Robotics
Beyond
Borders

Robotics beyond
borders

08/2019 – 7/2021

Nordplus

MERCURIA BUSINESS COLLEGE   KØGE HANDELSSKOLE   Tallinna Polütehnikum TPT   YLITORNION YHTEISKOULUN LUKIO

Why?

More control & confidence

Understanding the logic of technologies

Creativity & self-expression
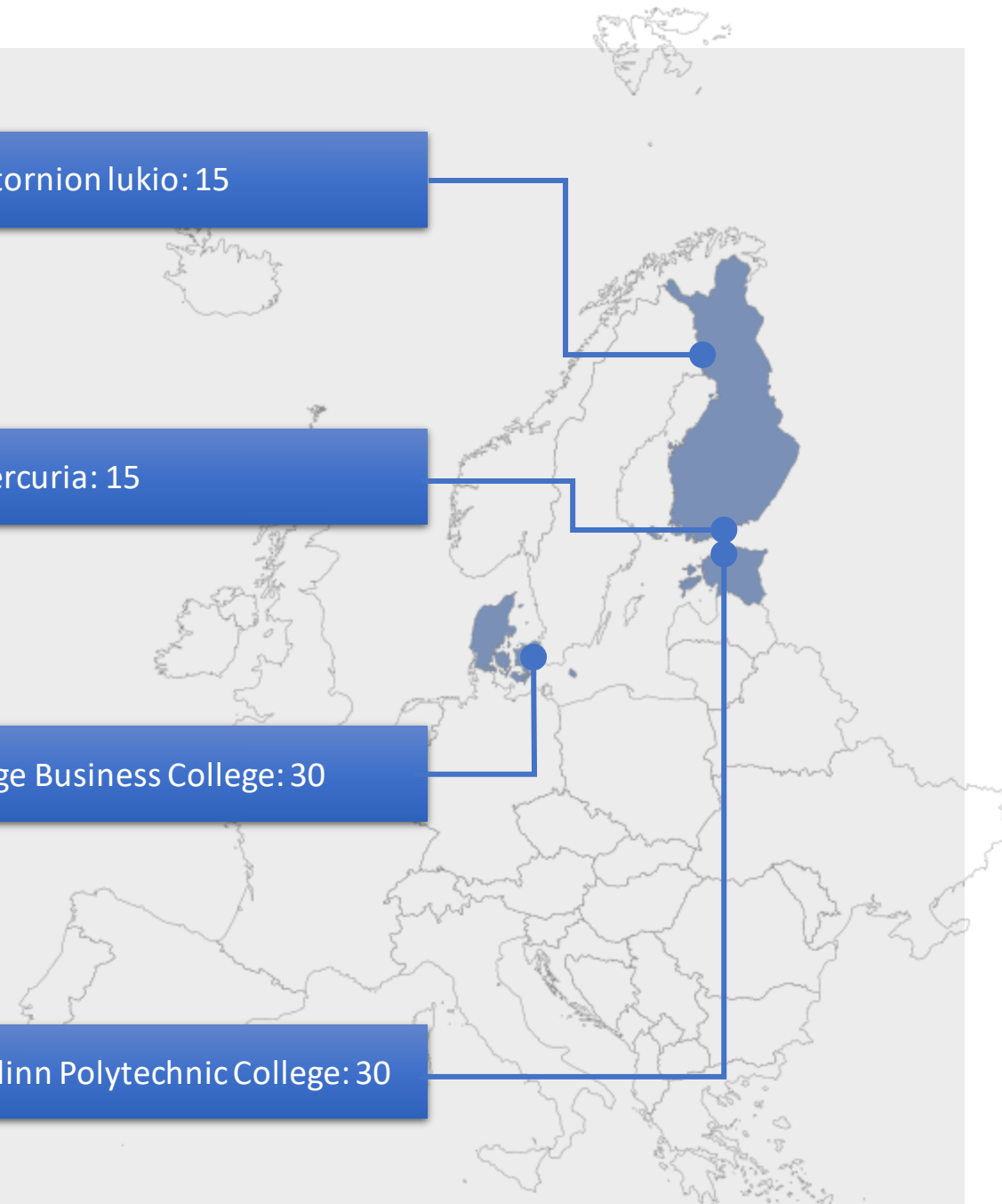
