

Turku 20.09.2023

# UBC Education Conference





## KEYNOTE SPEAKERS AND PANELISTS

**ANU PARANTAINEN**, DIRECTOR, CITY OF TURKU  
(FACILITATOR)

**ERNO HYVÖNEN**, PROJECT COORDINATOR, MINISTRY  
OF EDUCATION AND CULTURE OF FINLAND (BASIC  
SKILLS)

**ANDERS BERGSTRÖM**, POLICY AREA COORDINATOR,  
EUSBSR PA: EDUCATION (NEETS AND ONE STOP  
SHOPS)

**ILONA DONIŅA**, HEAD OF INTERNATIONAL AND  
INVESTMENT PROJECTS DIVISION IN EDUCATION,  
CULTURE AND SPORTS DEPARTMENT, RIGA CITY  
COUNCIL (EARLY SCHOOL LEAVING)

**LAURA KEPPLINGER**, TEAMLEAD EDUCATIONAL  
POLITICS, ARBIETERKAMMER OÖ (EARLY SCHOOL  
LEAVING)

# Basic skills and lack of vocational qualifications – how to produce them in a formal system?

Erno Hyvönen

Ministry of Education and Culture, Finland

[erno.hyvonen@gov.fi](mailto:erno.hyvonen@gov.fi)

Taulukko 1. 25–34-vuotiaiden työllisyysaste sukupuolen ja koulutustason mukaan (2015 ja 2022)

Employment rate of 25-34 olds by gender and level of education (2015 and 2022)

Miehet=Men Naiset=Women		Perusaste		Without upper secondary		Toinen aste		Upper secondary		Korkea-aste		Tertiary	
		Miehet		Naiset		Miehet		Naiset		Miehet		Naiset	
		2015	2022	2015	2022	2015	2022	2015	2022	2015	2022	2015	2022
Finland	Suomi	61	55	40	41	81	80	66	72	88	92	76	86
Sweden	Ruotsi	75	75	53	52	87	85	79	77	88	91	86	86
OECD-average	OECD-keskiarvo	70	71	44	47	84	85	66	70	88	90	79	84
EU25-average	EU25-keskiarvo	65	68	44	46	83	86	68	73	87	90	79	85

Lähde: Education at a Glance 2023, Table A3.9. Trends in employment rates of 25–34-year-olds, by educational attainment, programme, orientation, and gender (2015 and 2022)



"Autorata"



"Jeesusteippi"

# European Social Fund project "Support for Reducing Early School Dropouts"

10/2017 – 12/2023



**25,560** individual support plans  
More than **1400** teachers provided support  
for students

  
PuMPuRS

## RISKS



€ 8 170 411  
ESF 7 481 411 (91,5%)  
City 689 000 (8,5%)



1. Individual support for students
2. Strengthening and improving skills of teachers
3. Empowerment of youth NGO

# Support measures of municipality

## Challenges



## Actions



# Early school leaving prevention system and implementation plan 2024-2028

## JUSTIFICATION

TO ENSURE SUSTAINABILITY OF THE PROJECT

## CURRENT SITUATION

TO PROMOTE IMPROVEMENT OF EDUCATIONAL PERFORMANCE AND SUSTAINABLE GROWTH



## PREVENTION SYSTEM

- MODEL OF INTER-INSTITUTIONAL COOPERATION
- STRATEGIC GOALS

## IMPLEMENTATION PLAN

- ACTIVITIES AND TASKS
- RESOURCES
- MONITORING AND METHODOLOGY OF ANALYSIS





**Thank you!**

**Ilona Donina**

**Head of International and Investment Projects Division**

**Education, Culture and Sports Department**

**Riga City Council**

**Contacts: [ilona.donina@riga.lv](mailto:ilona.donina@riga.lv), +371 6703 7912**

# Early School Leaving in Austria: Dynamics and policy impulses

**Laura Kepplinger**

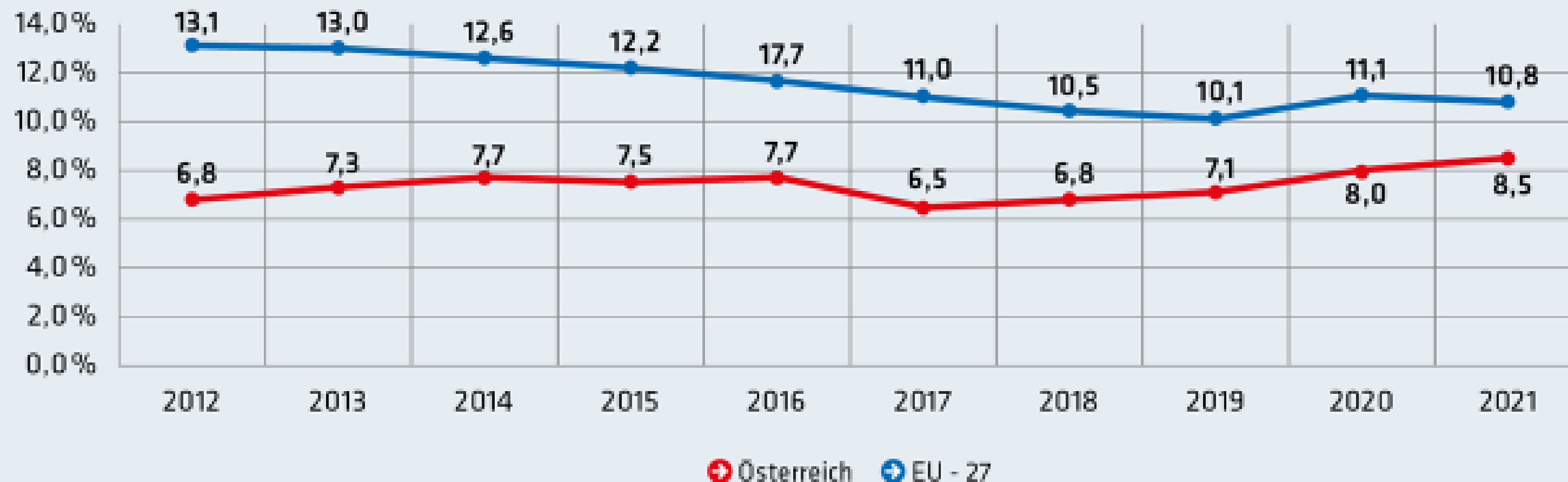
20.09.2023, Turku



# Too many young adults leave the Austrian education system too early and don't return

- Exemplary: Austria is moving against the EU-wide trend in terms of young adults falling into the „NEET“-definition

NEET JUGENDLICHE 15 BIS 24 JAHRE (IN PROZENT)



Quelle: Eurostat, Young people neither in employment nor in education and training (NEET rates), eigene Darstellung

# Policy impulses to prevent early school leaving

- **#1: Abolish Early Streaming:** Austria's school system streams as early as age 10, then again at age 15 and finally age 18. This is too early, too much and counterproductive.
- **#2: Define schools as agents of social inclusion and as social space:** Make schools a hub of social integration, (multi-)language development, where multi-professional teams of social workers, teachers, job coaches, ... work with students at eye level. (Attitude change!)
- **#3: Improve quality of vocational training as well as vocational orientation.**
- **#4: Preventative measures need to be seen as long term investment with long term goals.**

# Kontakt

Dr. Laura Kepplinger

Teamlead Educational Policies

Chamber of Labour Upper Austria (AKOÖ)

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# Workshops

10:45-12:00



## NEETs and One-Stop-Shop

Anders Bergström  
(Prikka)

## Basic skills

Erno Hyvönen  
(IT-palvelut Kupittaa 3)

## Early school leaving

Ilona Doninan  
Martin Mahringer  
(Piletti)

## School attendance problems

Tarumaija Aalto  
Teea Laiho  
(Tuuki)

## School segregation

Emil Kusnetsoff  
(Auditorium President)

## Mental Health

Ville Hakala  
(Kippo)

# NEETS AND ONE-STOP-SHOP

Anders Bergström





EUSBSR  
EU STRATEGY  
FOR THE BALTIC  
SEA REGION

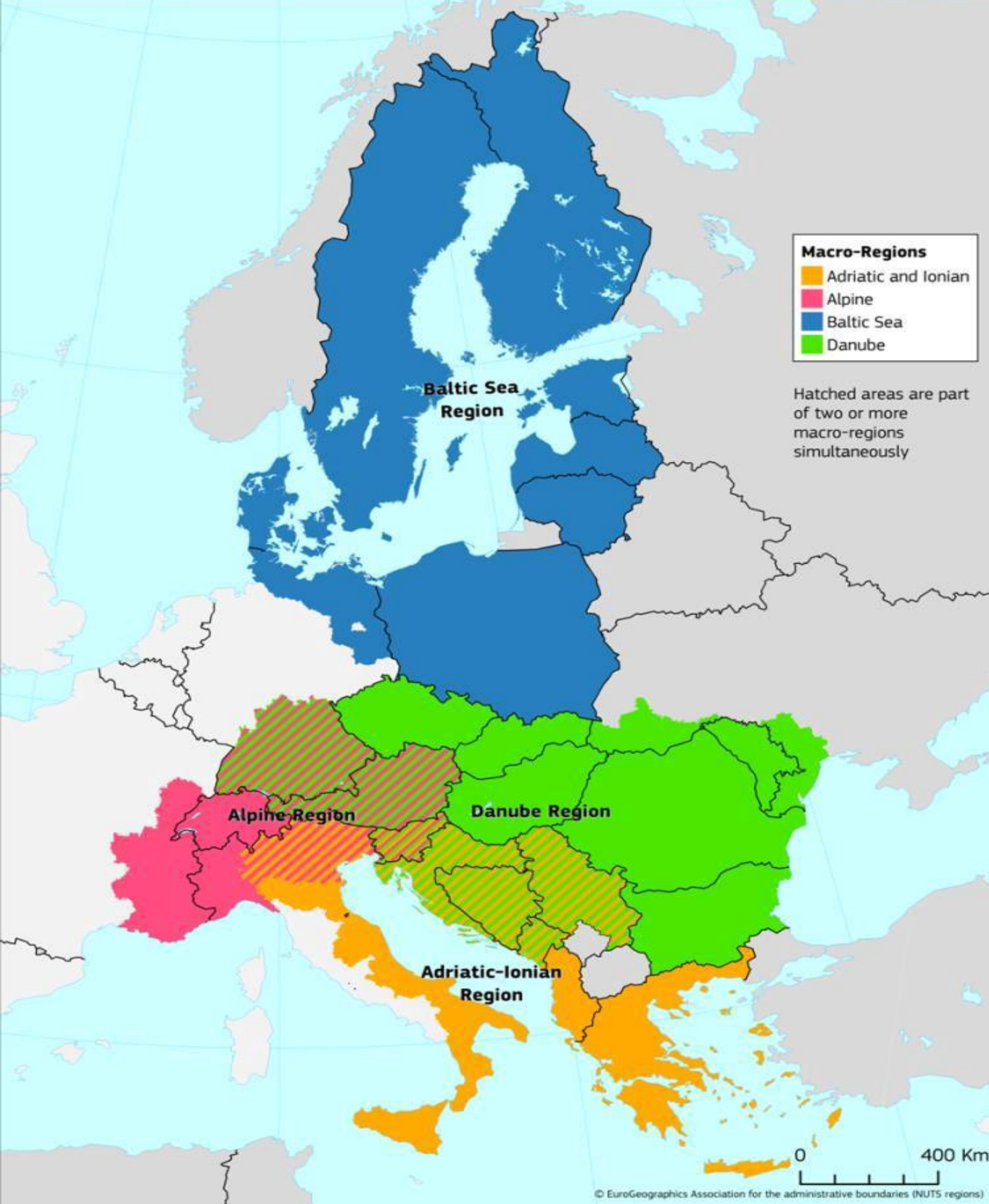


# Common challenges and opportunities

macro-regional strategies offer strategic frameworks







#### 4 MAKROREGIONALA STRATEGIER

- EU Strategy for the Baltic Sea Region 2009
- EU Strategy for the Danube Region 2010
- EU Strategy for the Adriatic-Ionian Region 2014
- EU Strategy for the Alpine Region 2015

