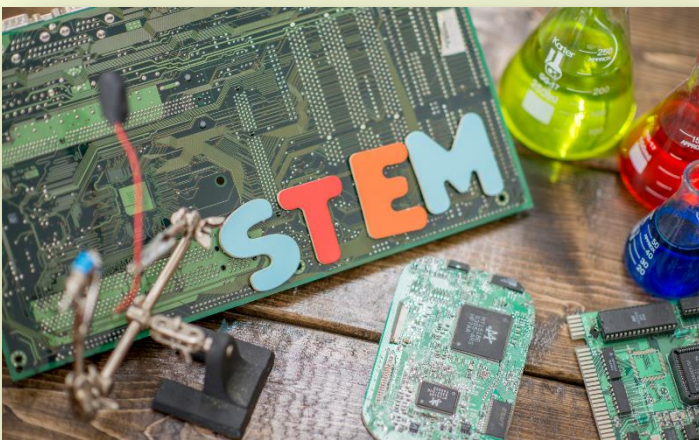




4th NEWSLETTER – OCTOBER 2022

STEM Labyrinth as a method for increasing the level of knowledge through problem solving

Project number: 2020-1-PT01-KA201-078645



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ABOUT PROJECT

The STEM Labyrinth project, “STEM Labyrinth as a method for increasing the level of knowledge through problem solving”, is an ERASMUS+ funded project that started on 1st of November 2020 under the coordination of the Association of European Movements (ATLME), Portugal and a partnership of another 6 organizations, namely, the Learnmera Oy Finland, the Association for European education and mobility (AMETA), North Macedonia, Enjoy Italy from Italy, the Doukas School, Greece, the Martna Põhikool, Estonia and St. George's High School, Cyprus.

With the project we would introduce a new and innovative approach for the teachers in STEM education to follow and use as additional teaching material. We will develop an innovative STEM Labyrinth Method and design a Mobile App, to create a transformative educational experience for high school students. There is great potential in using mobile devices to transform how students learn by changing the traditional classroom to one that is more interactive and engaging. STEM learning is largely about designing creative solutions for real-world problems. When students learn within the context of authentic, problem-based STEM design, they can more clearly see the genuine impact of their learning.





PROJECT PROGRESS

Learning, Teaching, Training Activity - June 2022

In period 21 - 24 of June 2022 Learning, Teaching, Training Event was released in Funchal, Portugal within the STEM Labyrinth project activities.

This training event consisted of 3 modules per day including open discussions and interactive presentations about the design of the APP. The objective was to test the Structured course and through reactions and evaluation to improve its content and design before delivery as ERASMUS+ KA1 course. In this manner all the participants in the training activity were introduced to the content

requirements and soft-skills and competences in order for them to be able to become multipliers to other teachers and to facilitate the learning of students using the APP.



Final Transnational Project meeting – August 2022



The Final Project meeting was held on 27-28 August 2022 in Helsinki, Finland. This is the period of the project implementation when all outputs are in its final phase, so the partnership has discussed its implementation, made adjustments to optimize the results, and made evaluation on the project's progress. The goal of the final meeting was to check the progress of the results, and the extent to which the outputs have

