Games for Learning Algorithmic Thinking

Co-funded by the Erasmus+ Programme of the European Union

Project Games for Learning Algorithmic Thinking - GLAT

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GLAT Info

- Programme: Erasmus+
- Key Action: Cooperation for innovation and the exchange of good practices
- Action Type: Strategic Partnerships for school education
- Project Reference: 2017-1-HR01-KA201-035362
- Full Project Title: Games for Learning Algorithmic Thinking
- Start: 02-10-2017 - End: 01-10-2019
- EU Grant: 90.779 EUR
- glat.uniri.hr & http://ec.europa.eu/programmes/erasmus-plus/projects (https://goo.gl/AKqYsn)

Project's Team

- Coordinator
  - UNIRI - University of Rijeka – Department of Informatics
- Partners
  - UF - Faculty of Teacher Education - University of Rijeka (Croatia)
  - TU - Tallinn University (Estonia)
  - UL - University of Ljubljana (Slovenia)
  - UKIM - Ss. Cyril and Methodius University in Skopje (Macedonia)
  - SWU - South-West University Neofit Rilski (Bulgaria)

General goal of the project

- Improving students' attitudes towards coding and the development of algorithmic thinking of younger students (already from the 1st grade of primary school)
- Reducing the "fear" towards coding and increasing students' interest in the selection of future career in the ICT and STEM areas (in the long term)
- Algorithmic thinking primarily develops solving various problems that reflect real issues
  - Related to problem-solving skills, logic and creativity
  - Should be integrated into the daily learning through different school subjects
  - Includes application of knowledge from other areas, especially science, mathematics and logical disciplines

Objectives of the project

- Encouraging the integration of algorithmic thinking into the daily teaching through different subjects from the first to fourth grade of primary school
- Training of teachers including the acquisition of contemporary knowledge and skills connected to different ICT related innovative teaching methodologies such as Problem Based Learning (PBL), Inquiry Based Learning (IBL), Game Based Learning (GBL)
- Creating blended learning e-course in LMS (syllabus, materials in English and (partly) in Croatian) for further using in the partner countries and beyond

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Participants

- Direct participants 20 primary school junior grade teachers who will be gathered in the focus group, and will participate in 3 2-days workshops and in the development of learning scenarios
  - The UF will select teachers in cooperation with the Croatian Education and Teacher Training Agency (AZOO), and directly in contact with primary schools
- Students from the classes of teachers involved in the focus group will be taught based on the prepared learning scenarios (about 300 students form the 1st to the 4th grade)
- Teachers and students will participate in surveys and interviews

Expected results

- Workshop syllabus and materials (e.g. presentations, texts, examples of games and activities that encourage algorithmic thinking,..) in a form of blended e-course in the LMS Moodle, developed and evaluated by project's experts (English, partly Croatian)
- Learning scenarios designed and implemented in the classrooms by teachers with the help of online mentoring of experts
  - Among 60 learning scenarios the best ones will be translated into English
- Feedback from the teachers and their students through questionnaires and interviews that will check their satisfaction

The results of the project will be able to apply not only in Croatia but in a similar manner in all partner countries as well as across Europe

ACTIVITIES
A1 - Project managment
A2 - Dissemination activities
O1 - Workshop syllabus and materials
O1/A1 - Syllabus development
O1/A2 - Materials development
O1/A3 - Evaluation
O2 - Learning scenarios
O2/A1 - Focus group workshop sessions
O2/A2 - Learning scenarios development
O2/A3 - Learning scenarios evaluation
O3 - The final version of the syllabus and learning materials
O3/A1 - Preparing the questionnaire and interviews
O3/A2 - Conducting and anylyzing the inquiry
O3/A3 - Preparation and evaluation of the final version with English translation
M1 - Transnational project meeting
E1 - Final video conference

Gantt chart

Intellectual outputs of the project

O1 - Workshop syllabus and materials

O2 - Learning scenarios

O3 - The final version of the syllabus and learning materials

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O1 Workshop syllabus and materials

- Developed for three two-day workshops for focus group of 20 teachers - f2f part of a total of 48 hours and online period for mentoring that follows up each workshop
- Learning outcomes that relate to innovative teaching methodologies in the ICT area such as PBL, IBL, GBL
- Learning with the help of digital didactic games (serious games) for encouraging algorithmic thinking, problem-solving skills, logic and creativity integrated into the daily learning through different school subjects