## WHY are macro-regional strategies needed?

- **Complex societal challenges** call for impactful responses
- **Resources need to be pulled together** cross-sectorial, multilevel and transnational
  - ➔ we need to make **better use of our membership in the European Union**
- **Long term** collaboration needed in order to tackle complex societal challenges
- **Moving targets and goals** – new dynamic, calls for agility
- **Need to engage stakeholders** who can contribute and who can bring about change
  - ➔ call for **larger implementation formats** than single projects
- **Co-creative action formats** – collaborative platforms, learning in-action, networks

**And HOW are they implemented?**



**EUSBSR**  
EU STRATEGY  
FOR THE BALTIC  
SEA REGION



# Implementation of the EUSBSR

- ✓ 3 main objectives
- ✓ 14 interconnected Policy Areas



**EUSBSR**  
EU STRATEGY  
FOR THE BALTIC  
SEA REGION



## Policy Area Education, Science and Social affairs

4 Policy Areas in one education, science, employability and integration

### 2 Policy Area Coordinators

Hamburg (Senate Chancellery) together with Norden Association Sweden

### 4 Actions out of 43 in total in EUSBSR

1. Preventing early school leaving and improving transition from school to work  
**1 flagship: School to Work**
2. International excellence and wider participation in science and research  
**2 flagships: Baltic Science Network and Baltic University Programme**
3. A labour market for all, using resources of longer lives  
**1 flagship: Baltic Sea Labour Forum**
4. Recognising potential – easing the way for migrants



# School to work

A flagship within the Baltic Sea Strategy

# ORGANISATION



## Coordinating Group

- SALAR (SE)
- Norden Association (SE)
- City of Turku (FIN)

## FLAGSHIP SCHOOL TO WORK

Leader of the Flagship

Swedish Association of Local Authorities and  
Regions (SALAR)

## Advisory Board

- All 8 Member States
- National level
- Mandate

## EDUCATION & TRAINING

EARLY SCHOOL  
LEAVING

INTEGRATE  
NEETs



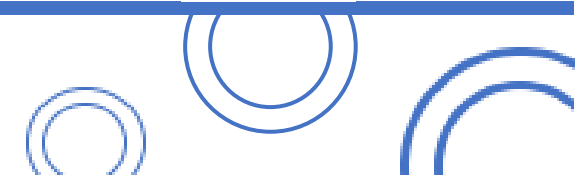


# MEMBERSHIP AND MORE

As a member of School to Work you get

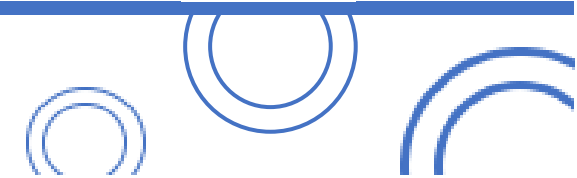
- A platform for transnational work
- Invitations to conferences and study visits
- Arenas for contribution to policy making in the Baltic Sea Region and EU at large
- Contact with projects and practitioners
- A platform to share your projects and other development ideas and good practices

Welcome to join as member [www.s2wflagship.eu/join-us/](http://www.s2wflagship.eu/join-us/)



# COORDINATOR TRAINING PROGRAMME

- Developed in 2021 on the basis of a competence profile made in the project.
- The competence profile is informed by the experiences and priorities of the participating countries/organisations.
- The competence profile tested in the partner countries.
- Modules developed with learning goals



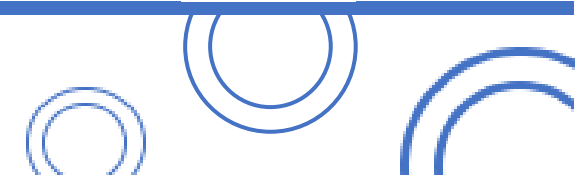
# COORDINATOR TRAINING PROGRAMME - OVERVIEW AND SCHEDULE

Module 1: Building one-stop guidance centers

Module 2: Delivering the services in a client-centred way

Module 3: Managing, coordinating and developing multidisciplinary services and teams

Module 4: Creating and developing sustainable networks



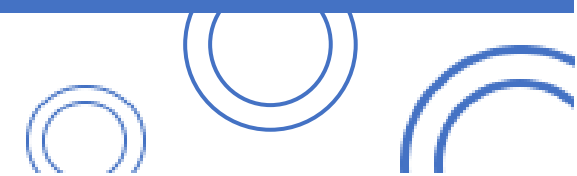
# MODULE 1: BUILDING YOUTH GUIDANCE CENTRES

This is an orientating module for all the forthcoming modules. The module offers a general overview to nation specific and common features of Youth Guidance Centres.

## **This module focuses on**

- the concept of Youth Guidance Centres and the needs of the target group
- existing support structures and the services they provide to the target group including legal acts behind the services
- building an accessible guidance centre with targeted services and actions

5 ECTS credits



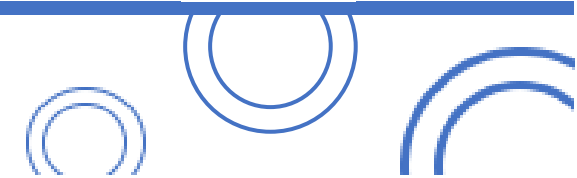
# MODULE 2: DELIVERING THE SERVICES IN A CLIENT- CENTRED WAY

The aim of the module is to support participants to deliver the services in a client centred way to enhance the client's agency and integrity.

## **This module focuses on**

- supporting the team to deliver the client-centred services
- the ethical aspects when working with the clients
- presenting labour market information (LMI) and future trends of the world of work and careers
- raising awareness of guidance centres among clients and developing and coordinating marketing

3 ECTS credits



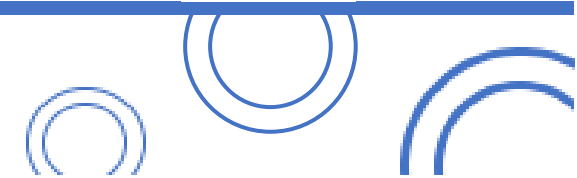
# MODULE 3: MANAGING, COORDINATING AND DEVELOPING MULTIDISCIPLINARY SERVICES AND TEAMS

The module concentrates on multidisciplinary services and multi-professional work in Youth Guidance Centres. Especially the focus is on the role of the coordinator.

## **This module focuses on**

- managing and supporting multi-disciplinary services, teams and multi-disciplinary collaboration
- planning, supporting and carrying out multi-stakeholder dialogues; internally with staff and partners, externally with young people, decision-makers and civil society
- indicator set for the services and actions and how to operationalise, monitor, document and evaluate them and their meaning

4 ECTS credits



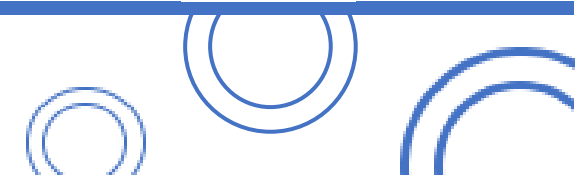
# MODULE 4: CREATING AND DEVELOPING SUSTAINABLE NETWORKS

The module discusses the position of Youth Guidance Centres in relation to other service providers. The aim is also to strengthen coordinator's understanding of the significance of the background organisations in Youth Guidance Centres operations.

## **This module focuses on**

- building effective partnerships (competence, relevance) with the help of local, regional and national support structures
- raising awareness and communicate the added-value of guidance centres among background organisations and partner organisations
- strengthening background organisations' commitment to develop and fund services and actions of guidance centres

3 ECTS credits






**EUSBSR**  
EU STRATEGY  
FOR THE BALTIC  
SEA REGION



[Thank you for your attention!](#)

Kontakta gärna Anders Bergström, [anders@norden.se](mailto:anders@norden.se) för mer information 



# *UBC- Union of the Baltic Cities*

## *20.9.2023*

***Education conference***

***School Attendance Problems Workshop***

***[tarumaija.aalto@turku.fi](mailto:tarumaija.aalto@turku.fi)***

***[teea.laiho@naantali.fi](mailto:teea.laiho@naantali.fi)***





The main goal is to establish a culture within the school that promotes attendance and prevents non-attendance

*The Golden Teacher*


*” One of the most important succes factors in school is that student have a good realtionship with their teacher. A good relationship goes much deeper than the teacher being funny or striving to be nice. A good realtionship also requires that the teacher is perceived as safe as whole- for everyone.”*

*” Togetherness is necessary to build g good realtionship between a teacher and student and among students”*

*Source: Expert fråm Håward Trojas Text in Dagbladet Magasinet, **Malin Gren-Landell** Statped*



## The situation on Finnish schools- The Basic education Act, 26§

- Due to operation SKY the basic education act was reformed in August 2023
  - "The organizer of the education **must prevent** the absences of the student participating in basic education **and monitor and intervene in a planned manner.** The organizer of the education must report unauthorized absences to the student's guardian or other legal representative"
- 

# Every non-attendance matters

- **All non-attendance counts- the school is an important arena for development, both socially and academically, hence school absenteeism can hamper the acquisition of crucial competencies, such as reading skills and socio-emotional competence.**
- **10% non-attendance is risk factor for learning and well-being. Signs of attention-demanding absenteeism parameters**
  1. **Four or more absence periods during the last month**
  2. **10% unexcused absence during the last month**
  3. **Eleven or more periods of absence during the last school year**
  4. **More than 10% absence during the last school year**
- **School attendance problems can be attributed to various themes and concepts.**

# Communal student welfare in Finland

- The students have a right to welfare. Student welfare primarily consists of preventive activities and communal student welfare work that supports the entire school community.
- *Communal student welfare* work aims to promote the learning, well-being, health, social responsibility, interaction and participation of all students, as well as the wholesomeness, safety and accessibility of the learning environment. A school culture that strengthens the sense of community reconnects young people with school

[Problematic School Absenteeism \(statped.no\)](https://statped.no)





# Individual student welfare in Finland

- Addressing school attendance problems often requires a multi-faceted approach that includes school, families, student and multi-professional team of experts
- *Individual student welfare* consists of school health services, a school social worker and psychology services
- Multi-professional team of experts is established if the need arises to clarify and identify root causes of an individual student's non-attendance. Team will organise services and support for student: this may involve counseling, medical care, academic assistance, and creating a more inclusive and supportive school environment.

[Problematic School Absenteeism \(statped.no\)](https://www.statped.no)

## We need databased information management to support students and families

- Gathering and analyzing data from electronic databases on attendance patterns is essential for understanding the scope of the problem and evaluating the effectiveness of interventions.
- Information management on different levels:
  - 1. Municipal level student welfare steering committee:** cultural director in municipal-level
  - 2. School level:** principal and communal student welfare
  - 3. Teachers level:** everyday information management

# Poissaolot, nykyinen lukuvuosi

6545

Poissaolo kpl

3

Poissaolot/oppilas

1 967

Oppilaat kpl

## poissaolotyyppi

- (Poissa) Anottu vapaa
- (Poissa) Luvaton poissa...
- (Poissa) Muu selvitetty ...
- (Poissa) Selvittämätön p...
- (Poissa) Terveydelliset s...

