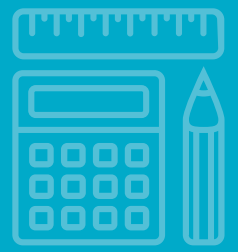
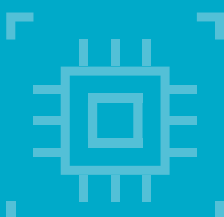




STEM IN YOUTH WORK MAKER PROJECT

NYCI TechSpace STEM in Youth
Work Maker Project

FINAL LEARNING REPORT



OVERVIEW

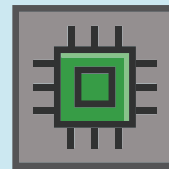
This project has highlighted that including STEM in youth work enhances it in unique ways. For example, STEM provides youth workers with tools to engage young people that they would otherwise struggle to engage using the more traditional youth work approaches such as music or sports. STEM also enhances youth work outcomes related to learning and development, such as problem-solving skills, in distinctive ways. This project has also shown that youth work has a valuable role to play within Ireland's wider STEM education ecosystem by addressing some of the key challenges it faces such as:

- Delivering the STEM that is relevant to young people and captures their imaginations, rather than passing on remote theories and concepts.
- Making STEM practical and hands-on and a process where failure is important and mistakes provide valuable learning opportunities.
- Changing young people's perceptions about STEM and STEM professions.
- Engaging young people from groups and backgrounds that are under-represented in further/higher STEM education and professions, for example, young people who are at risk of educational disadvantage and girls.

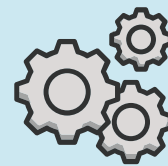
STEM IS...



SCIENCE



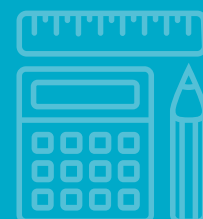
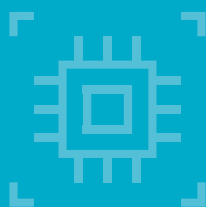
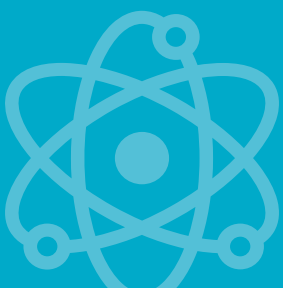
TECHNOLOGY



ENGINEERING

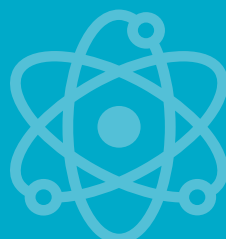
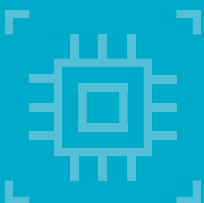


MATHS



While Ireland's youth sector, in its enthusiasm for and uptake of STEM, is pioneering and has captured attention across Europe, there are resource and capacity issues which prevent it from reaching its full potential in this area. Through increased recognition of STEM in youth work, and enhanced support by capacity building organisations, formal education and relevant local and national statutory agencies, the unique role of youth work in this area could be further harnessed. This could lead to great benefits for young people as well as our wider society and economy.

YOUTH WORK ENGAGES YOUNG PEOPLE WHO ARE UNDER-REPRESENTED IN STEM



IMPACT

The evaluation of the project indicates that it has had significant impact.

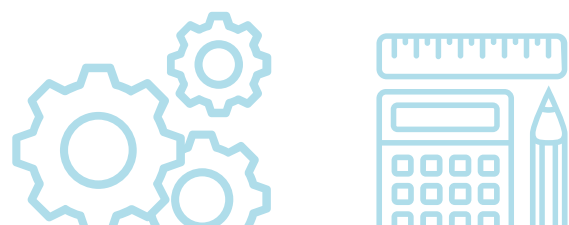
YOUNG PEOPLE:

- Youth workers report that using STEM in their practice has multiple benefits for young people relating to STEM technical skills (e.g. circuitry and soldering), 21st century skills and youth work outcomes (e.g. communication, teamwork, creativity, problem-solving and confidence).
- 4,871 young people have gained access to inspiring, hands-on STEM opportunities in settings where they would not previously have had access. Most of these young people are from backgrounds or groups that are under-represented in STEM or from local areas where there are limited out-of-school STEM opportunities (e.g. 48% of participating youth workers had plans to deliver STEM projects with early school leavers).
- Young people's perceptions about STEM and its relevance to them has improved.

