



Erasmus+

## Creating a STEAM Platform

Project Report Publication

Citywise Education & Room For Art

KA210 – YOU - Small Scale Partnerships in Youth

### Abstract

Citywise Education received funding through the Erasmus+ KA210 initiative in 2022. Over the last year, Citywise has worked in partnership with Room For Art (Nicosia, Cyprus) to create a STEAM platform with lesson-type video activities. These can be used to implement STEAM activities through other organisations with promogrammes to young people across Europe.

## **Introduction:**

This report was conceived as part of the Small-Scale Partnerships in Youth Erasmus+ Programme (KA210-YOU). Our project, 'Creating a STEAM platform', was created to under three core objectives which were:

- Getting youth organisations and STEAM organisations to work together to create a full activity programme (beginners to masters) to implement STEAM in youth organisations.
- Create an online course at the disposal of any organisation who would like to teach STEAM to the children.
- Create a methodology adapted to young people with fewer opportunities and difficult social backgrounds and provide a method that helps them gain confidence and useful skills in STEAM.

Overall this project, envisages a world where young people have equal opportunities to the interest, curiosity, careers and learnings developed as a result of engaging in enjoyable STEAM activities. The overall project sought to combine the learnings of young people to create a replication model for other youth organisations nation-wide and throughout Europe. The involvement of the young people throughout this project was crucial to the video content created. It allowed for consultation and informal feedback to shape the direction of the STEAM content in the videos.

This report seeks to act as a guidebook for current and future practitioners, in documenting our learning, to support the proliferation of STEAM programmes and activities for young people in Europe, particularly among those facing marginalisation.

## **Rationale:**

Before the creation of this project, there was a plethora of reports and research to suggest that there was a need for improved STEAM guidance in the youth sector. The below rationale formed the underlying basis for why this project was needed. Through substantial European Policy, and local statistics in Ireland and indeed Cyprus, our idea for 'Creating a STEAM Platform' was implemented.

### **European Policy:**

A key aspect of this project, was the inclusion of young girls in these STEAM activities, but also to reach more young girls throughout Europe. In Ireland, there is a low-interest in STEAM at a young age shown by "A 2019 report conducted by the STEM Education Review Group of Ireland revealed that there was a significant drop-off in interest in STEM subjects at Leaving Certificate, especially by women. In the latest STEM Education Review Group report, it stated that only 25% of the citizens working in STEM industries in Ireland were women".

### **Irish Statistics:**

Just 12 per cent of Irish school girls understand computer science, the lowest among 37 European countries surveyed by Google in a new report for International Women in Engineering Day.

A lack of role models was found to be a key barrier by the research with Ireland recording the highest scores of the countries surveyed, for both girls and boys, among students who wanted more people in the field like them or more relatable role models on social media.

#### Cyprus statistics:

School pupils in Cyprus score below the EU average according to PISA which is the OECD's Programme for International Student Assessment. PISA measures 15 year-olds' ability to use their reading, mathematics, and science knowledge and skills to meet real-life challenges.

The latest data available (2019) also shows that poverty percentage in Cyprus, the AROPE indicator, is 22.3%.

#### Local Context:

The area of west Tallaght is considered to be highly disadvantaged or underserved with less than 6% of the local population holding a college degree (Pobal, 2022). The Pobal deprivation index (2022) denotes the immediate areas we serve of Jobstown & Killinarden as "extremely disadvantaged" the lowest possible rank on the deprivation scale. The reasons for this point to high levels of intergenerational poverty, high unemployment and social deprivation. Also, the immediate locality we serve is considered the most disadvantaged under the DDLETB remit.

#### **Erasmus+ Priorities:**

Over the course of this project, there was a specific emphasis made on the below Erasmus+ priorities which are at the key of any European project. It is crucial to note these objectives when delivering your own Erasmus+ project, to ensure you embed these into your project plan.