## tuki

- Erityinen tuki
- Tehostettu tuki
- Yleinen tuki

## oppilaitostyyppi

- 123 alakoulu
- 124 yläkoulu

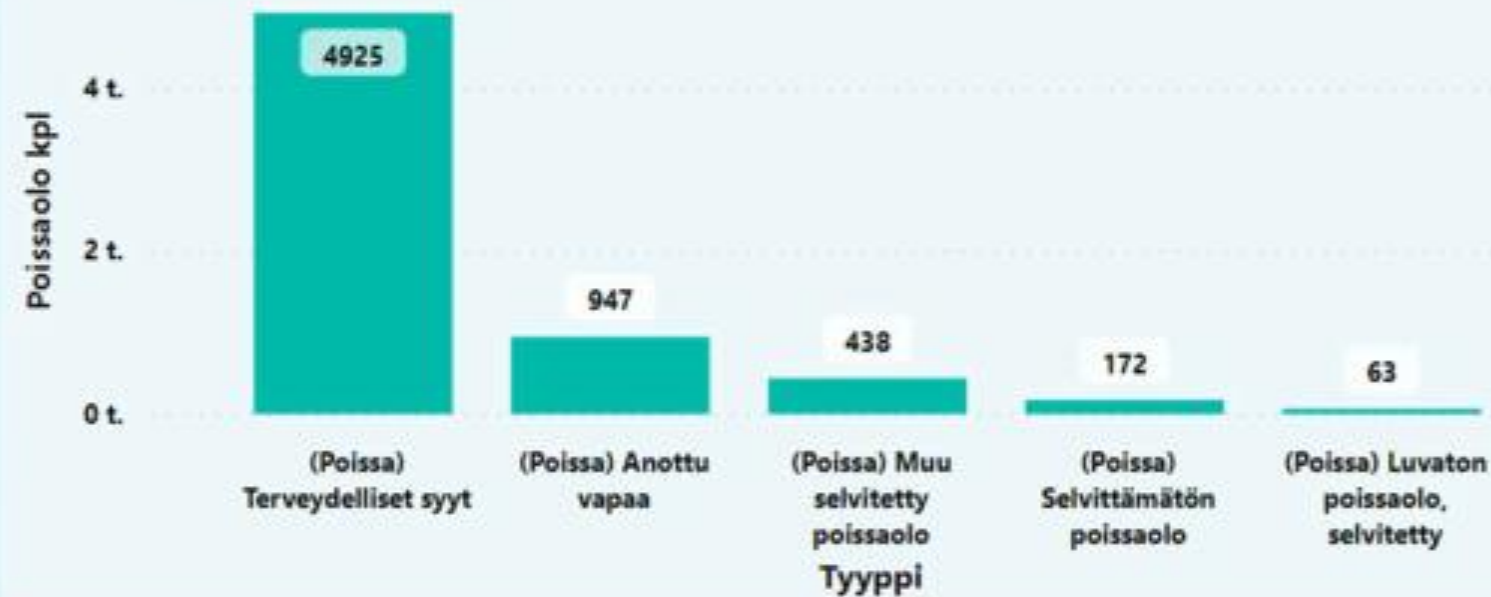
## luokka-aste

- 0
- 1
- 2
- 3
- 4
- 5

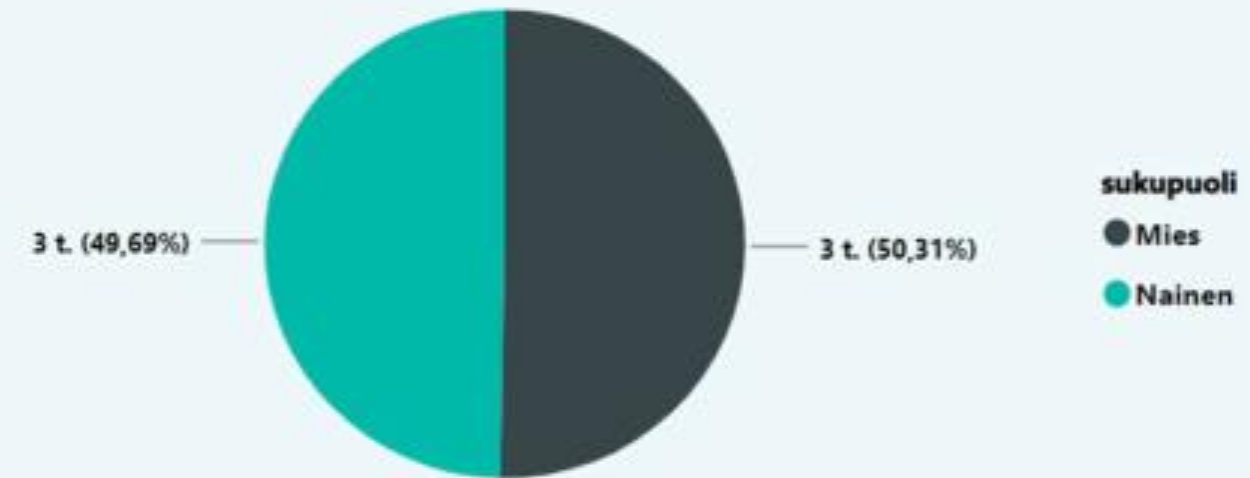
## koulu

- Karvetin koulu
- Kuparivuoren koulu
- Lietsalan koulu
- Luonnonmaan koulu
- MAIJAMÄEN KOULU
- Merimaskun koulu
- Rymättylän koulu
- SUOPELLON KOULU
- Taimon koulu
- Velkuan koulu

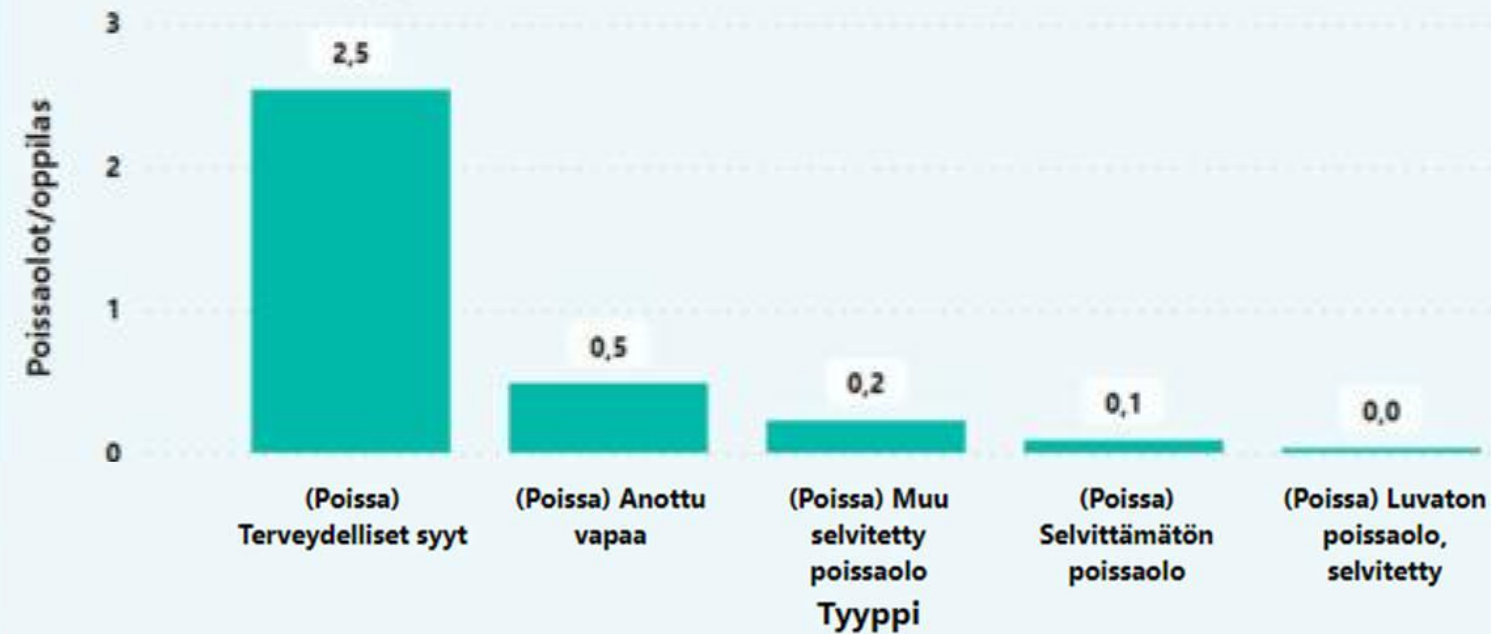
## Poissaolot yhteensä



## Poissaolojen määrä sukupuolittain




## Poissaolot/oppilas



## Poissaolot/oppilas luokka-asteittain







## School level- why?

- By monitoring non-attendance, it is possible to identify phenomena at both the individual and group levels that may predict an increase in absences or provide protection against them.
- By monitoring non-attendance rates, it is possible to identify effective and ineffective interventions aimed at addressing the reasons for absences at both the individual and group levels.
- Classified non-attendance data can be utilized as part of the well-being efforts in schools.

Malin Gren-Landell



# School level

- School attendance is regularly monitored as part of communal student welfare group.
- Databased information management and communal student welfare complement each other.
- Absences are examined at both the school, classroom and grade levels.

# Teacher level

Teacher has to observe non-attendance systematically and register the data in electronic databases. In addition to tracking non-attendance, other factors related to well-being and learning are monitored like:

- ✓ ***Tardiness (Early Signs of Non-attendance)***
- ✓ ***Other Class Notations***
- ✓ ***Grade Progression***
- ✓ ***Recorded Support Measures and Learning Assistance***

Teacher contacts to student and family to conduct a situation assessment.



Syksy

# "Example Student's Absences

Tähän kuva Wilma-merkinnöistä + luokitus

Päivämäärä	8	9	10	11	12	13	14	15	Yhteensä	Huomioita
Ma	<a href="#">25.9.2023</a>		LT	LT	LT				3	
To	<a href="#">21.9.2023</a>		LT	LT	LT	LT	LT	LT	6	
Ke	<a href="#">20.9.2023</a>	LT	LT	LT	LT	LT	LT	LT <sup>1</sup>	0	1: POL 36\$ /LT
Ma	<a href="#">18.9.2023</a>		LT						1	
Pe	<a href="#">15.9.2023</a>						LT <sup>1</sup>		1	1: Muu selvitetty poissaolo: äkillinen perhetilanne /LT
Ma	<a href="#">11.9.2023</a>		LT						1	
Ma	<a href="#">21.8.2023</a>	LT	LT						2	
To	<a href="#">17.8.2023</a>	LT	LT						2	
Ma	<a href="#">14.8.2023</a>	LT	LT	LT	LT	LT	LT	LT	7	
La	<a href="#">12.8.2023</a>	LT	LT	LT	LT	LT	LT	LT <sup>1</sup>	7	1: Oppilas kilpailumatkalla Ruotsissa. /LT
<b>Yhteensä</b>									<b>30</b>	

[Näytä luokan tuntimerkinnät vastaavalta ajalta](#)



# Thank you- kiitos!

Teachers play a pivotal role in noticing changes in a student's school attendance. Positive interaction and everyday encounters are the beginning of functional relationships at school. Furthermore, we need high-quality information related to student well-being.

Let's take care of our students!

