E-Learning Projects: New Potentials to Enhance Multilateral Cooperation in Informatics

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Agenda

• UNIRI experiences with EU e-learning projects
• EU Erasmus+ programme - Key Action 2: Innovation and good practices, Strategic partnerships
• Project “Games for Learning Algorithmic Thinking – GLAT”
  • an example of good practice in submitting and managing Erasmus+ projects in the area of e-learning
EU funding programmes for TEL

• The importance of international cooperation in science and technology is recognised in several European Union initiatives

• Some examples of funding programmes for research and innovation: TEMPUS and FP7 (before), Horizon 2020, COST, Erasmus+, ...

• E-learning or Technology Enhanced Learning (TEL) – one of the up-to-date topics for EU project proposals
UNIRI and e-learning projects

• University of Rijeka, Department of Informatics (UNIRI) has been involved in several international TEL projects for more than fifteen years:
  • TEMPUS "EQIBELT - Education Quality Improvement by e-Learning Technology" (2004-2007)
  • FP7 "Mobile Game-Based Learning (mGBL)" (2005-2007)
  • Erasmus European Tematic network "Future Education and Training in Computing: How to support learning at anytime anywhere - FETCH" (2013-2016)
  • Erasmus+ project Creative Classroom (2014-2016)
  • Erasmus+ project GLAT (2017-2019) → UNIRI is coordinator! 😊
  • Erasmus+ project Coding4Girls (2018-2020)
Erasmus+ Projects
Erasmus+ projects

• Erasmus+ is the EU's programme to support education, training, youth and sport in Europe

• Besides for students, Erasmus+ has opportunities for a wide variety of individuals and organisations → projects/Key Actions

• Key Actions:
  • Key Action 1: Learning mobility of individuals
  • **Key Action 2: Innovation and good practices**
  • Key Action 3: Support for policy reform
  • Jean Monnet
  • Sport  [https://ec.europa.eu/programmes/erasmus-plus](https://ec.europa.eu/programmes/erasmus-plus)
Key Action 2: Innovation and good practices

• Designed to modernise and reinforce education, training, and youth systems

• Strategic partnerships to support innovation in the sector as well as joint initiatives to promote cooperation, peer-learning, and the sharing of experience

• Areas: higher education, vocational education and training, school education, adult education, youth

• Applications should be submitted to the National Agency in the Programme Country where the applicant organisation is established
GLAT project
GLAT Info

• Programme: Erasmus+
• Key Action 2: 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
Participants

• Direct participants 20 primary school junior grade teachers who are gathered in the focus group, and participate in 3 2-days workshops and in the development of learning scenarios

• 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
Intellectual outputs of the project

O1 - Workshop syllabus and materials
O2 - Learning scenarios
O3 - The final version of the syllabus and learning materials
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
Workshop syllabus

• Three workshops:
  1. WS1: Game based learning and unplugged activities – April 2018
  2. WS2: Problem based learning, online quizzes and logical tasks – August 2018
  3. WS3: Games and tools for learning programming – January 2019

• Available online
1st Workshop

• Workshop “Game based learning and unplugged activities” was held at the UNIRI on 5th and 6th of April 2018

• A focus group of 24 junior grade teachers participated in the workshop

• The main learning outcomes of this workshop were:
  • describe principles of Game Based Learning,
  • use Web 2.0 tools for creating content for unplugged activities,
  • create learning scenarios in order to develop innovative ideas for carrying out unplugged activities
1st workshop

DAAD Workshop, Primošten 5.8.2018

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2nd Workshop

• Workshop “Problem Based Learning (PBL), online quizzes and logical tasks” was held at the UNIRI on 28th and 29th of August 2018

• The main learning outcomes of this workshop were:
  • Describe principles of Problem Based Learning and teamwork
  • Create learning scenarios in order to develop innovative ideas for carrying out logical tasks and online quizzes
  • Use Web 2.0 tools for creating logical tasks and online quizzes
Dissemination

• 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
LMS platform for e-course - Moodle

• https://mod Srce.hr/course/view.php?id=284
GENERAL INFORMATION
Facebook page

- https://www.facebook.com/glatproject
Erasmus+ dissemination platform
• [https://goo.gl/AKqYsn](https://goo.gl/AKqYsn)

**GAMES FOR LEARNING ALGORITHMIC THINKING**

- 5 Participating countries
- **Start:** 02-10-2017 - **End:** 01-10-2019
- Project Reference: 2017-1-HR01-KA201-035362
- 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 Competencies (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.
Future plans, impact and 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)
Thank you for your attention!

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