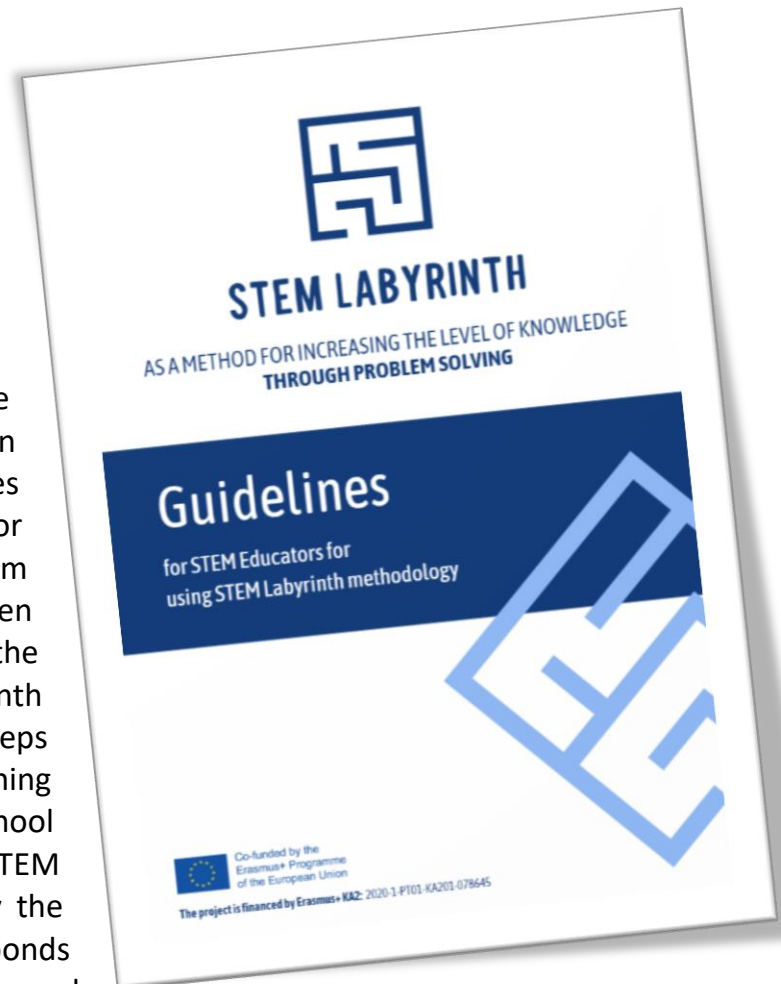
been realized, as well as the quality of their design and implementation. An important part of the meeting was the contribution to the final report we have to submit to the National Agency. Another goal of the final meeting was discussion the dissemination activities and sustainability of the project. The partners agreed on the Exploitation Plan and the opportunities for providing sustainability of the project's results.



PROJECT PROGRESS

Guidelines for STEM Educators for using STEM Labyrinth methodology

Guidelines for using the Mobile App is intended for teachers/educators/STEM administrators who will use this particular method of teaching in their classroom as curricular or extracurricular activity. It will provide the aims and objectives of the Mobile Application, the STEM Labyrinth methodology of getting to the solution of all real-life problems in it, lesson plans and some useful links, resources and explanations on using different ICT and OER tools. Guidelines will elaborate on all needed basic elements for formulating the methodology for problem solving and aims to create a bridge between theory and practice. The main goal of the guidelines is to describe the STEM Labyrinth methodology used in Mobile app and main steps which will be taken in order to prepare training courses and activities compatible with school education processes and requirements for STEM education, in addition on how to the apply the methodology for activities developing bonds between the schools, community and policymakers.



These guidelines will include directions as for:

- 1) How the STEM Labyrinth method and Mobile Application can be used in the teaching process
- 2) How the teacher can create his/her own lessons - plan scenarios based on STEM Labyrinth Method and other resources according to their needs and the needs of the students
- 3) How the teacher can motivate and inspire the students to be problem solvers and creative thinkers
- 4) School principals can adapt Action plan for STEM education
- 5) State boards of education can create a supportive state policy framework as a key foundation to successful STEM education redesign



PROJECT PROGRESS

Training course for STEM Labyrinth method

The description of this output is a course design and its piloting through C1. The course will be structured as a 5 days training with flexibility to be offered on minimum 3 days. The course will be addressed to teachers, teacher trainers and school managers.



Main learning outcomes include:

1. Methodology understanding
2. Understanding the operation of the APP and the guidelines for using it
3. Learning how through STEM Labyrinth method, to make subjects like Mathematics, Chemistry, Physics, and Biology more approachable and interesting for the students, motivate students for problem solving and creative thinking
4. Development of learning plans (real-world problem scenarios) for school students

The content of this structured course will use utilizing content from other outputs for supplementing the material of the course and prepare PPT and sample Learning Plans that can be used by teachers including the following:

- identification and comprehension of the method and definition how it can be used in the classroom
- suggested readings, discussions, assignments supporting the core curriculum, theoretical background and content of the course besides the Mobile application, as this may be needed to satisfy the learning objectives (resources that are relevant to the method that would be presented within the training program and they will be available for use in the future; teachers would learn how some of the tools and applications are used for solving low-attention disorder in students problems)
- planned hands-on activities including classroom scenarios
- evaluation methods for assessing students when they learn through this method
- hands on activities on using the Guidelines and the Toolkit
- discussion session for improving communication skills and self-reflections for contributing to their professional development as teachers
- elements on becoming adaptive to upgraded technologies will be included



MOBILE APP STEM LABYRINTH

Many everyday situations and problems require not only pure science and mathematics knowledge in order to be solved, but also problem solving skills, high-order thinking strategies and creativity. Thus App STEM Labyrinth will put the students in the centre of a real-life situation and it will challenge them to begin solving problems and eventually reaching the solution. Through providing help at several stages, the app intends to increase the motivation and the students' understanding of the problem.