[teea.laiho@naantali.fi](mailto:teea.laiho@naantali.fi) & [tarumaija.aalto@turku.fi](mailto:tarumaija.aalto@turku.fi)

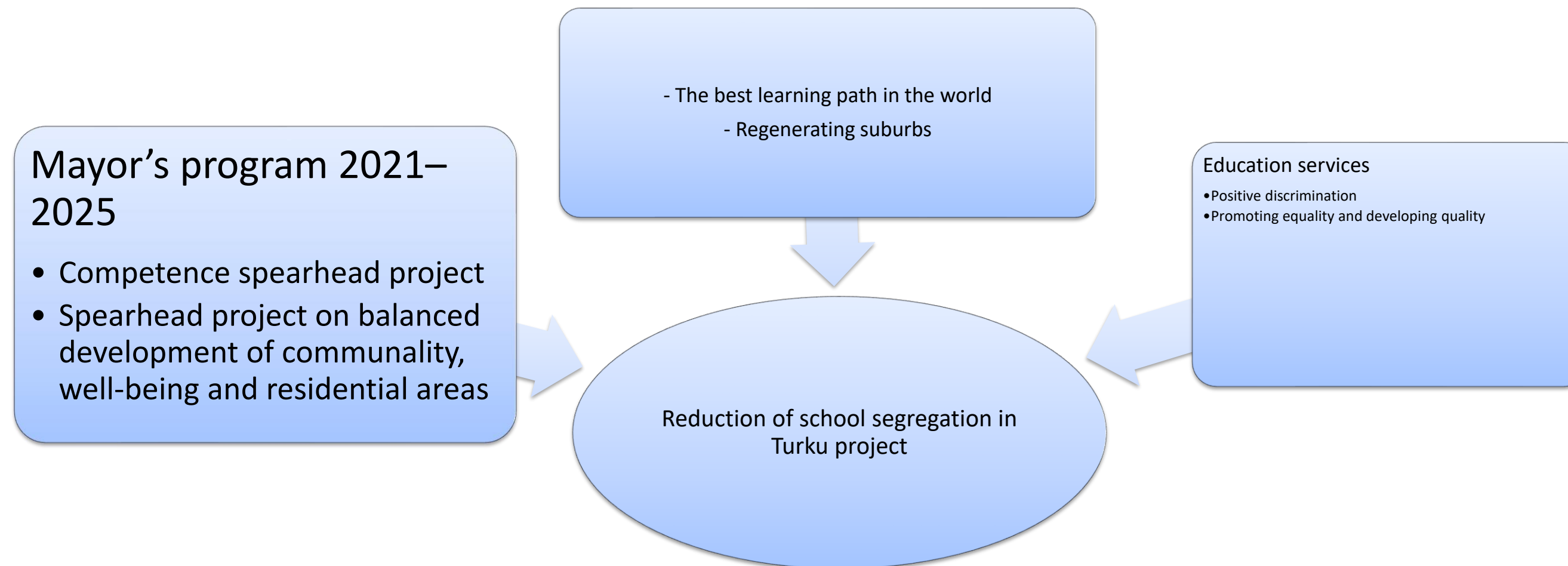
# SCHOOL SEGREGATION

Emil Kusnetsoff

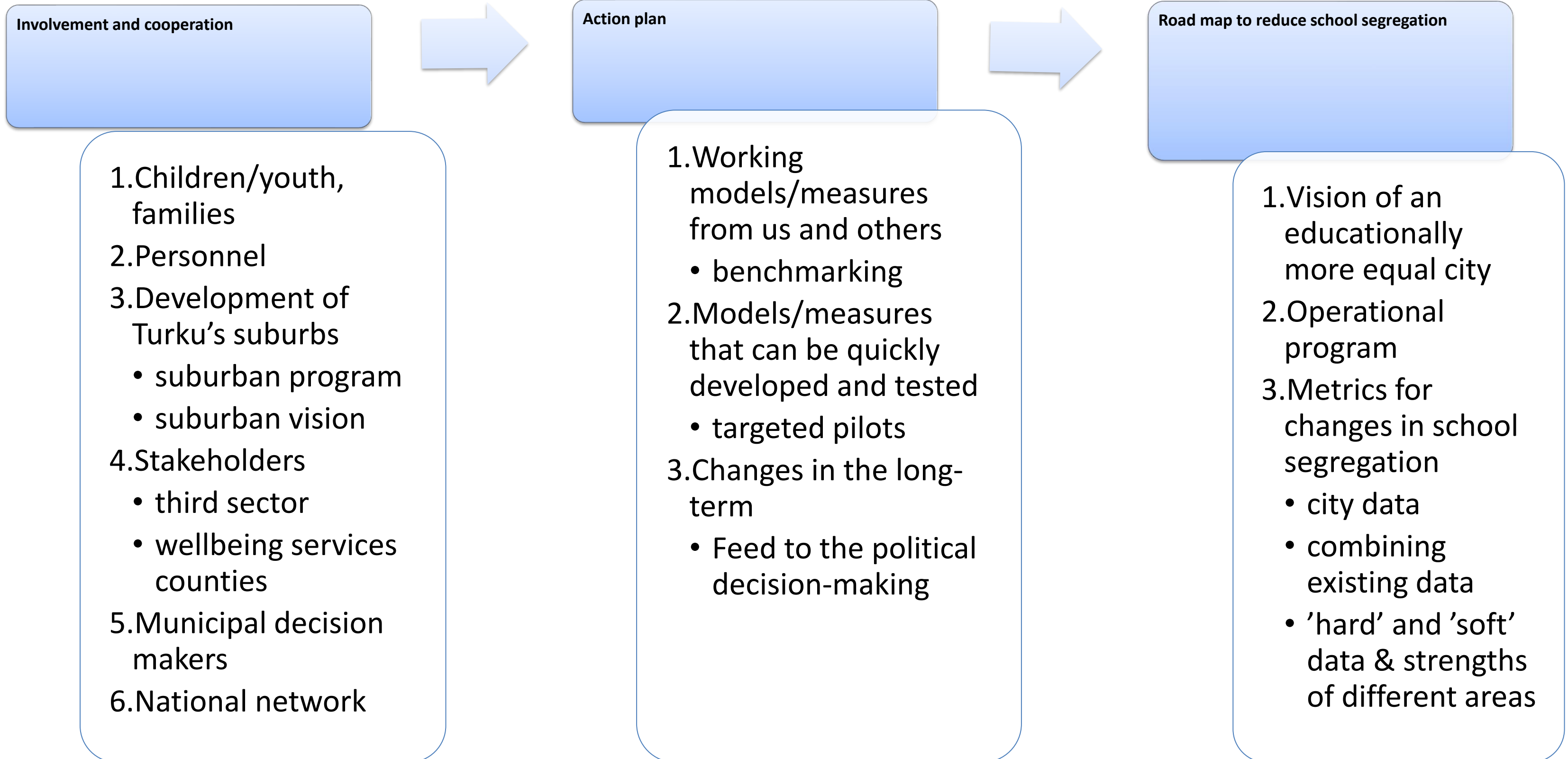


# Baseline in Turku

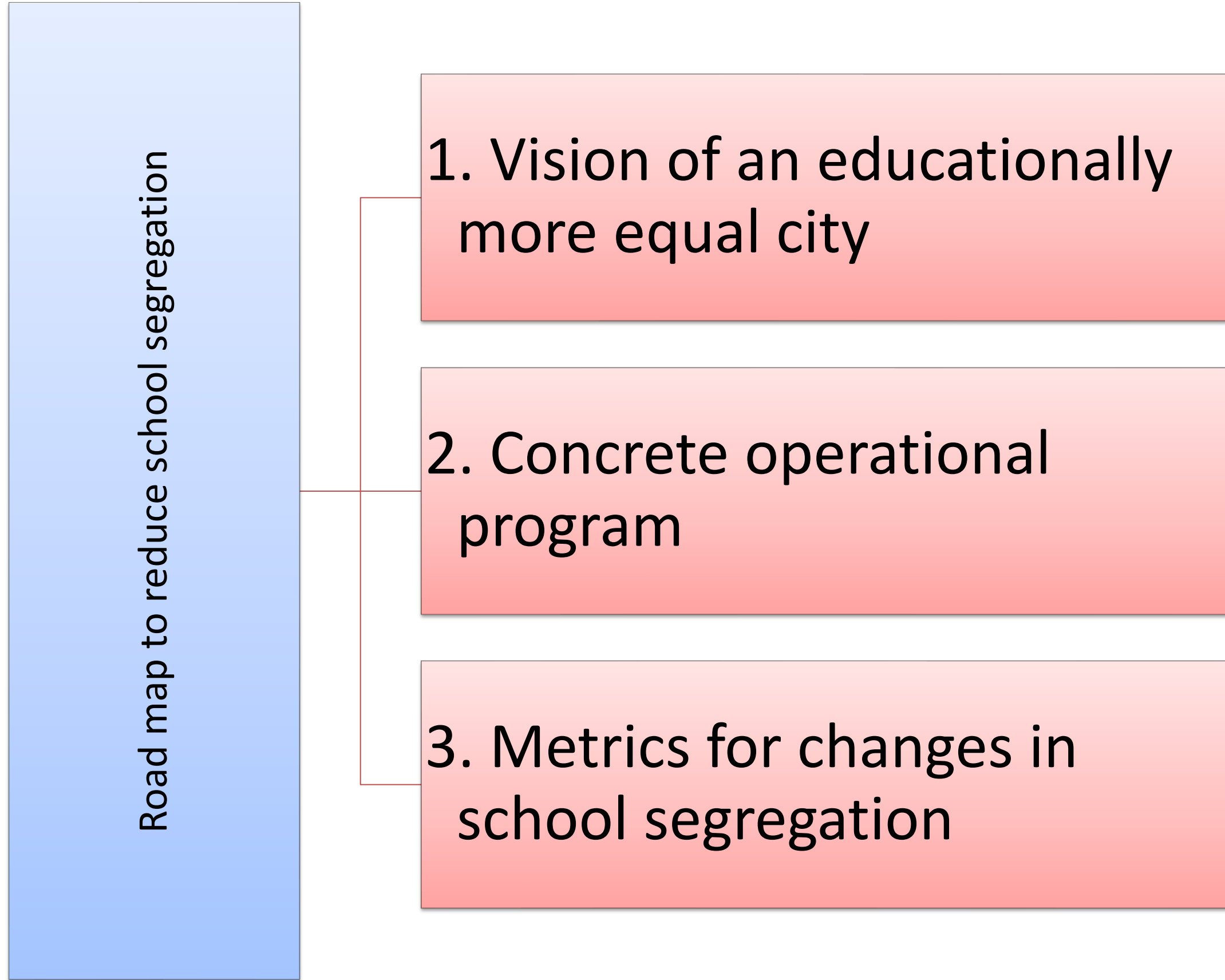
- School segregation: segregation of socio-economic and ethnic backgrounds of school pupils and their learning outcomes. (Bernelius & Huilla)
- Significant ethnic segregation (18,2 %) that is linked with spatial segregation.
- Spatial segregation: the increase in socio-economic and ethnic disparities between areas in a way that is linked to growing disparities in well-being between these areas.



# Project implementation







- The project results in a **road map for reducing school segregation** in the city of Turku. It brings together **measures** already in place, measures adopted from other municipalities, and new measures created by the project to reduce/prevent school segregation. The road map contains a **set of indicators** on the basis of which the effectiveness of anti-segregation work can be measured, for example, with the help of city data produced by the city of Turku's information services. The project is funded by the Ministry of Education and Culture and the city of Turku. The project concentrates on pupils in basic comprehensive education (and early childhood education) and lasts until the end of 2023. A continuation for the project has been funded until the end of 2025.
- We want to address the development of inequality and strengthen **the local school principle**. Special attention is directed to schools in areas with high unemployment and low levels of education. **The internal segregation of schools** must neither be forgotten.
- The task of the project is to **promote favorable long-term development** and find new solutions by gathering the needs of local residents and involving them in the ideation work.
- The risk of **stigmatizing schools and areas** is taken into account in all respects when talking about transparency.



# Recent Finnish research

- [Prisoners of fame? The connection of urban schools' reputations to neighborhoods as a risk of segregation and an opportunity for development](#) (Venla Bernelius and Heidi Huilla):
- "our findings emphasize the great importance of **taking reputation into account** and supporting the positive reputation of schools in the city's development work." Solutions: "strong and conscious utilization of the residential area and its networks in the school's work, as well as the **school's versatile integration into the neighborhood.**" and "the experience of safety enabled by urban planning in children's and young people's everyday life and on its school routes."
- ['Notorious Schools' in 'Notorious Places'? Exploring the Connectedness of Urban and Educational Segregation](#)
- [Local educational ethos –research group](#): *School and inequality policy brief*
- From the point of view of socio-economic differences, the most central administrative function of the school is **the grouping of students**, which can be used to influence the realization of the idea of a common school and structures that discriminate.
- **Schools can:**
  - Make use of thoughtful grouping practices.
  - Promote grouping within or between different teaching groups.