“ Creative, practical and inventive

YOUTH WORKERS:

- have gained the skills, knowledge and confidence needed to deliver inspiring, hands-on STEM projects with young people (87% of participating youth workers).
- have been using the equipment provided to deliver STEM in various contexts, from one-to-one work with young people who are self-excluding from school, to groups of young participants in Garda Youth Diversion projects (85% of participating youth workers).
- have enhanced perceptions about STEM, see its relevance in youth work, and are better able to communicate its importance to young people (89% of participating youth workers).
- have enhanced youth facilitation skills because the STEM they have learned is inquiry-based, exploratory and encourages making and learning from mistakes (85% of participating youth workers).
- want to continue to advance their STEM practice and want more continuous professional development opportunities and resources to do this.





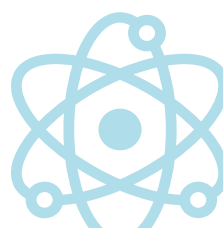
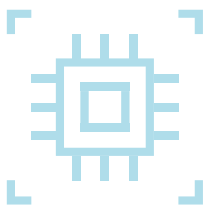
“ Interesting, challenging and rewarding

“ Fun, exciting, interesting

“ Fun, thought-provoking, information-filled

YOUTH SECTOR:

- There is far greater awareness about how STEM can be used to enhance youth work outcomes and enthusiasm for using it in youth work.
- The project has successfully encouraged and equipped a significant segment of the youth sector to deliver engaging STEM projects in various contexts.
- Many participating organisations have embedded STEM within their organisational practice, with different staff /volunteers, working at different levels, taking part in different opportunities offered through the project (from youth workers taking up introductory training to managers taking part in learning network meetings focused on organisational policy and strategy).
- Many participating organisations are going on to leverage in external resources to further enhance their STEM approaches. Examples include NYCI's Artist and Youth Work Residency Scheme, and NUI's Certificate in Digital Creativity in Youth Settings with Camara Education Ireland and Maynooth University.



RECOMMENDATIONS

FOR YOUTH WORK ORGANISATIONS

- Recognise the unique value STEM can bring to youth work, and the unique role youth work can play in enhancing young people's participation in STEM, and invest in development opportunities for staff and volunteers.
- Develop organisational policy and strategy around STEM with support from organisations such as NYCI and Camara Education Ireland through TechSpace.

FOR ORGANISATIONS THAT SUPPORT THE YOUTH SECTOR

- Continue to develop the support offered to the youth sector, from basic introductory training to small grant schemes and higher level courses.
- Deliver support on general themes such as on income generation and evaluation but with a focus on STEM.
- Facilitate STEM networks to enable youth workers to peer-learn and share resources.
- Develop links between the youth sector and the wider STEM education sectors at local, regional and national levels.
- Develop support that enables youth workers to communicate STEM concepts and theories in ways that are appropriate to youth work.

FOR ORGANISATIONS THAT DELIVER HIGHER EDUCATION FOR YOUTH WORKERS

- Further enhance the STEM development opportunities included in higher level courses and qualifications.





FOR FORMAL EDUCATION

- Work collaboratively with youth work organisations on STEM education to learn from youth workers' experience of delivering hands-on STEM projects that inspire young people.
- Provide youth workers with access to schools' equipment and STEM knowledge.
- Refer young people to local youth work organisations to help change their perceptions about STEM.

INFORMAL SCIENCE COMMUNICATORS

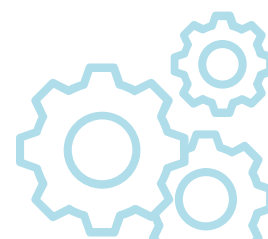
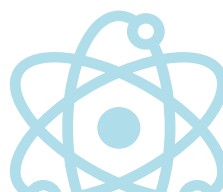
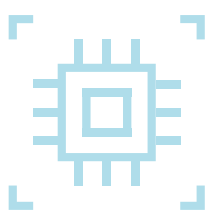
- Work collaboratively with youth work organisations on STEM education to learn from youth workers' experience of engaging diverse groups of young people.
- Provide youth workers with access to STEM equipment, resources and knowledge.

