modern, practice-oriented insight into future technologies.

- Dissemination: We presented the project in several (7) contributions on the institution's website and at various professional events (Lisbon, Zreče). Through this, we invited visitors to participate in the training program on AI integration in education, spread best practices, and encouraged the broader professional community to engage (total of 25 independent project assignments).

Contributions:

- AI4ED Project, January 2023
- Presentation of activities and professional debate at AI4ED project conference, SC Slovenske Konjice-Zreče, January 2024
- AI4ED project coordination meeting at CENFIM headquarters in Lisbon, January 2024
- AI4ED project partnership meeting in Zreče for the development of advanced solutions in education, May 2024
- AI4ED project partnership meeting, November 2024
- Final meeting of the AI4ED project and invitation to collaborate, May 2025
- AI4ED: Teaching staff explored opportunities of artificial intelligence in education, May 2025
- Curriculum integration: pilot at the end of the 2023/2024 school year, implementation in the new school year 2024/2025 (vocational programs), pilot in the grammar school program in 2024/2025, and full implementation and continuation in 2025/2026.

4. Results and Impacts

- **At student level:**
 - o they acquired basic concepts and practical examples of AI applications,
 - o they developed their own AI–XR app projects,
 - o they showed higher motivation in programming due to practical use.
- **At teacher level:**
 - o they gained new knowledge for integrating AI into teaching,
 - o they improved their digital and language literacy,
 - o they created initial examples of interdisciplinary tasks.
- **At institutional level:**
 - o the school strengthened its position as an innovative center for digital transformation,
 - o we established cooperation with partners at the European level,
 - o opened up opportunities for collaboration between schools, companies, and associations domestically and abroad.

5. Challenges

- initial reluctance of some teachers towards introducing new technologies and meaningful integration into the curriculum,
- technical limitations (software, classroom equipment),
- time constraints for introducing content during the school year.



6. Sustainability and Transferability

- the content is a permanent component of the youth program curriculum,
- the materials are designed to be transferable to other programs,
- the platform remains accessible after the end of the project, enabling long-term use,
- the practice is transferable to other schools in Slovenia and abroad, as it is based on open-source tools (Moodle, H5P, Unity),
- further development of content and use of AI assistants.

7. Conclusion

The AI4ED project has significantly contributed to the modernization of learning content and the digital transformation of the school environment. It enables students to acquire practical skills in areas that will shape the future of the economy and society – artificial intelligence, extended reality, and programming. It opens opportunities for teachers to develop new pedagogical approaches, collaborate at the European level, and strengthen digital literacy.

This best practice example demonstrates that artificial intelligence can be meaningfully and sustainably integrated into secondary education, thereby creating added value for students, teachers, and the broader community.

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