## Recent Finnish research

- . Inform about emphasized teaching (special educational lines) in several languages.
- . Provide more training for all school personnel on dealing with a wide variety of students.
- . Discuss among adults how social differences affect students' everyday life and create differences in teaching situations as well as in other school spaces and during free time.
- . Introduce students to different areas and hobby opportunities.
- . Nurture open interaction between teachers and students and teaching that gives space for students to reflect and ask questions, which supports learning and belonging.
- . Consciously support and nurture the goal-oriented schooling of all students: in the project, the young people of all teaching groups themselves said that they have a goal-oriented approach to schooling.
- . Address racism consciously and openly.
- . Invest in cooperation between schools and home: the school plays a significant role in inspiring families to support their children's schoolwork. Parents from different backgrounds are also a significant resource for the building of a community among school children.
- . Take into account in the planning of everyday school life that the consequences of social segregation affect some young people more strongly than others. For example, encountering poverty, externality and racism does not affect all young people in the same way.



## Recent Finnish research

- [Competence in mathematics and mother tongue and literature at the start of third grade – A longitudinal assessment of learning outcomes in basic education 2018–2020](#) (Finnish Education Evaluation Centre)
- **The competence levels of pupils studying Finnish or Swedish as a second language (L2) were notably lower than the rest.** The numbers of pupils studying L2 were also reflected in regional results. The effect was most pronounced in Southern Finland and Southwestern Finland and in urban municipalities.
- **Differences in competence were high between individuals, but low between the sexes,** with sex only accounting for half a per cent of the total score. Girls scored slightly higher than boys overall and were better at the mother tongue exercises than boys. In mathematics, girls and boys demonstrated equal levels of skill.
- Regardless of their starting level, **all pupils had developed over the two years.** However, **competence had developed most among pupils whose level of competence was the highest at the beginning of grade 1.**
- **Reading as a pastime was the only hobby clearly linked with the pupil's competence.** Reading as a pastime was linked with skills in both mother tongue and mathematics. Pupils who read on a daily basis gained a head start of more than a year in their overall competence when compared to those reading less than once a week. **The number of instructor-led hobbies was also linked with competence and its development.**



# Positive discrimination – Combating educational inequality

- Positive discrimination -> needs-based resource allocation
- **More monitoring** on its effectiveness is needed.
- **In Turku, the following criteria** are used to distribute **the positive discrimination funding** targeted at primary schools (school-specific and distributed to all schools): - The student speaks another language (other than Finnish, Swedish or Sámi) - [Special support](#) student integrated into mainstream education - A student with [intensified support](#)
- **In Helsinki, the following criteria** are used to distribute **the needs-based funding** targeted at primary schools from the beginning of school year 2023-24 (school specific): - Percentage of adults living in the same household as parents who have a higher university degree - The proportion of unemployed adults living in the same household as the student and in the role of a parent - The proportion of students in the school living in households belonging to the lowest income fifth - Share of students registered as foreign language students (other than Finnish, Swedish or Sámi) in the school
- **The Ministry of Education and Culture also grants annual (soon to be changed) funding to promote education equality.** The allocation criteria are educational background and unemployment, as well as the share of foreign language people of the population of the area. The funding is allocated based on postcode.



# Positive discrimination – Combating educational inequality

- Positive discrimination -> needs-based resource allocation
- **More monitoring** on its effectiveness is needed.
- **In Turku, the following criteria** are used to distribute **the positive discrimination funding** targeted at primary schools (school-specific and distributed to all schools): - The student speaks another language (other than Finnish, Swedish or Sámi) - [Special support](#) student integrated into mainstream education - A student with [intensified support](#)
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- **The Ministry of Education and Culture also grants annual (soon to be changed) funding to promote education equality.** The allocation criteria are educational background and unemployment, as well as the share of foreign language people of the population of the area. The funding is allocated based on postcode.



About

Project director,  
Spearhead project of Communal Turku  
City of Turku

**Ville Hakala**

[ville.hakala@turku.fi](mailto:ville.hakala@turku.fi)





How different actors  
work together for the  
wellbeing of young  
people.

Case Turku

Ville Hakala 20.9.2022

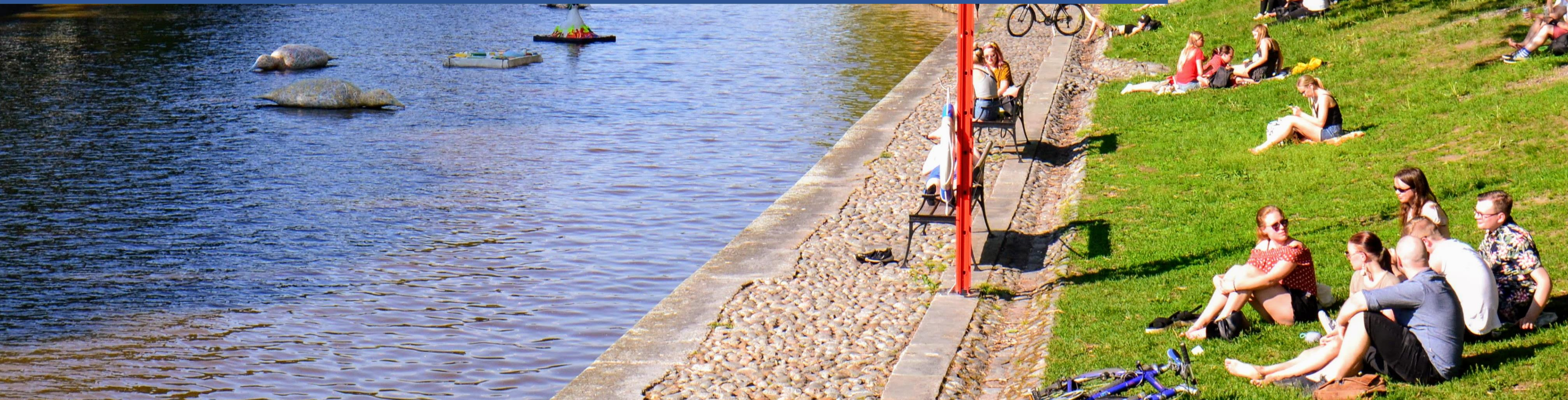


TURKU  
ÅBO



# Starting point

In the core of the project “Communal Turku” is the fact that complex and deeply intertwined phenomena are not solved by a singular perspective, but by a **group of procedures and tight co-operation**. Communality is created and phenomena are solved together with the city dwellers and all actors.



# Goals

- We implement action programs for reducing loneliness and supporting mental health.
- Developing measures to make city safer place for young people
- Giving all children opportunity to enjoy activities

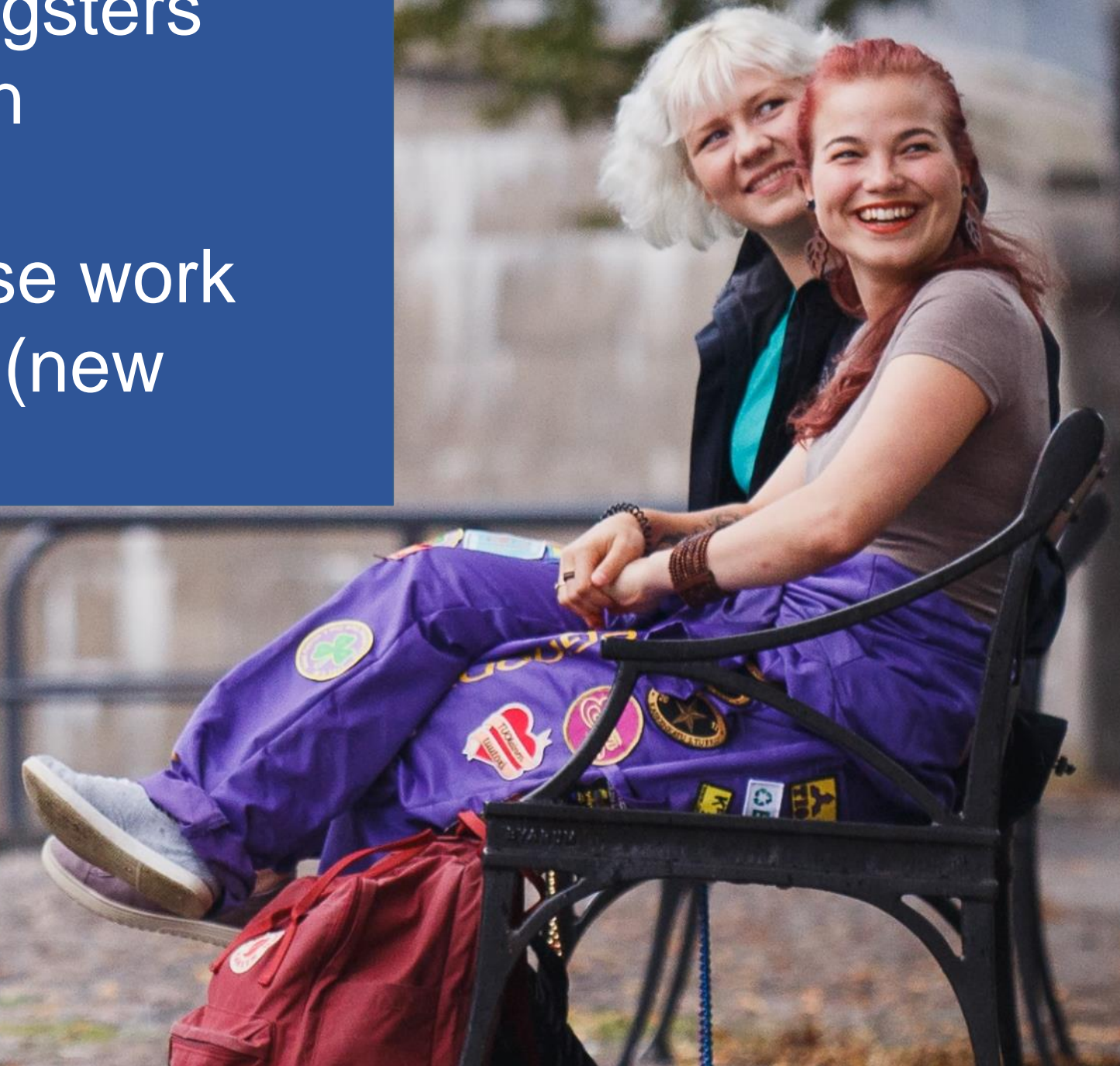
[Turku of Mayors – A Decade of Action](#)



Measures

## Mental well-being

- We train parents, organizations and school employees to consider the mental well-being of young people
- We organize mental well-being training for youngsters
- We tackle loneliness by involving young people in activities
- We pay attention to preventive substance abuse work and involve young people in planning programs (new project)

