Funded by the European Union

DIG-ED: Center for Innovation and Digital Education

FIND OUT MORE INFORMATION:

SHIELD

SIMULATION GAME - BASED HANDS - ON INSTRUCTION FOR ENHANCING CYBERSECURITY LEARNING AND DEVELOPMENT

Project implemented within the Cybersecurity Capacity Building in the Western Balkans project, funded by the European Commission.

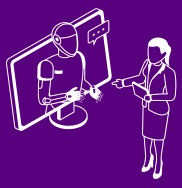
November 2024 – September 2025

PROJECT SUMMARY:

SHIELD (Simulation game-based Hands-on Instruction for Enhancing Cybersecurity Learning and Development) is an educational initiative that combines AI-driven storytelling, gamification, and blended learning to enhance cybersecurity awareness and digital literacy among primary and secondary school students and teachers in North Macedonia.

PROJECT AIMS:

Enhance cybersecurity awareness among students and teachers.

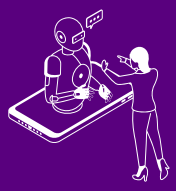


Introduce innovative teaching methods using AI, digital storytelling, and gamification.

Train teachers to effectively deliver cybersecurity content in schools.

Engage students through interactive, game-based learning experiences.

Develop open educational resources for wider use and reuse.



Promote digital and AI literacy in the educational system.

Support safe online behavior and responsible digital citizenship.

ACTIVITIES:

- Develop SHIELD workshop concepts using AI and gamification.
- Train teachers to deliver cybersecurity content.
- Implement SHIELD workshops in schools.
- Organize a national competition for educational materials.
- Publish digital resources and open educational content.
- Monitor implementation and collect feedback from teachers and students.
- Disseminate results through publications, conferences, events and online platforms.

OUTPUTS:

- A workshop model integrating storytelling, AI, and games.
- **40+** trained teachers equipped to teach cybersecurity.
- Over **30** gamified activities created and shared.
- More than **1000** students participated in SHIELD workshops.
- A collection of digital educational resources published online.
- **3** Key note presentations, panel discussion and presentations at International Conferences on ICT & Education

RESULTS:

- Increased teacher capacity for digital and cybersecurity education.
- Improved student understanding of cyber safety and responsible online behavior.
- Enhanced student engagement through interactive and gamified learning.
- Sustained knowledge gains confirmed by testing and feedback.
- Strengthened digital and AI literacy in schools.

IMPACT

Beneficiaries:
Primary and secondary school students who enhanced their understanding of cybersecurity and responsible online behavior through engaging, game-based learning. Teachers also benefited by gaining new digital skills and practical experience in applying AI tools and gamification in their classrooms.

Stakeholders:
School principals supported the project's integration into the school system and recognized its alignment with educational priorities. Parents appreciated the project's contribution to their children's digital safety.

Organizational Benefits:
DIG-ED obtained increased visibility and credibility in the field of digital education.

The project strengthened DIG-ED institutional capacity, expanded DIG-ED teacher networks, and established a proven, scalable methodology that can be used for future educational innovations.

Insights:
AI-powered storytelling and gamified learning significantly improve student engagement and knowledge retention. Teachers, even those unfamiliar with AI tools, were able to confidently adopt the approach.

Legacy:
A scalable and research-backed educational framework, open educational resources, and a community of trained educators ready to apply and expand the methodology

TESTEMONIALS FROM THE PARTICIPANTS:

"The storytelling and gamified lessons made a huge difference. Students were excited, motivated, and actually discussed real-life cyberbullying experiences during class.

This project gave me confidence to try new digital methods. The training was practical, the tools were accessible, and the impact on students was immediate.

The story made it easier to understand what cyberbullying really looks like. It helped me know what to do when I see it happening."

FIND OUT MORE INFORMATION: https://dig-ed.org/category/shield/