Solution orientation
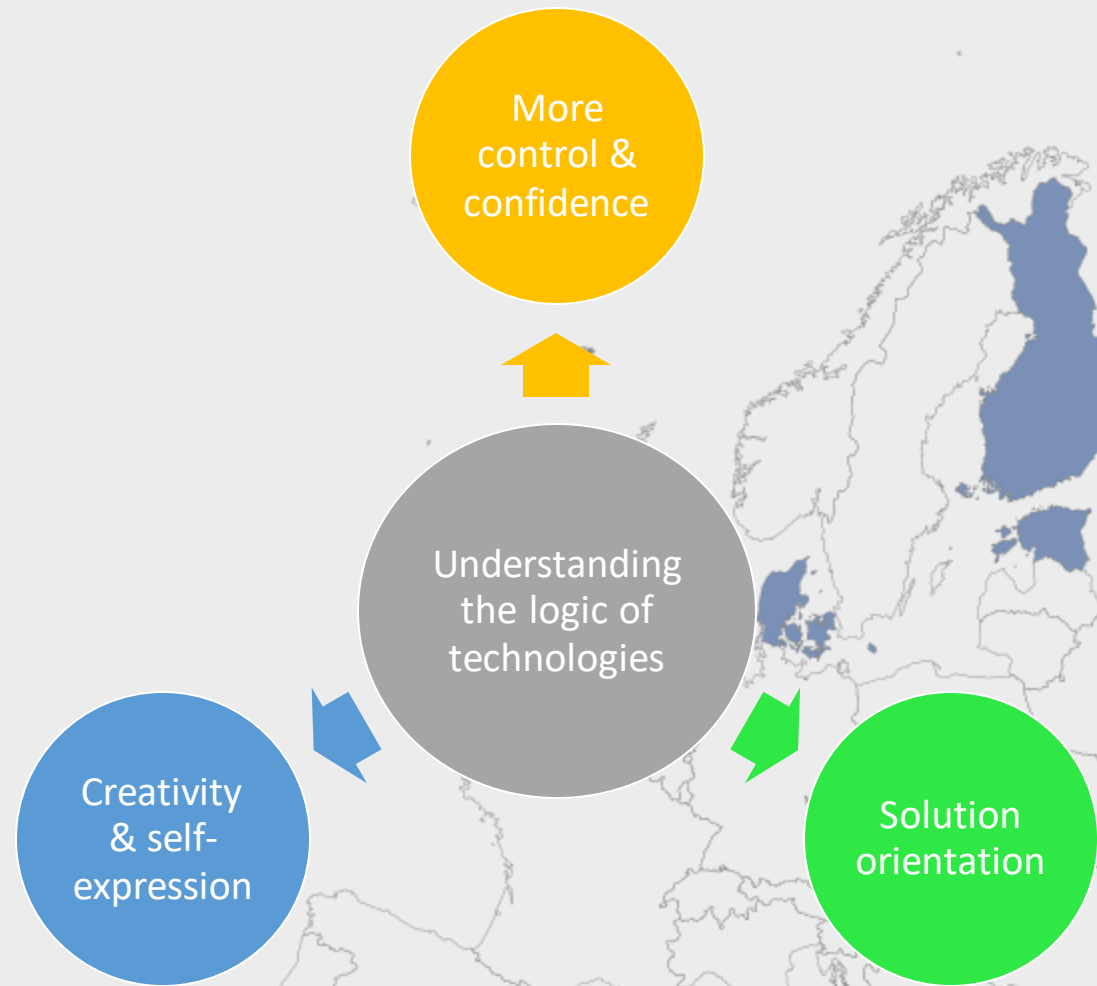
The main aim of this project is to make 90 learners from Finland, Denmark and Estonia to understand what is behind technologies. By understanding the logic of technologies, it becomes also more controllable and makes us feel solution oriented instead of feeling scared or only confused.