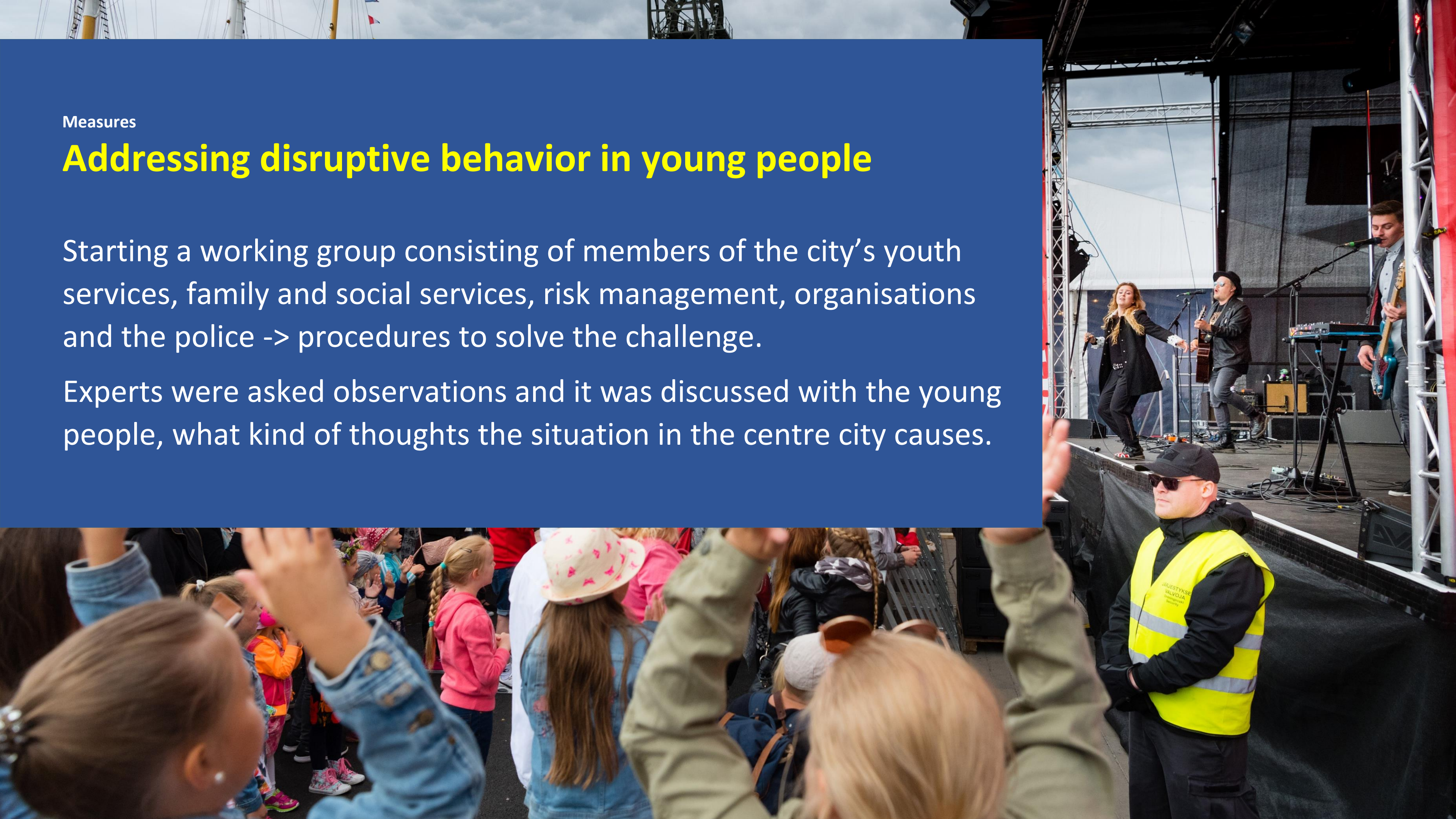


Measures

## Addressing disruptive behavior in young people

Starting a working group consisting of members of the city's youth services, family and social services, risk management, organisations and the police -> procedures to solve the challenge.

Experts were asked observations and it was discussed with the young people, what kind of thoughts the situation in the centre city causes.



The goal was to activate all the actors in the centre and residential areas to mutual observation, communication and if necessary, to action. Turku City improved safety with more than 70 measures (City safety plan)

- **Multi-professional teams took to the streets** and worked together with organisations and also with local entrepreneurs.
- **Young people were encountered** in the centre and concerning topics were discussed.
- The city started a **communications campaign** to reach the youth spending time at the city centre and make them participate. **The idea is to listen to the youth, not just tell them how to act.**



## Outcome

The youth has had positive experiences from the procedures.  
Young people were successfully redirected to different services.

**The City of Turku is now developing a model for encountering the youth based on the questionnaire and investing on increasing supervision and offering safe spaces.**

The situation is being followed continuously and the fast-changing situations are being responded by the working group.



## Conclusion

Including and participating multiple different actors to plan the activities demands **mutual aim**.

The work demands a lot of **coordination, analysis and phenomena-based examination**.

The **wellbeing of the youth concerns the whole community and demands targeted procedures**.





## Youngsters, employment and well-being

There are many services, organisations and actors on the field, but some factors make it difficult to get the help needed.

- Right timing is crucial
    - What service is right at the given moment?
    - For example: rehabilitating work action >< open psychiatric ward → some service in between
  - Language, words and concepts sound like hebrew
    - "The common man" doesn't necessarily understand what the official is talking about
    - Different actors can use slightly different names for same services
- Simple things are made to sound complex
- Jungle of the different forms that have to be filled
    - Where to find the right form, how to fill it, where and when and how to return it?
    - "Describe the worst possible day."
  - Waiting kills motivation
    - One needs motivation and energy to find the right service, cope with the language and survive the jungle
    - Long waitings and queueings can be the last straw to exhaust people

Thank you!





## **KEYNOTE SPEAKERS AND PANELISTS**

**ANU PARANTAINEN**, DIRECTOR, CITY OF TURKU  
(FACILITATOR)

**GUNNAR ANDERZON**, PROJECT MANAGER, FEDERATION  
OF SWEDISH MUNICIPALITIES AND REGIONS  
(NETWORKING: LEARNING AND SHARING)

**JAN WILKER**, PROJECT MANAGER, STARTNET/GOETHE-  
INSTITUT BRUSSELS  
(NETWORKING: LEARNING AND SHARING)

**PAULA VORNE**, PROJECT MANAGER, CITY OF OULU  
(STEAM)

**JĀNIS ERTS**, CEO, EMU (MENTAL HEALTH)



# OULU



Oulu is the European  
Capital of Culture in 2026



A major ICT hub:  
1 000 ICT companies,  
20 000 employees



1 in 3 people  
with a university degree



Number of doctoral students,  
relative share highest in Europe



#1 in R&D investments  
in Finland, among the top in the EU



5th biggest city in Finland,  
210.000 inhabitants,  
350.000 in the catchment area



A year-round  
Tourist City



Surrounded by  
pure nature



50-minute flight from/to Helsinki  
#2 in Finnish airport traffic



300-400 million EUR city centre  
development projects

710 ME will be invested in the  
infrastructure development by the  
City of Oulu in the coming years



37.6 is the average age of the people in  
Oulu - that is one of the youngest in Europe

## Enabled by

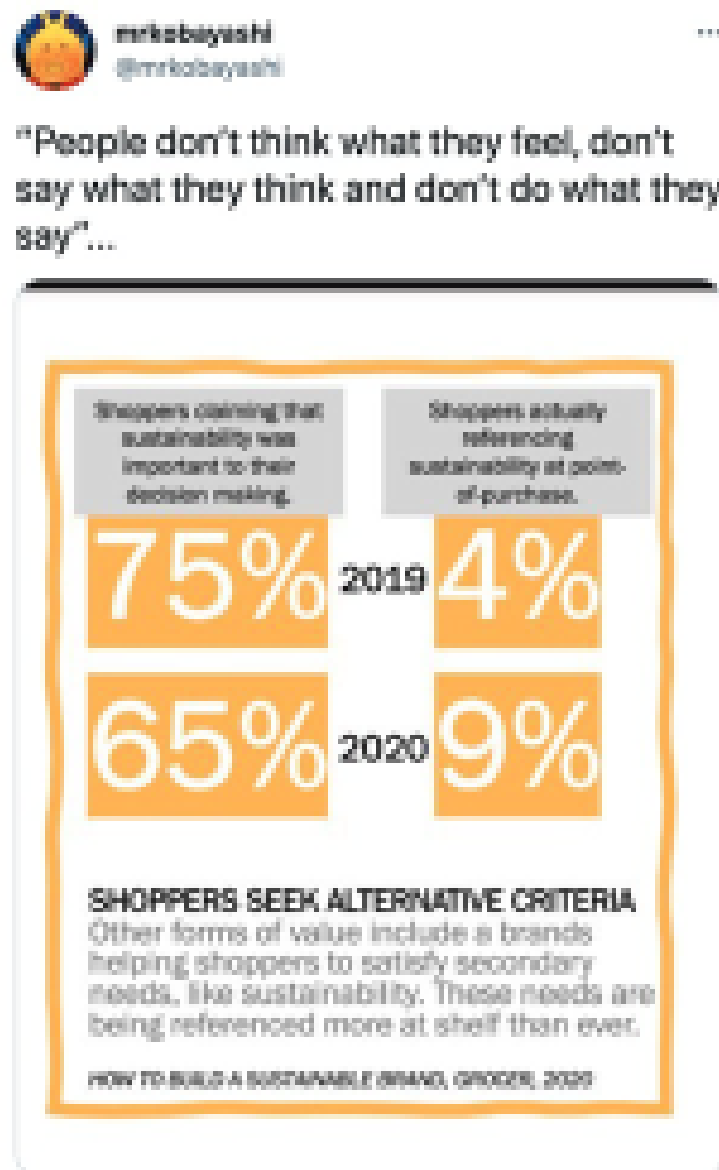




plecs

# Correlation?

Marketing strategies fail and overlook opportunities when focus too much on what people say, rather than check their behaviour data



4:28 AM · Apr 30, 2021 · Twitter for iPhone

## Education.

My experience is that too much time is spent on talking about how we perceive ourselves (laws, normativism, guidelines, methods) than our actual behaviour?

How good do we actually know/see our behaviour (statistic data isn't enough, you need dynamic data)



**emu** Idea – focus on monitoring behaviour of support system  
(instead of trying to diagnose children)

Latvia, year 2022./2023. ~39'000 students, 1.-12.grade.

**Simple Fact\*:**

Children learn their emotions, behaviour and strategies to solve them (skills) through external regulation – adults.

Efficiency of additional specialists (interventions and recommendations) is dependant on behaviour of adults that are most often around child.

Most frequent adults around children are parents and teachers (in LV – class teacher).

**What would happen if:**

We made **digital system** (with built in accountability, nudges, prompts and cues) that gives **behaviour data** – do school constantly behave as is told in laws and guidelines:

- regularly show interest in child (every semester)
- try to help
- involve colleagues asap when necessary + telling, what is that they can't do

Example of results from staff decisions of 1 municipality

School	Potential of school support capacity improvement
School 1	345%
School 2	252%
School 3	117%
School 4	333%
School 5	286%
School 6	779%
School 7	462%
School 8	235%
School 9	104%
School 10	133%

## Homework

- If you can't translate your system in a very clear algorithm, it will be hard to use AI given possibilities.