O2 Learning scenarios

- Learning scenarios design include:
  - f2f workshop sessions for focus group of Croatian teachers, which will be led by the experts from project partners
  - Development of learning scenarios by each teacher
  - Evaluation of the designed learning scenarios
- A total of about 60 scenarios (3x20) will be developed, evaluated by the experts, and tested in the classroom with the students
- The best ones will be chosen and translated into English and included in the final version of the workshop materials as the examples of good practice

O3 The final version of the syllabus and learning materials

- Preparing the questionnaire and interviews that will check the satisfaction of teachers with the education, and collect suggestions for the improvement
- The questionnaire will also be prepared for students who took part in testing of the learning scenarios
- Conducting and analysing the inquiry
- Preparation and evaluation of the final version with English translation

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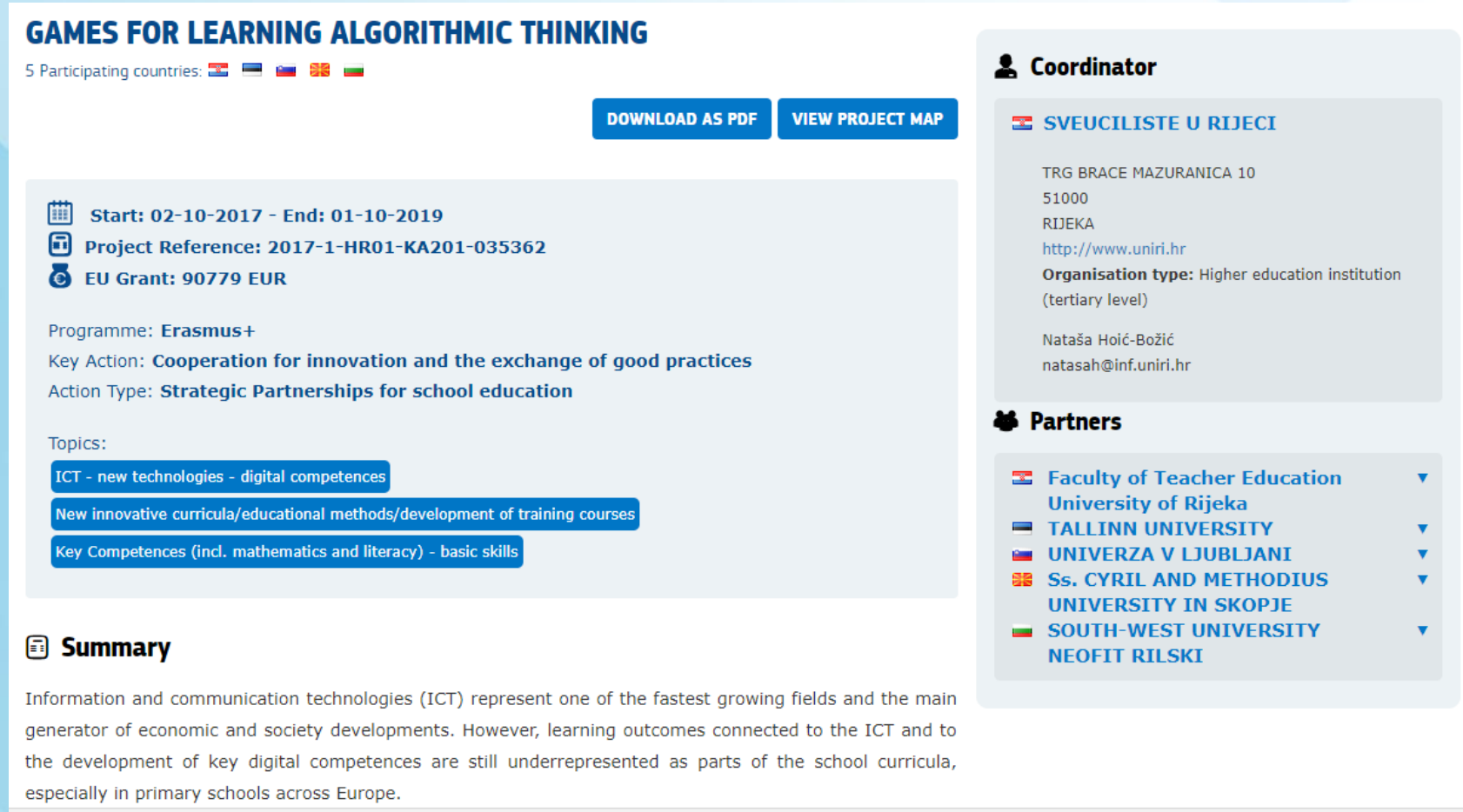
Dissemination & Sustainability

