



Online Local Workshop for the Integration of Algorithmic Thinking Skills into Preschool Education

Reporting Partner Institution: UM
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Objectives of the Local Workshops

The partners of ALGOLITTLE determined the objectives of the local workshops as follows.

- 1- To provide reliable information related to the integration of algorithmic thinking into preschool education by making benefit from the experiences and creative ideas of the workshop participants,
- 2- To compile the collected data with the information provided in the knowledge paper which all partners prepared through a joint work before the organisation of the local workshops.
- 3- To use the data collected during the preparation of the knowledge paper and the organisation of the online local workshops to prepare the higher education curriculum as the first intellectual output of ALGOLITTLE.
- 4- To assist preschool teacher candidates, preschool teachers and other interested educators to learn how to integrate algorithmic thinking into preschool education by sharing the collected activity examples with them

Expected Outcomes

The following outcomes were expected from the workshop:

- 1- The separate reports of the five countries that have organised and carried out the online local workshops
- 2- A summary of the reports giving a brief information about the processes
- 3- Quality evaluation of the online local workshop organisations
- 4- Activity examples to the integration of algorithmic thinking skills into different learning areas provided in preschool education
- 5- Grounding the base for the creation of the titles of the curriculum

Workshop Organiser/s (optional)

Presenters:

Prof. Marta Licardo, PhD, University of Maribor, Faculty of Education

Moderators:

Assit. Marjeta Capl, University of Maribor, Faculty of Education

Participants

Partners decided to invite at least 20 participants to the online local workshops. If possible, the number of the participants and the workshops could be increased.

In Slovenia, the online workshop has been carried out in one session. Session date was 15th February 2021. A total of 74 kindergarten teachers and various early childhood education and care experts from kindergartens participated in the sessions. The lists of the participants were shared on the archiving platform with the project consortium.

Methodology

All online local workshops included plenary sessions to present how to integrate algorithmic thinking skills into preschool teaching and a brief presentation about the project practice, to provide example activities and to share experiences.

The workshop organisation

- **During**

- 1- Opening
- 2- An introductory word on the project and conversation with participants how familiar they are with the term “algorithmic thinking”.
- 3- A presentation on integration of algorithmic thinking skills into preschool education
- 4- A presentation on Algolittle project goals and outputs.
- 5- Discussions about algorithms, algorithmic thinking skills and integration activities
- 6- Instructions on filling the form on evaluating the quality of the workshop organization and the form for activity examples.
- 7- Closing

- **After**

- 1- Sharing an online form to gather their opinions and activity examples in writing.
- 2- Sharing an online form on the quality of the local workshop organisation
- 3- Preparing a booklet including the activity examples shared at the workshop

Workshop Process

Workshop – 15th February 2021

Participants:

Workshop 1 - 74 educators from kindergarten from Slovenska Bistrica and Maribor

Process:

Workshop sessions started at 14:00 and lasted 90 minutes.

Prof. Marta Licardo opened the session and made an informative speech about the project Algolittle as well as the aim of the workshop. After a short conversation, Marta Licardo continued the session with the presentation of the concept of an algorithm, algorithmic thinking skills and examples on integration of algorithmic thinking skills into early childhood education. Then she continued with the presentation on Algolittle project goals and outputs.

Reflections from participants were provided by means of a question-and-answer session. Educators stated that they already apply certain algorithmic thinking skills in working with children but did not understand this in the way it was presented to them during the workshop. They offered several examples of activities that can be used to solve a problem through a series of steps or by repeating certain steps until a goal is reached. Educators stressed the importance of integrating algorithmic thinking skills in early childhood education through game-based learning, which was basically the main goal of the workshop, through the use of games with simple algorithms, simple experiments, dance choreography, board games, gamification, trial and error, storytelling, changing roles, labyrinth solving exercises and specific situations that children encounter in everyday life.

After a successful discussion, the participants were instructed to fill in an online form on the quality of the local workshop organisation and to provide five examples of integrating algorithmic thinking skills in early childhood education by filling the Activity pool - notes of the workshop participants.

Results

Results of Workshop sessions:

- Reflections from the participants gave concrete examples and ideas for integrating algorithmic thinking skills in different learning domains. It was noted that they suggested many activities for each learning domain in a short time regarding their own experiences.
- Participants stated that they already apply certain algorithmic thinking skills in practice with children but were not aware of the fact that applied activities serve for developing algorithmic thinking.
- Mutual interaction and awareness were established as a result of the examples, experiences, and discussions on how to integrate algorithmic thinking skills into early childhood education.
- Participants find the project beneficial, and they are willing to receive news about the project as well as participate in the project.

Proposed Curriculum Modules

As aforementioned, examples given for different learning domains have guided our way to create titles for each module in the curriculum. When these workshops and knowledge paper titles are considered together, the following modules are proposed for the curriculum:

- **Module 1: Algorithmic Thinking. (The importance of algorithmic thinking, types of algorithmic thinking, examples from real-life experiences)**
- **Module 2: The Importance of Algorithmic Thinking in Early Childhood Education. (Methods and Strategies to Teach Algorithmic Thinking Skills)**
- **Module 3: Algorithmic Thinking Skills for Cognitive Development**
- **Module 4: Algorithmic Thinking Skills for Language Development**
- **Module 5: Algorithmic Thinking Skills for Social Emotional Development**
- **Module 6: Algorithmic Thinking Skills for Motor Development**
- **Module 7: Algorithmic Thinking Skills for Self-Help Skill Development**

Annexes

1- Participant List

https://docs.google.com/spreadsheets/d/1bOZWc5VlrO05qYHrd_Q9D6BdFGVcJ5US/edit?usp=sharing&oid=100979963010196447255&rtpof=true&sd=true

2- Presentation/s

https://drive.google.com/file/d/14i_80cg46qjST1mQySv_RHOTRovngdpW/view?usp=sharing

3- If possible, video records of the workshop

https://docs.google.com/document/d/11trOyr_ZEOVgOah8Q0TMEswfu4qh4zN_/edit?usp=sharing&oid=100979963010196447255&rtpof=true&sd=true

4- Screenshots from the workshop

https://docs.google.com/document/d/11trOyr_ZEOVgOah8Q0TMEswfu4qh4zN_/edit?usp=sharing&oid=100979963010196447255&rtpof=true&sd=true

5- Quality Evaluation Results

<https://docs.google.com/spreadsheets/d/1YWYC9MmcodAxP4izxkKqJKFcepRtj-rq/edit?usp=sharing&oid=100979963010196447255&rtpof=true&sd=true>