## Potential

- Huge increase in performance of specialists and teachers with much less costs

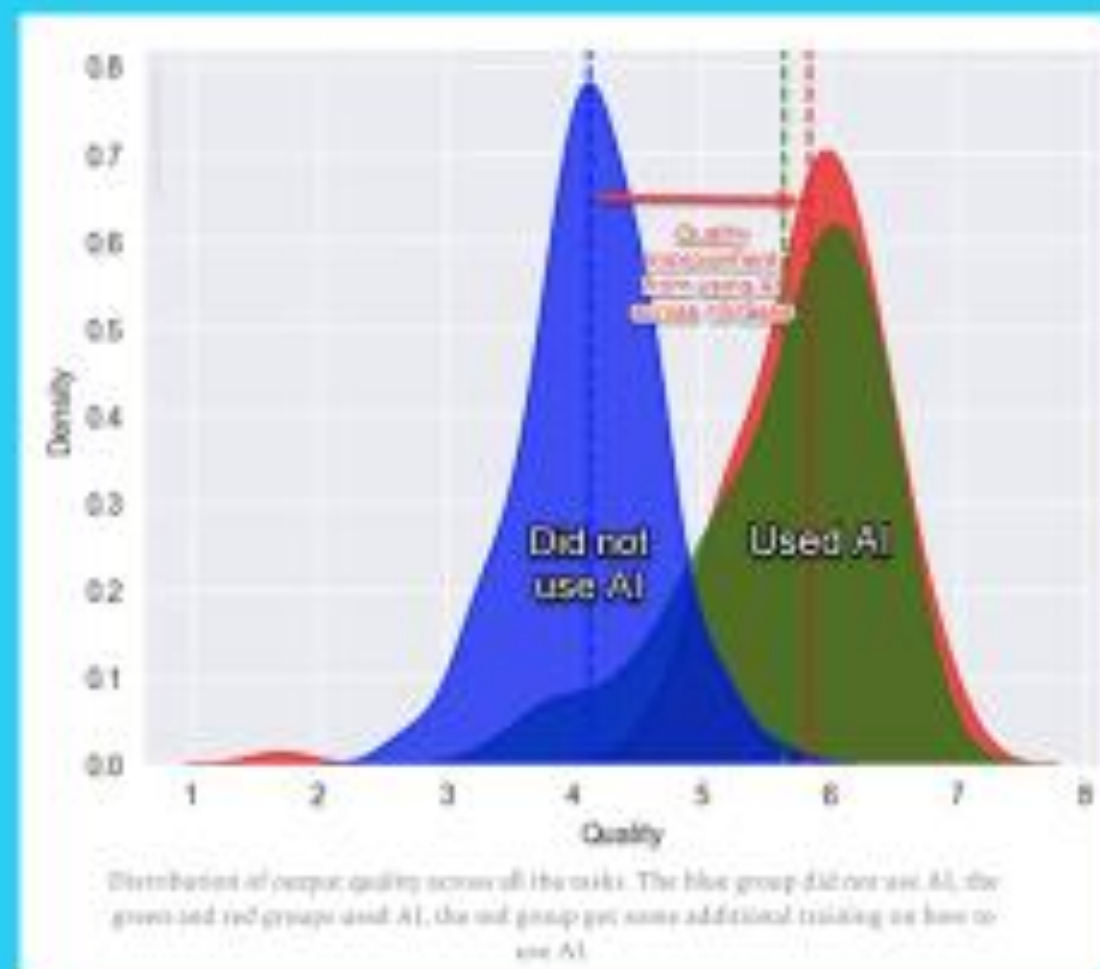
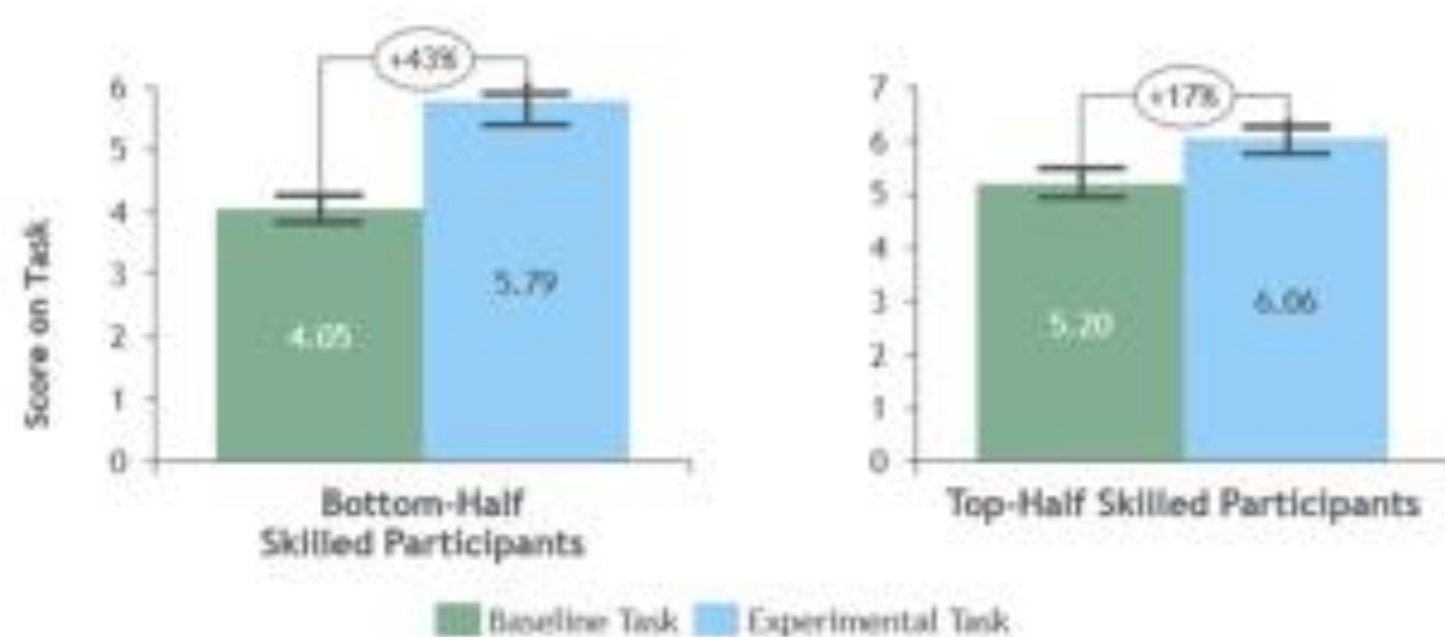


Figure 5: Bottom-Half Skills and Top-Half Skills - Inside the Frontier



# Workshops

14:00-15:15



## Future learning environments

Kitija Kuduma  
(IT-palvelut Kupittaa 3)

## Digital solutions

Taru Pätäri  
(Prikka)

## STEAM

Katri Lehtinen  
(Tuuki)

## Research and science education

Salla Sissonen  
Nina Brander  
(Kippo)

## Networking: learning and sharing

Jan Wilker  
Gunnar Anderzon  
(Auditorium President)

## Artificial intelligence

Jari Laru  
(Piletti)

**WORKSHOP**  
**«FUTURE LEARNING**  
**ENVIRONMENTS»**

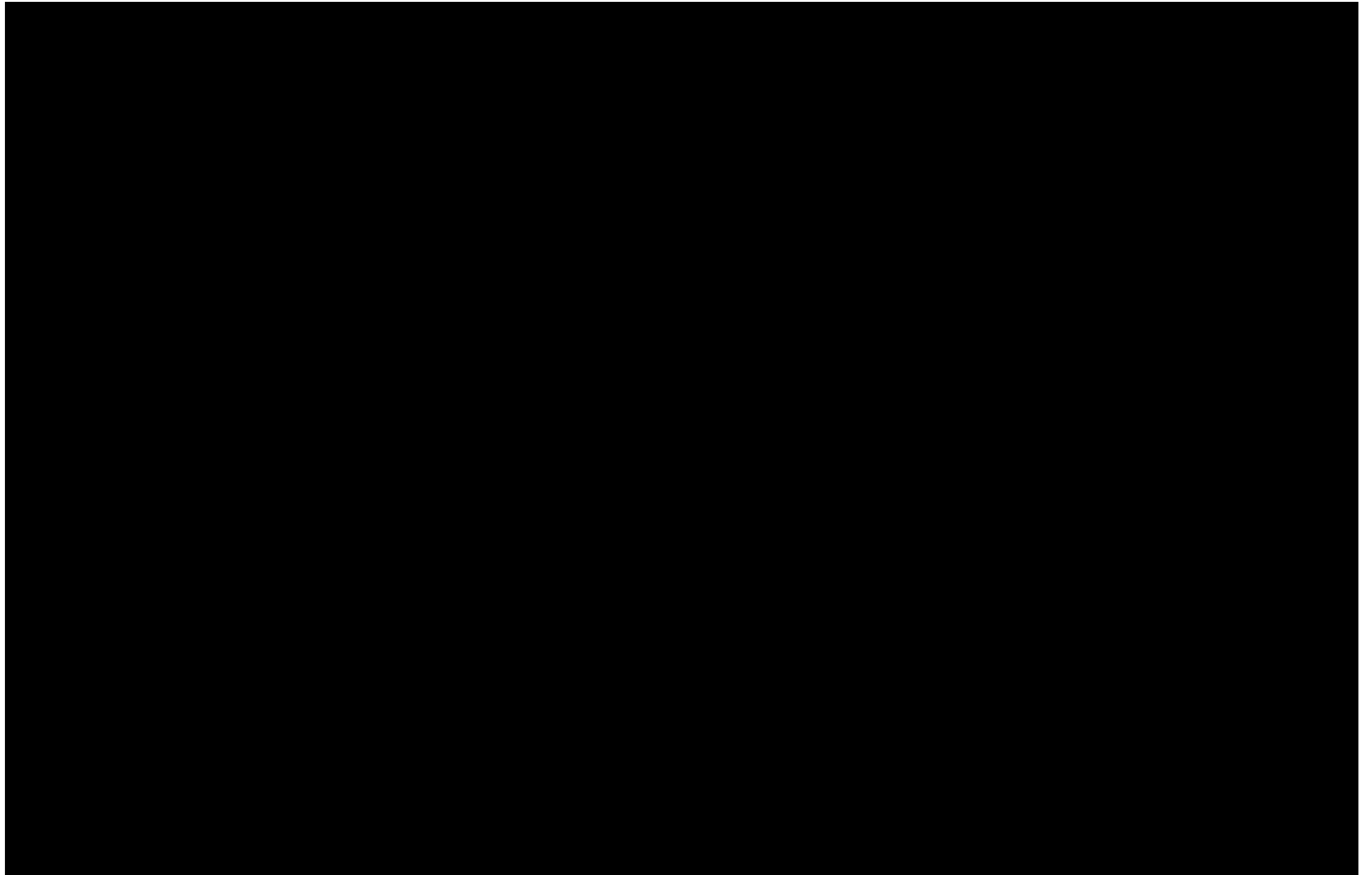
**THE LEARNING  
ENVIRONMENTS OF  
EDUCATION DEPEND ON THE  
EDUCATIONAL INSTITUTION IN  
WHICH THE LEARNER LEARNS  
AND THE TEACHER WORKS.**

**HOW TO CHANGE IT?**

**LEARNING ENVIRONMENT CENTRALIZATION  
*VERSUS*  
LEARNING ENVIRONMENT DECENTRALIZATION**

# KNOWLEDGE & RESOURCES CENTRALIZATION

- Forget about **all lessons** in **each** school – human, infrastructure and equipment sharing as our future
- Video - uncomfortable but valuable and authentic lesson lead by science center



## WHAT IS THE POINT?

- Not all teachers can do everything (e.g. biology teacher afraid of dissection in biology but excellent in everything else)





## WHAT ELSE?

## TECHNOLOGY HERALDS

Teachers **teach** but centralized environment

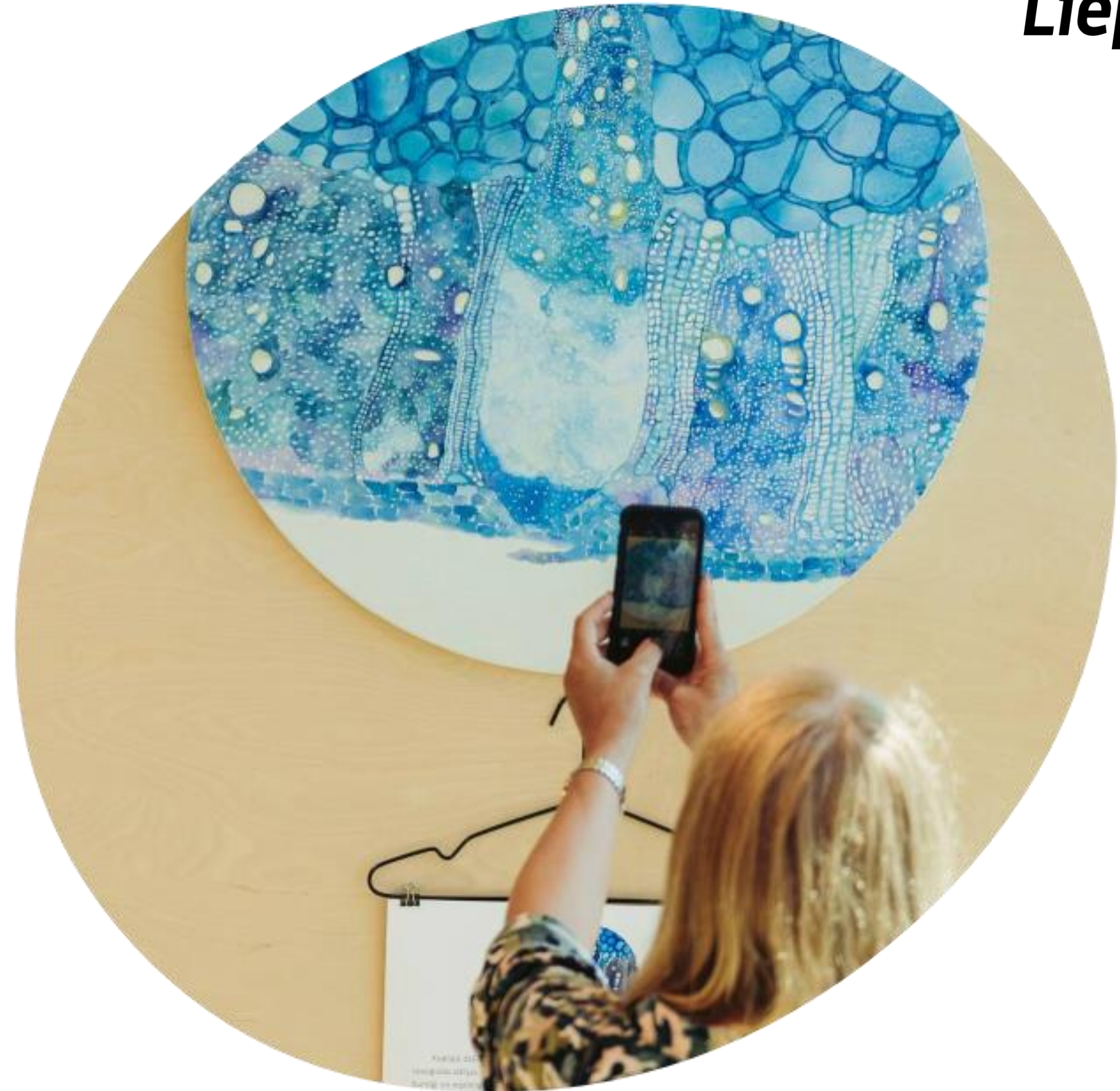
- professionally develops teachers
- provide bus from schools to science center and back
- maintain the material and machines
- provide technical support during the lesson