How?

- 90 learners from Finland Denmark and Estonia

- Blended learning course:
  "Robotics Beyond Borders"
  - eLearning
  - Learning by doing
  - International project week

- Arduino platform (Mehackit Maker Kit)
  - Support wide variety of components
  - OpenSource
  - Powerful and fun way for self-expression

Objectives

Robotics beyond borders -blended learning (eLearning & workshop) course will be created (2 competence points/1 course in upper secondary school)

Students will understand what is happening behind the technologies by learning technological problem-solving skills and improve significantly life-learning skills

90 students from Finland, Estonia and Denmark will finish the *Robotics beyond borders* – blended learning course

Students will learn international skills by working with colleague students from Finland, Estonia and Denmark

Course fits to course selection of vocational colleges and upper secondary schools (schools decide beforehand where the course fits. E.g. MERCURIA -> Optional targeted learning outcome Working in digital environment 2 cp)

Course contents

Initial part

Guided studying in students home country.

Course on eKampus eLearning platform:

- Basics of electronics.
- Basic concepts of programming.
- Exercises with the Maker Kit (individual / group).
- Exploring and learning to use the parts in the Maker Kit and coming up with possible ideas for the project.

How to add perspective for Business / your schools' field?

Guidance

- Course teacher in students own school
- Video meetings on eKampus
- Forum on eKampus

Workshop week:

- Sun - Travelling
- Mon - Orientation, getting to know each other, planning the project for the week
- Tue-Thu - Building the projects, company visits
- Fri - Finalising the project, presentation and estimation of business opportunies of the project. Course ends.
- Sat - Returning back home
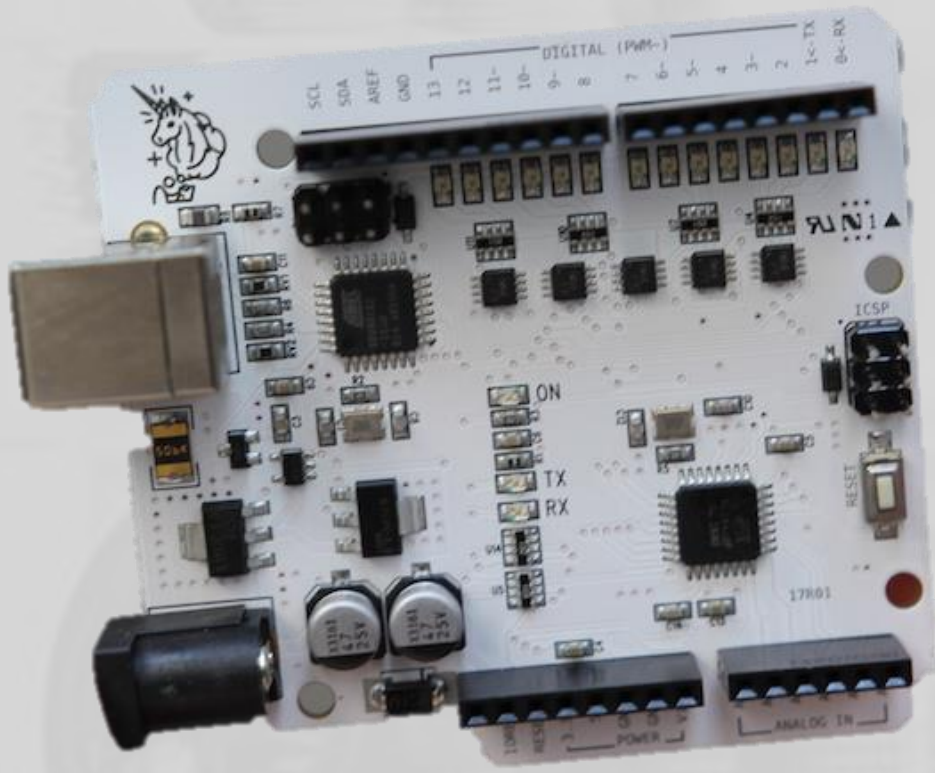
Learning kit for the course:
Mehackit Maker Kit

https://mehackit.org/products/maker-kit

- Arduino based
    - Open-source programmable single-board microcontroller
    - Interact with physical world via different sensors and outputs
    - can be used with wide variety of easily available components
    - powerful tool for diverse prototyping and fun way for self expression
- Essential components for learning the basics of creating and self expressing with microcontrollers.
    - Parts list: https://mehackit.org/list-of-components-maker-kit

Example projects

CHICKEN TOY HACK
BIBLO TOYEN, OSLO

https://www.youtube.com/watch?v=za1pOxD1pkY