Mobile App represent a virtual simulator of real-life problems asking learners to tackle a real-world problem and by doing that to gain knowledge through problem solving.

Once a user downloads the app, he/she will be able to choose between the different types of categories: Environmental problems, Health and medicines, Urban Infrastructure, Economical solar energy, Access to clean water etc.

Download it here 📲📲

[STEM Labyrinth Mobile App on Google Play Store](#)



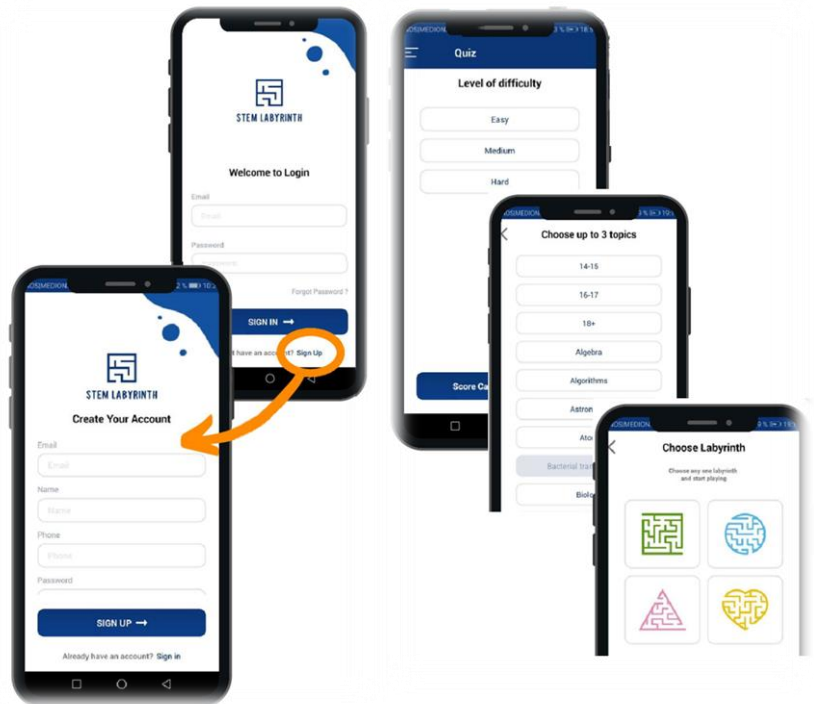
Mobile App is expected to have greatest impact over wide audience, especially young people who need to have developed 21st century skills, such as digital skills, critical thinking, problem solving, innovative and analytical thinking for career and pathways in fast moving world. Not only teachers and students, but graduates, university students and any interested individuals not only in schools but in any non-formal educational environment would benefit from the use of the Mobile App. It will encourage curiosity and confidence, connect in-class experiences to real-world concepts, and prepare today's students for a promising future. App will help students develop and apply a conceptual understanding of science, technology, engineering, and math by solving real-world problems, designing solutions to novel problems, and creating new inventions.



MOBILE APP STEM LABYRINTH

At different stages students would be able to get additional hints in the form of pictures, animations, videos etc. that will enable them to move forward in the “Labyrinth” and get out of it with a solved problem. The STEM Labyrinth application will be comprised of real life problems - everyday situations, which can be solved with relevant knowledge and skills in math and science, using technology.

The method STEM Labyrinth involves giving clues and hints, hidden formulas, definitions and drawings, but not answers. The purpose of the application is not giving them answers, but making them think and learn at the same time. The core of it is learning the most common operations and relations and using them in their everyday life.



App will provide clues and paths towards solving the defined problems and a step-to-step approach that will grab the attention of students and inspire them to get excited about STEM. Once a user download app, he/she will be able to choose between the different types of categories: Environmental problems, Health and medicines, Urban Infrastructure, Economical solar energy, Access to clean water etc.

The App is all about problem solving, decision making, and understanding causation. Allows for hands-on, interactive learning, fosters scientific thinking by placing students in a situation where they must form, test, and revise strategies — specifically, the strategies they develop to learn and master the rules of the game. Helps With Fast Strategic Thinking & Problem-Solving.

PARTNERS

