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EARLY CODE NEWSLETTER

PROJECT NO: 2018-1-TR01-KA203-058832

TRAINING ON COMPUTATIONAL THINKING - Online, June 2021-

The EARLYCODE project is developing a Learning Teaching Training Activity (LTTA). The Training Activity will be organized by Scuola di Robotica (Italy) in April 2021, being postponed from the last year. Due to pandemic conditions, this training will take place in online environment, through synchronous and asynchronous activities, as well as practical hands-on remote activities.

Target group: preschool teaching undergraduates will be involved in the project practice, as main target group of the project. We will take advantage of online learning and increase the number of potential participants (currently a number of 25 participants, distributed between participating countries).

The aims of the training:

- to test the effectiveness of the developed curriculum on preschool teaching undergraduates who are the main target group of the project
- increasing awareness on computational thinking
- equipping future teachers with very demanded skills and competences thus increasing the employment opportunities.

The course will be a fundamental tool, both to involve participants into the project practice, and to understand how much the developed curriculum and manual could be used in early childhood education.

If you are a preschool teaching undergraduate from Romania, Turkey, Latvia or Italy interested in computational thinking you can join us!

Read more on: www.earlycoders.org

IN THIS ISSUE

EARLYCODE GOES ONLINE!

As the current situation caused by COVID-19 affected also our project, in its second year of life, we had to adapt all activities projected to be developed in the next period.

With the benefit of technology we didn't felt disconnected and continued the work in project implementation. This challenging situation will not affect the project outcomes and we search for ideas to use the technology in our benefit.

First major event organized online will be the training session and preliminary discussions and decisions on this upcoming event were made.

Our project meetings - opportunities for communication and interaction - are now online and they are at least as efficient and funny as they were!

Special focus on

HANDBOOK OF TEACHING MATERIALS

Elements of innovation, ensuring the quality of early childhood education is one of the priorities of European Commission, regarding school education which will serve the purpose of creating a safe environment for each individual in the society beginning from very early years. Future preschool teachers need to be equipped and kept up-to-date in terms of the consequences of physical, emotional and mental changes/differences of children as well as new developing social, political and technological changes in the world. Furthermore, computational thinking skills are more and more needed by today's society and children. They need to manage these skills, both to increase their learning approach and to better adapt to day life challenges.

According to these issues the partnership is working on the IO-2, *Handbook of teaching materials*. This document is a collection of educational resources for fostering and developing computational thinking and introducing coding in preschools.

A book for undergraduate teachers...

The handbook is explicitly designed for undergraduates' teachers, and teachers/educators who want to develop their knowledge in teaching Computational Thinking and Coding in Early Childhood Education and to obtain further tools and strategies to improve their teaching skills.

Talking about Coding in Early Years Education can seem daunting, but there are a lot of tools available that are designed to help in this issue. The main tools that you can use are robots without a screen (i.e. Bee-Bots, Cubetto, mTiny, etc…) and/or unplugged robotics tools. Some screen-based devices also exist that you can use (i.e. Scratch Jr, Bee-Bots App, code.org, etc…).

However, in the handbook we take an overview of these techniques focusing on screen-free and unplugged devices, which are much more intuitive than the screen-based tools.

Computational thinking in Early Education...

The introductory part is devoted to exploring the Early Education basis and to focuses on the concept of Computational Thinking.

The manual is also intended to be used as an active tool, so also blank lesson plan templates are available and can be used by readers as a starting point to create their lessons.

Also a set of materials (carpets, unplugged cards set, 3D printable objects, …) are provided in the manual, and will be available for download.

Activity plans ready to use...

We will provide readers with a selection of activity plans that you can use immediately in preschool classroom. These are kept as simple as possible and do not focus on a specific device, allowing you to choose the device you prefer. A selection of analysed topics:

- Physical-motor activities/games
- Concept of sequences and Pattern recognition
- Coding and sequences – Algorithm and Application of Computational Thinking (CT)
- Conditional structure and concept of "if, "if/or else" in coding – Algorithm and Application of CT
- Concept of wait and loops in coding – Algorithm and Application of CT
- Screen-based devices – Algorithm and Application of.

The manual will be available on the project's website, and released under CC-BY-NC-SA 4.0 International license, in English, Italian, Latvian, Romanian and Turkish .

This resource will be available soon on: www.earlycoders.org

Curriculum on

COMPUTATIONAL THINKING

Report on

NEEDS ANALYSIS

The Needs Analysis Report aims is to determine the content of the curriculum ensuring that the outputs meet the needs of pre-school teachers studying in higher education institutions. There were 411 participants in online survey, and the results have shown that:

- future pre-school teachers appreciate they have the necessary technical knowledge to provide coding training.
- when they start to teach coding in their classes, most of them feel inadequate and feel the need of coding training.
- it is important to offer in-service training regarding the feasibility of coding education, newly introduced to curriculum.
- the prospective pre-school teachers prefer computer assisted coding tools to non-computer coding tools in terms of attracting students' attention and embodying teaching. In this regard, having an IT class in each school for coding education will facilitate the transfer of coding education to students and the acquisition of computational thinking skills.
- it is seen that coding education should be given by ICT teachers as a separate lesson from the first grade, at least two hours a week in the future, and that it should be given by the pre-school teachers in schools that do not have ICT teachers.
- pre-school teachers have difficulties in providing coding education; to make it easier the departments of faculties should include the coding education in their curricula.

