The Erasmus + **SCRAPY** project aims to strengthen educators' competencies for distance STEM learning by offering a state-of-the-art solution of custom-made hardware and software in order to teach young students physical computing, programming and DIY electronics development.

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SCRAPY

Strengthening educator's competencies for distance STEM learning through physical computing & DIY electronics

Rationale

The ever-increasing use of technology in all aspects of modern life has made the youth to be dependent on online activities while interest in offline learning activities is lost. For students to engage in school subjects and develop related competencies, educators should provide them primary with the proper stimuli and secondary with supporting knowledge and skills. In addition, the lack of direct support from a tutor along with students' feelings of isolation and technological gaps have endangered STEM education to lose its uniqueness of building things.

Aims and objectives

- Providing educators with a hands-on experiential approach to physical computing and programming

- Developing an effective educational package

- Strengthening educators' capacity to offer engaging and stimulating lessons

- Incorporating gamification and experiential learning in the teaching procedure of STEM-related and other subjects.

- Creating a community of practice for educators and learners

- Creating evidence-based policy and research recommendations for the use of hands-on educational play in primary and secondary education curricula.

- Reinforcing the ability of educational institutions

Target group

- Teachers/educators of STEM subjects in secondary education

- Students (8-14 years of age)

- Parents, educational community (trainers/academic staff)

- Policymakers, ministries of education and academic bodies

Products

- A toolbox of sensors, electronics and other peripherals, powered by a Raspberry Pi Pico

- An online drag & drop programming platform to program the electronics

- An educator's guide with lesson plans on how to deliver the lessons; and an online collaboration environment for educators and learners.

Expected impact

The expected impact of the project will be to elucidate findings regarding ways of introducing children to physical computing through hands-on teaching.