- Visual identity and logo of the project, the project website, Facebook, Moodle as the platform for e-course, written material such as newsletters, reports,…
- Dissemination events such as lectures at schools, presentations at partners' institutions, conferences, …
- Web site and LMS will remain available online after the project
- Organization of informal, non-formal or formal primary junior grade teacher training or study programmes at the institutions that educate future teachers in Croatia, partner countries and beyond

Erasmus+ dissemination platform

- https://goo.gl/AKqYsn



GAMES FOR LEARNING ALGORITHMIC THINKING

5 Participating countries:

DOWNLOAD AS PDF | VIEW PROJECT MAP

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EU Grant: 90779 EUR

Programme: **Erasmus+**
Key Action: **Cooperation for innovation and the exchange of good practices**
Action Type: **Strategic Partnerships for school education**

Topics:

- ICT - new technologies - digital competences
- New innovative curricula/educational methods/development of training courses
- Key Competences (incl. mathematics and literacy) - basic skills

Summary

Information and communication technologies (ICT) represent one of the fastest growing fields and the main generator of economic and society developments. However, learning outcomes connected to the ICT and to the development of key digital competences are still underrepresented as parts of the school curricula, especially in primary schools across Europe.

Coordinator

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- TALLINN UNIVERSITY
- UNIVERZA V LJUBLJANI
- Ss. CYRIL AND METHODIUS UNIVERSITY IN SKOPJE
- SOUTH-WEST UNIVERSITY NEOFIT RILSKI

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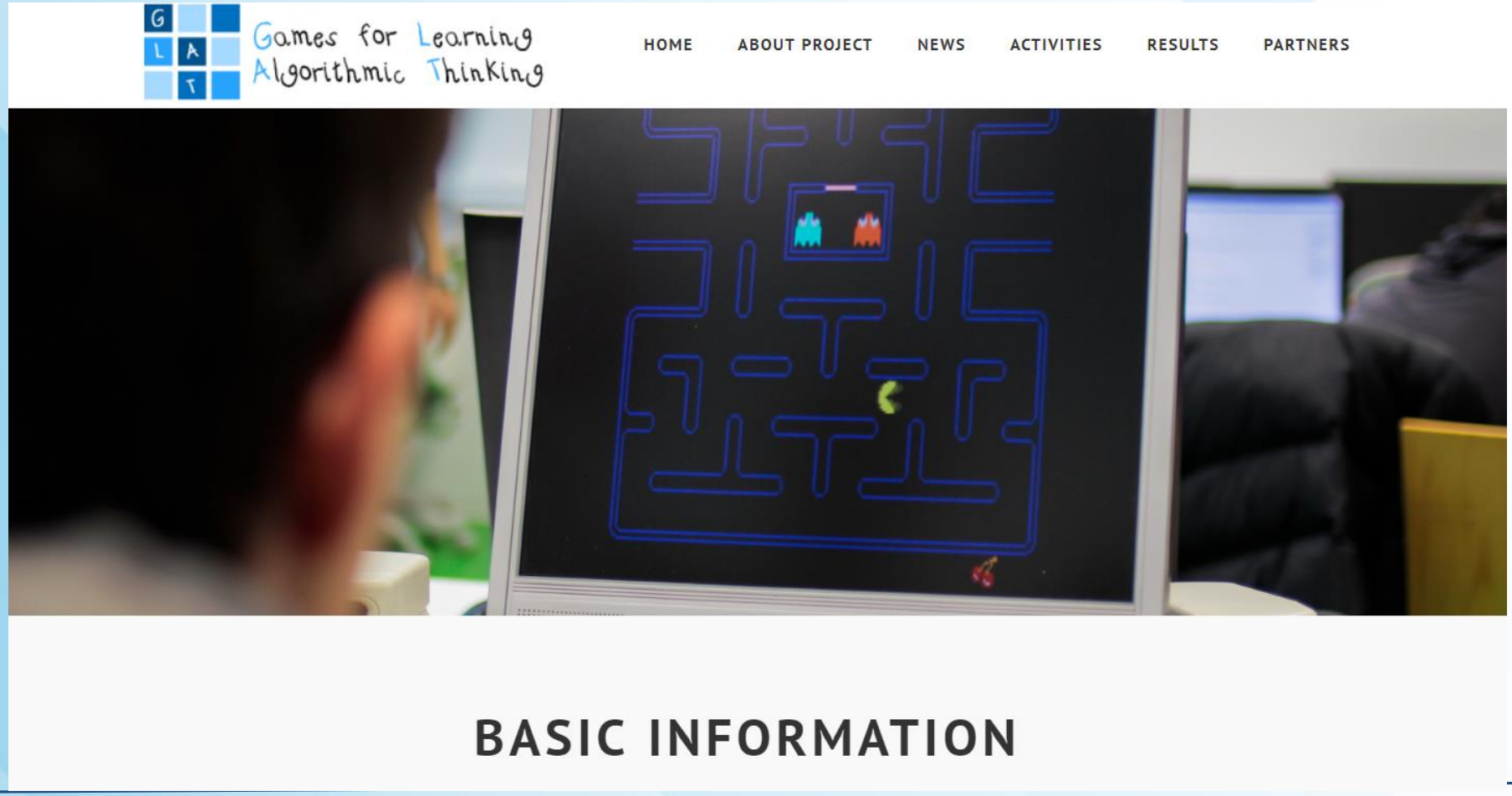
Web page glat.uniri.hr