STEM INDUSTRIES

- Establish a fund to support the role of the youth work organisations within the wider STEM education ecosystem.

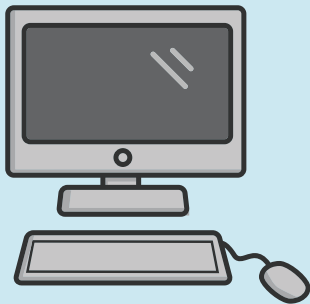
FOR NATIONAL STATUTORY AGENCIES AND CENTRAL GOVERNMENT DEPARTMENTS WITH REMITS OF RELEVANCE TO STEM EDUCATION, ART OR YOUTH WORK

- Recognise the unique role that the youth sector can play within Ireland's wider STEM education ecosystem and invest in it through relevant departmental policies and strategies.
- Foster collaboration between formal education and the youth sector to widen young people's access to enriched STEM experiences.
- Develop different pathways for young people into STEM jobs such as through QQI training, apprenticeships, Work to Learn and government schemes.
- Invest in research to learn in more depth about the impact of STEM in youth work on STEM learning outcomes for young people and on their quality of life.



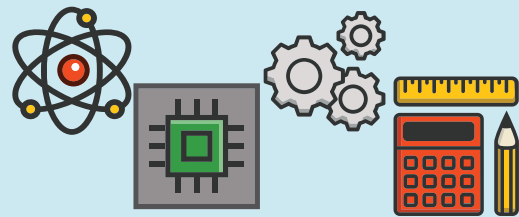
THE PROJECT IN NUMBERS

The project aimed to strengthen and increase the delivery of STEM education in youth work. In its two years:



€14,250

worth of equipment was distributed to young people via youth work organisations

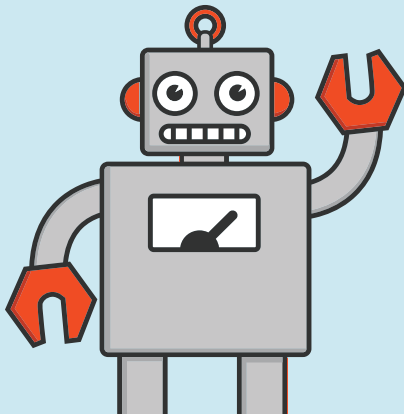


4,871

young people had access to hands-on, fun STEM opportunities outside of school. Many of these were from groups or backgrounds that are under-represented in STEM

4000

robots were made



318

youth workers from every part of Ireland took part in 39 introductory or advanced trainings





120

youth work leaders, managers and champions took part in six learning network meetings



13

STEM in Youth Work awards were presented to young people and their youth workers

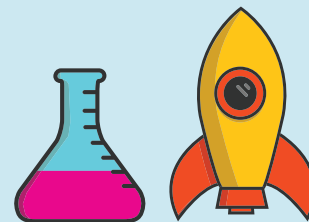
130

youth work volunteers and leaders took part in STEM taster sessions



55

STEM projects by young people were exhibited at two annual ESB Creative Tech Fest events



The project was delivered by the National Youth Council of Ireland (NYCI) and Camara Education Ireland through TechSpace. This partnership was critical to its success. NYCI brought its expertise in delivering systemic capacity-building programmes and extensive research on the technology-related support needs of youth work, while Camara Education Ireland brought its experience of addressing such needs through its pedagogical and technological specialism.

THE PROJECT PARTNERSHIP

The partnership was between NYCI (lead partner) and Camara Education Ireland (delivery partner). This project was delivered through the TechSpace Programme.



Thank you to all the youth workers, managers and organisations who participated in the project and supported the project team.



National Youth Council of Ireland
3 Montague Street, Dublin 2
D02 V327
www.youth.ie