1. Inclusion & Diversity
  - A key objective of our project was to support young people from various backgrounds and ethnicities. This project allowed us to include young people from different socio-economic backgrounds throughout our community and Nicosia, Cyprus.
2. Digital Transformation
  - A core aim of this project was to create a platform that would digitally transform and enhance future learning in STEAM for young people. This platform is a digitally transformative initiative which will target change in the way STEAM is taught to young people in youth sector throughout Europe.
3. Civic Engagement
  - Our project relied significantly on the input of members from our organisation. At the beginning of our project, we surveyed young people in our organisation on their strengths in STEAM. For example, 42.4% of members surveyed stated that they would rate their Robotics skill as 'very average'. This laid down the foundations for how some activities were designed throughout our project.

### **How to use this Guide**

This report, firstly, outlines a set of principles which have been identified throughout the course of our project. We think that practitioners on the ground have the best knowledge of what works in their communities and the creativity natural to STEAM activities is best harnessed when activities are co-delivered. However, we have proposed a number of sample activities to get you started based on our learning. Finally, we have created digital learning resources and an accompanying lesson plan to deliver with your groups.

### **Framework/Principles:**

Throughout our project we discovered many new learning methods on how to best inculcate an interest in STEAM to young people. Our project staff identified five defining principles that will ensure you to deliver your best possible project. This should form the basis of your own STEAM framework going forward.

#### **Building Blocks:**

Our first key principle relates to the importance of implementing a 'building block' style to your activities and lesson plans. Most crucially to have activities that build on previous work done by students and introducing programmes that fit together. This will help create a path towards the final outcome with milestones. This way students can see where they're at, where they need to be and what they need to do to bridge the gap. In other words, a young person should be on a journey, with activities each week building on previous work, but also structurally, the project and wider programmes should also fit together. As such STEAM projects develop, it also creates opportunities for creating role models, as a young person looks up to those ahead of them in the progression framework.

#### **Fun & Engaging:**

We believe at the heart of all youthwork projects are fun and engaging activities that motivate and inspire young people to learn and better themselves as individuals. Fun activities allows for creativity to happen. This happens when guidelines and instructions are clear so that innovative energy can be funnelled in the right direction. In this case, the completion of their STEAM tasks.

#### **Informal Learning:**

One of the benefits of youthwork is that young people can become comfortable to express themselves in an out-of-school environment. Also, many young people tend to learn important life lessons and leadership skills through their youth programmes, unlike in school which can have a high emphasis on academics. We believe the correct model is to adopt an informal way of learning, without that 'school strictness' and over emphasis on academic and routine learning. STEAM can be taught in an environment away from the pressure of over emphasised examinations and syllabus type learning. It can be used creatively, to engage young people in a fun and engaging way which make it feel less formal.

#### **Skills First:**

Before anything, you must ensure that a skills first approach is at the core of your students learning. This involves an emphasis on improving soft skills, confidence, self-efficacy and resilience which provide young people with skills for life. The appetite for project based learning can also force young people to think critically, and these skills can be improved and applied to other challenges they may face.

#### Role Models:

As mentioned in the Google Report above, having role models to help in the facilitation of your project is pivotal to success. There is countless benefits to this, but the main being that young people become more invested in STEAM as they envision a direction for themselves so that they can mirror the role models they want to be. Having role models from the local community can also increase the impact of your STEAM project. Many students feel like it is easier to relate to youth workers who grew up or live in their own community, and it is through our own experience that young people are more likely to be inspired by someone from their own area than anyone else.

The involvement of role models is critical for making real learning happen. Connecting learners and teachers to the outcomes of their actions, decisions and work can be beneficial to their self-esteem and confidence as they can self-reward themselves by recognising they've progressed in their STEAM education.

#### **Sample activities:**

Below you will find access to a combination of STEAM activities where you can help young people to get better acquainted with each sub-discipline and their interdependence. You will also find a simple introductory game to initiate beginners into the STEAM way of thinking. Our digital resources, created as a result of this Erasmus+ project are housed online and can be accessed below. It was decided that to reach the most people, and increase accessibility, the resources would be housed on our website and also YouTube and OneDrive.

- [Slideshows](#)
- [Introductory Game](#)
- [Digital Resource](#)



STEAM Platform Teaching Resource