- 

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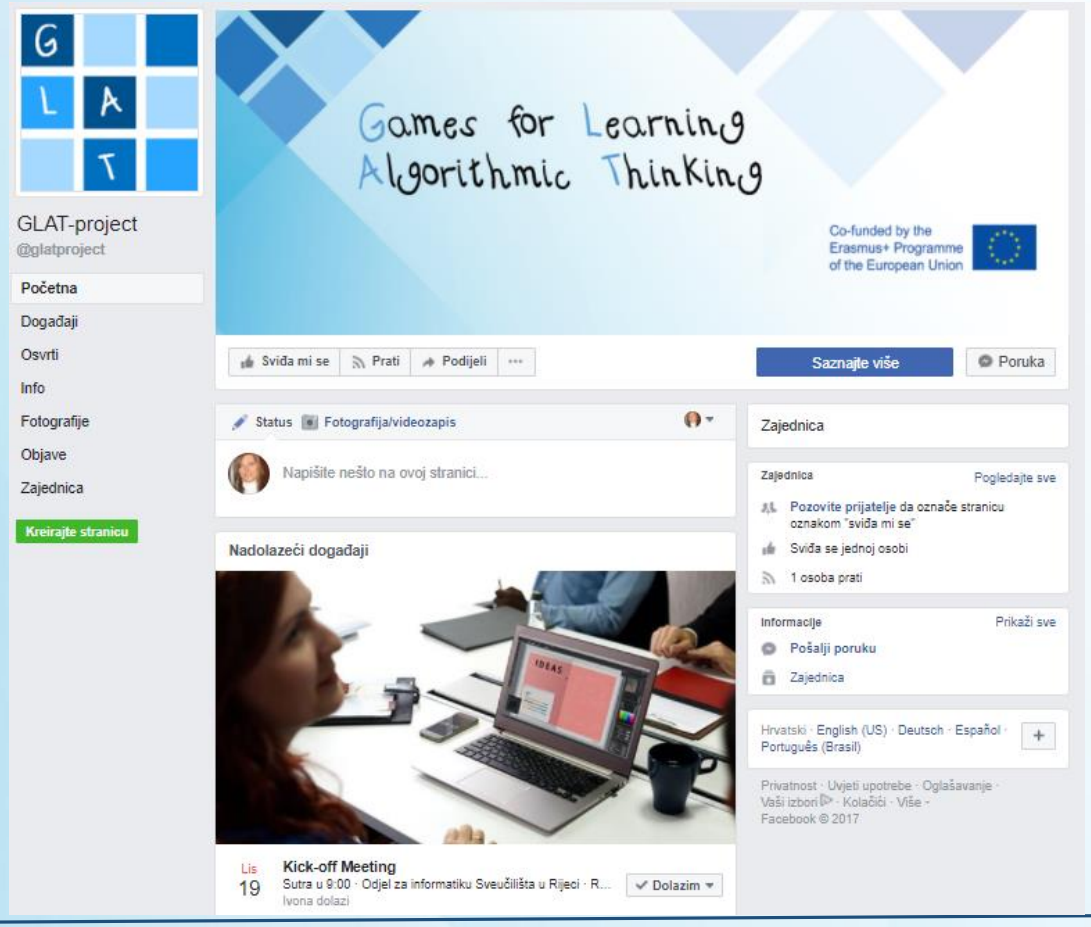
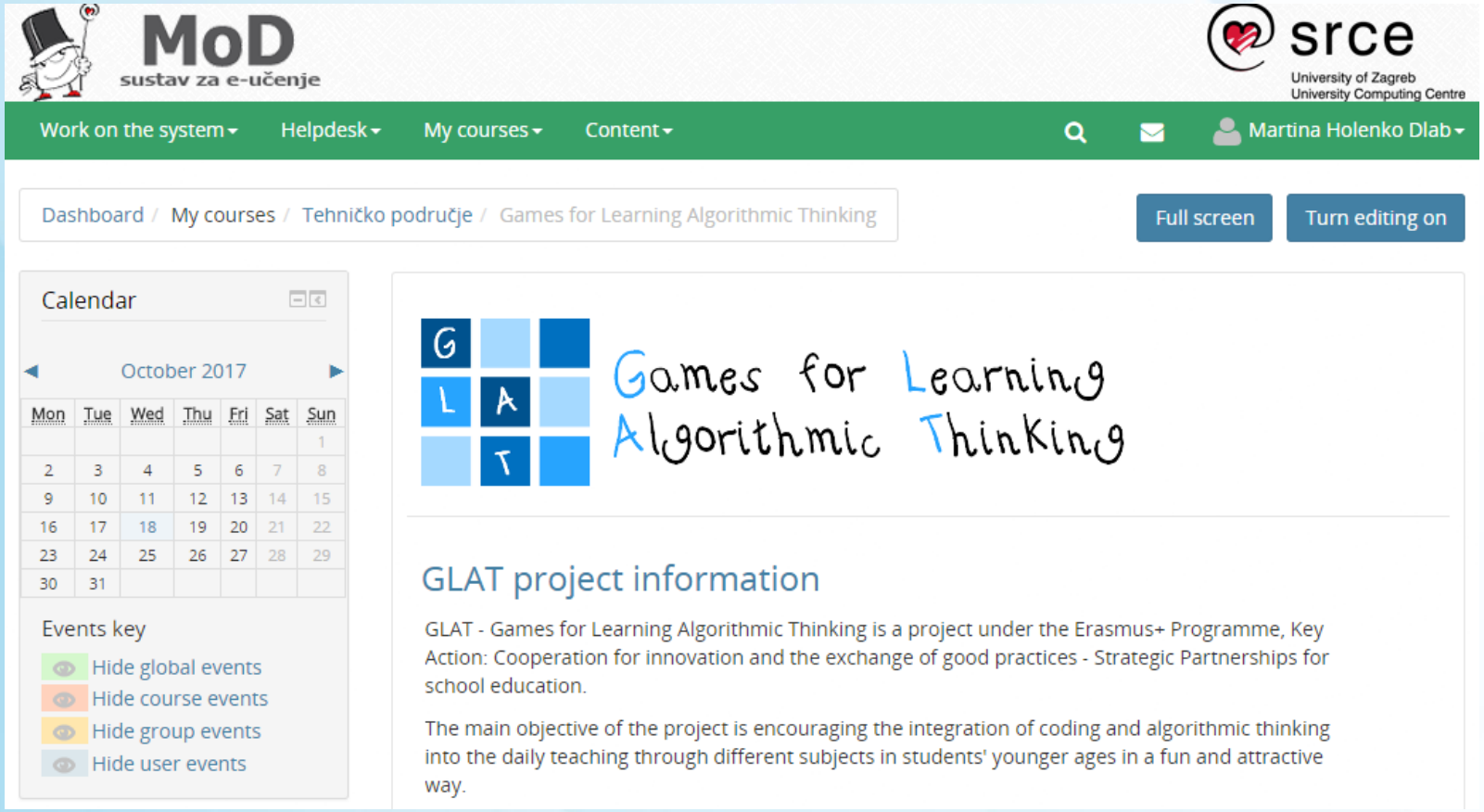
Facebook page

- https://www.facebook.com/glatproject



LMS platform for e-course - Moodle

- https://mod.srce.hr/course/view.php?id=284



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Impact

- Locally
  - teachers from focus group → distribution of knowledge to other teachers
- Regionally
  - education institution and AZOO representatives → discussion and dissemination of project results
- Nationally
  - systematic introduction of themes related to digital competences and algorithmic thinking in education of primary school junior grade teachers
- European and international
  - use of developed learning materials and the best examples of learning scenarios (translated to English)
  - organization of formal/non-formal education

Sustainability

Activities and results that will be maintained after the end of the EU funding:

- Project website → will remain available online
- Developed e-course → will be open for further use
- Developed syllabus of the training programme for teachers (materials and scenarios with examples of good practice) → will be used to plan the programme of lifelong learning
- Inclusion of new courses related to the content of the project (UF)
- Implementation of new materials to supplement existing courses (UNIRI+others)