This article is extracted from the Need analysis Report.

DISSEMINATION PLAN

The EarlyCode dissemination strategy is to ensure a continuing and organized flow of information to potential direct beneficiaries, target groups and stakeholders to increase and maintain their interest and raise awareness of the intellectual outputs.
The project aims to reach as many stakeholders as possible. The introductory meetings, conferences, teacher training and the panel discussions will have an intrinsic multiplier effect.
The general dissemination approach of the project also includes:

- Sharing project outputs regularly to partner institutions
- Planning a coordinated set of activities related to communicating the project results to stakeholders
- Conducting publicity activities through media, virtual platforms and networks, social networks, seminars and webinars
- Maintaining the project website as a centre that integrates and disseminates up-to-date information on all project activities.
- Producing 3 newsletters for distribution to interested stakeholders

Towards the end of the project each partner country will organise a panel discussion to disseminate the project results and Intellectual Outputs to invited stakeholders.

Next intellectual output

TRAINING MANUAL

Based on the developed curriculum the Training Manual will be prepared. The main purpose is that it will support lecturers in the implementation of the developed curriculum. All project partners will contribute to the development of the manual.

In the content you can find: what is computational thinking?, how it is used in preschool education?, description of the possibilities and ways for students to develop computational thinking, coding, and robotics skills. The manual will focus on describing the teaching-learning process in higher education explaining how to introduce computational thinking in higher education using different types of digital technology. You will find both – how to acquire computational thinking using screen-free and screen-based devices as well as not using any digital technologies.

Core teaching strategies for computational thinking and digital competency development in education will be provided (including pedagogical tips and information about student/children's learning, their learning motivators, learning style and engagement in the teaching-learning process, etc.) along with links to relevant educational resources.

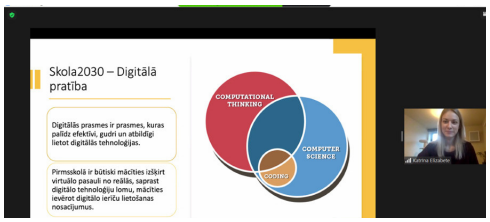
In the Training Manual, the most important aspects of the study content will be outlined including deeper explanations of the concepts such as computational thinking, educational robotics, SMART pedagogy, preschool learning environment, etc. We will gather ways and ideas on how to design classroom settings and how they can foster children's computational thinking skill development, describing how teachers can promote children's computational skill development in preschool.

DISSEMINATION ACTIVITIES

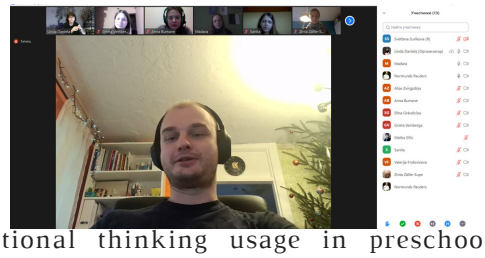
Belfast, Northern Ireland, June 2019

The Erasmus+ Early Code Project was showcased at the Annual International Early Years Conference. The Information on the Early Coding project was shared with 350 interested delegates at the conference. Teachers, Practitioners, Lecturers, Managers and Leaders of Early Years settings in the field of Early Years Education attended the conference. The Early Code project promoted a lot of interest and debate as a relatively new field in the Early Years forum and delegates were very curious about the Intellectual Outputs of the Project.

Riga, Latvia, December 2020



Partners from UL met with students, preschool undergraduates and preschool teachers to introduce EarlyCode project ideas and results.



The online meeting gathered 12 interested stakeholders. Students were interested in the theory behind CT implementation in preschool whereas teachers' interest is more on practical computational thinking usage in preschool everyday teaching- learning process. All participants admitted they would be very interested to have such study course in their study program.

PROJECT MEETINGS

Riga, Latvia
September 17-19th, 2019

The third project meeting took place in the University of Latvia premises. During two days meeting discussions were focused on evaluating current intellectual outputs and discussing on IO2: Handbook of teaching materials. The LTTA - training for computational thinking was also discussed, and the online questionnaire for undergraduates preschool teachers was developed. Next meeting was planned.

Monthly Online meetings

The project meetings are planned to be online due to the restrictions caused by COVID-19. According to a schedule, in each month the EARLYCODE team will have regular meetings to discuss on the project's status and further plans.

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MEET OUR TEAM

Ph.D. professor Linda Daniela is Dean of the Faculty of Education, Psychology and Art. Professor Daniela is an author and co-author of more than 80 publications about processes in all dimensions of education. She has been involved in more than 30 research projects mostly focused on educational technologies.
She has edited books and journals about different aspects of technologies for education for such publishing houses as Springer, Routledge, Emerald and IGI Global.

Luca Gilardi is a Physicist, involved in teaching, educational robotics, and science outreach since 2011.
He taught for two years in a vocational school and he worked as a collaborator, with several bodies, in projects about didactics and science education. Today he is a Scuola di Robotica full member,

and he organizes and holds training courses and events, collaborates in international didactics projects, and project teaching tools and materials.

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