# ONE MORE PLEASE!

## EXAMPLE OF STEAM

- Art school's student final work – made in science center.
- Example of biology & art combination– microscoping flowers and making an art from that
- Would not be possible without cooperation (equipment context)



**MUST HAVE A  
DEFINED CATEGORY  
OF ENVIRONMENT**

**PEOPLE  
ORIENTED**

**RESOURCE  
ORIENTED**

**SOCIAL  
ORIENTED**

**MUST FIND HUMAN  
RESOURCE TYPE**

**STEM  
SPECIALIST**

**TECHNICAL**

**ADMINI-  
STRATIVE**

**UNIVERSITY  
STUDENT**

**TEACHER**

# MUST HAVE DIVERSE RAW MATERIALS AND MACHINES

- How do you stand out among others? Materials & machines is one but not the only way
- Maintenance
- Quantity *versus* quality



# TO BE LOCAL IN GLOBAL COMMUNITY

- A digital fabrication lab under global standards
- With the philosophies of «doing everything by self» and «make almost anything»
- 16 multifunctional stations are located on 100 m<sup>2</sup> with the future perspective for expansion



**There is no perfect  
model for future  
learning environment.**

**Find or improve  
yours!**

[www.ziic.liepaja.edu.lv](http://www.ziic.liepaja.edu.lv)

**Thank you!**

Acting Manager of Science and  
Education Innovation Center

**Kitija Kuduma**

[kitija.kuduma@liepaja.edu.lv](mailto:kitija.kuduma@liepaja.edu.lv)

# DigiOne – Ecosystem for learning





**DiGiOne**

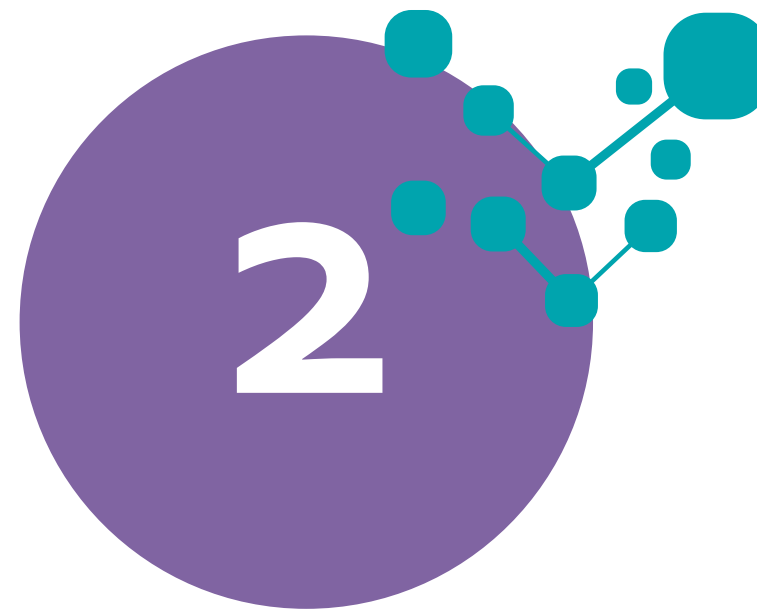
*Ecosystem for learning  
from Finland*



# DigiOne in brief



*Digital ecosystem  
for learning for all  
levels of education*



*All digital services and  
resources for learning and  
administration under one  
service platform*



*Easy-to-use and  
a single-sign-on  
platform for schools.*



# Vision & values

Improve learning and support pedagogical change



**LEARNING**



**EQUALITY**



**COOPERATION**



**USERS IN THE  
CENTRE OF ALL  
ACTIVITIES**



# DigiOne owners & partners



BUSINESS  
FINLAND



JYVÄSKYLÄ



LAHTI

OULU



TAMPERE

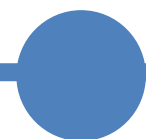


TURKU  
ÅBO

tiera

KUNTA  
LIITTO

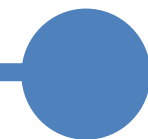
Available for  
new cities



2019

**Start of the program**

City of Vantaa and Business Finland



2020–2021

**New partners join**

Cities of Espoo, Jyväskylä, Lahti, Oulu, Tampere  
and Turku as well as Kuntien Tiera



2024

**Services in production**



# DigiOne in figures



The population of the municipalities participating in DigiOne covers over 25% of the entire population of Finland!

The learners of the municipalities participating in DigiOne covers around 30% of the entire basic and upper secondary education learners of Finland!

# DigiOne services

Everything you need for a digital school day

**DigiOne – Electronic desktop**  
Access management and aggregating user interfaces

## Own services

Education

School management

## Common services

Timetable

Electronic services and processes

Communication

## Optional services, e.g.

Learning and support

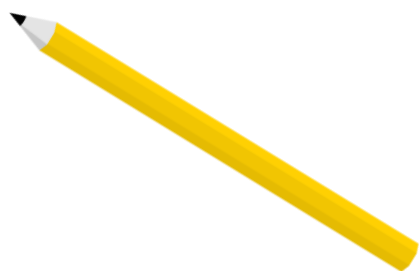
Well-being

Administration and  
management

## DigiOne platform

Development and testing environment, master data, data warehouses and integration platform

Integrations into municipal operating systems and national services



# The objectives of the DigiOne ecosystem



**Operational objectives**



**The ecosystem's objectives**



**Technological objectives**

# DigiOne ecosystem







# Benefits for teachers

- Keeping curriculum in the center of all activities
- Supporting personalized learning paths
- Co-operation between learners and collaboration between teachers
- Reflecting own professional competence
- Goal-directed development and the effectiveness of pedagogy
- Developing pedagogy and providing support based on knowledge of learning
- **All necessary data and information at your fingertips**



Opetus	Asiointi	Lukujärjestys	Viestintä	Muut palvelut
21.10.2022 8:00 - 8:45 testing	21.10.2022 9:00 - 9:45 testing	21.10.2022 10:00 - 10:45 testing	21.10.2022 11:15 - 12:45 testing	21.10.2022 13:00 - 13:45 testing
21.10.2022 14:00 - 14:45 testing				

0 Valittu

Oppijan nimi	Ryhmä	Poissa / läsnä	Poissaolon tyyppi	Opettajan selvitys	Osa- tai kokopv.	Tuntimerkintä	Osaryhmät
<input type="checkbox"/> Bergvall Tes Kurt		<input checked="" type="checkbox"/> Läsnä			<input type="checkbox"/>	<input type="text"/>	
<input type="checkbox"/> Popov Minja		<input checked="" type="checkbox"/> Läsnä			<input type="checkbox"/>	<input type="text"/>	
<input type="checkbox"/> Testimees Raito		<input checked="" type="checkbox"/> Läsnä			<input type="checkbox"/>	<input type="text"/>	
<input type="checkbox"/> Haapakoski Jatta		<input checked="" type="checkbox"/> Läsnä			<input type="checkbox"/>	<input type="text"/>	
<input type="checkbox"/> Blomqvist Viivi		<input checked="" type="checkbox"/> Läsnä			<input type="checkbox"/>	<input type="text"/>	

### Osa- tai kokopäiväpoissaolo



Bergvall Tes Kurt

< Edellinen 21.10.2022 Seuraava >

#### Tee merkinnät kaikille tunneille

Poissaolon tyyppi

Selvittämätön  Luvaton  Terveystieteellinen  Muu luvallinen

Opettajan selvitys

Oppitunti	Aika	Poissa / läsnä	Poissaolon tyyppi	Opettajan selvitys
ÄI6A	8:00-8:45	<input checked="" type="checkbox"/> Läsnä		
MAT6A	9:00-9:45	<input checked="" type="checkbox"/> Läsnä		
MAT6A	10:00-10:45	<input checked="" type="checkbox"/> Läsnä		
KUV6A	11:15-12:45	<input checked="" type="checkbox"/> Läsnä		
KÄS6A	13:00-13:45	<input checked="" type="checkbox"/> Läsnä		

### Tuntimerkintä

ÄI6A 21.10.2022 8:00 - 8:45 A323



Bergvall Tes Kurt

Lisää valmis palaute

Palautteen tyyppi

Oppiminen  Kasvatuksellinen  
 Ohjaava  Palkitseva  Ohjaava  Palkitseva  Tuki  Muu

Palaute

Toteutuneet tunnit yhteensä: Ei saatavilla ↑ Nouseva trendi ↓ Laskeva trendi (%) Osuus toteutuneista tunneista 1 Palkitseva palaute 1 Ohjaava palaute

Bergvall Tes Kurt

Näytä tiedot

Pienryhmät: Oppimisen merkinnät: Kasvatuksellisen merkinnät: Muut merkinnät: Tuen merkinnät: Poissaolot:  
 Ketut 2 1 2 1 1 5 10 (20%) ↓

Popov Minja

Näytä tiedot

Pienryhmät: Oppimisen merkinnät: Kasvatuksellisen merkinnät: Muut merkinnät: Tuen merkinnät: Poissaolot:  
 Ketut 2 1 2 1 1 5 10 (20%) ↓



# Benefits for learners

- Equal opportunities for learning
- Personal learning paths for learning
- Supporting self- directive learning
- Setting own learning goals and follow them
- Constructive feedback and information about one's own learning
  - Reflecting own learning process and recognition of personal strengths
  - **Joy of learning**

## Tavoite arviointi



Etunimi Sukunimi i

Näytä:  Vuosiluokan tavoitteet  Kaikki tavoitteet

**T1** 8 Oppimistapahtumaa vuosiluokilla 3 - 6

Lukuvuoden oppimistapahtumien  
painotettu tulos **75%**

Osaaminen: Valitse ▼

Palautteet:

Oppimistapahtumien tulokset:

2 1

32/40

8/10

20/20

Hyväksytty

Näytä arviointitapahtumat ▼

**T2** 8 Oppimistapahtumaa vuosiluokilla 3 - 6

Lukuvuoden oppimistapahtumien  
painotettu tulos **75%**

Osaaminen: Valitse ▼

Palautteet:

Oppimistapahtumien tulokset:

2 1

32/40

8/10

20/20

Hyväksytty

Näytä arviointitapahtumat ▼

**T3** 8 Oppimistapahtumaa vuosiluokilla 3 - 6

Lukuvuoden oppimistapahtumien  
painotettu tulos **75%**

Osaaminen: Valitse ▼

Palautteet:

Oppimistapahtumien tulokset:

2 1

32/40

8/10

20/20

Hyväksytty

Näytä arviointitapahtumat ▼

**T4** 8 Oppimistapahtumaa vuosiluokilla 3 - 6

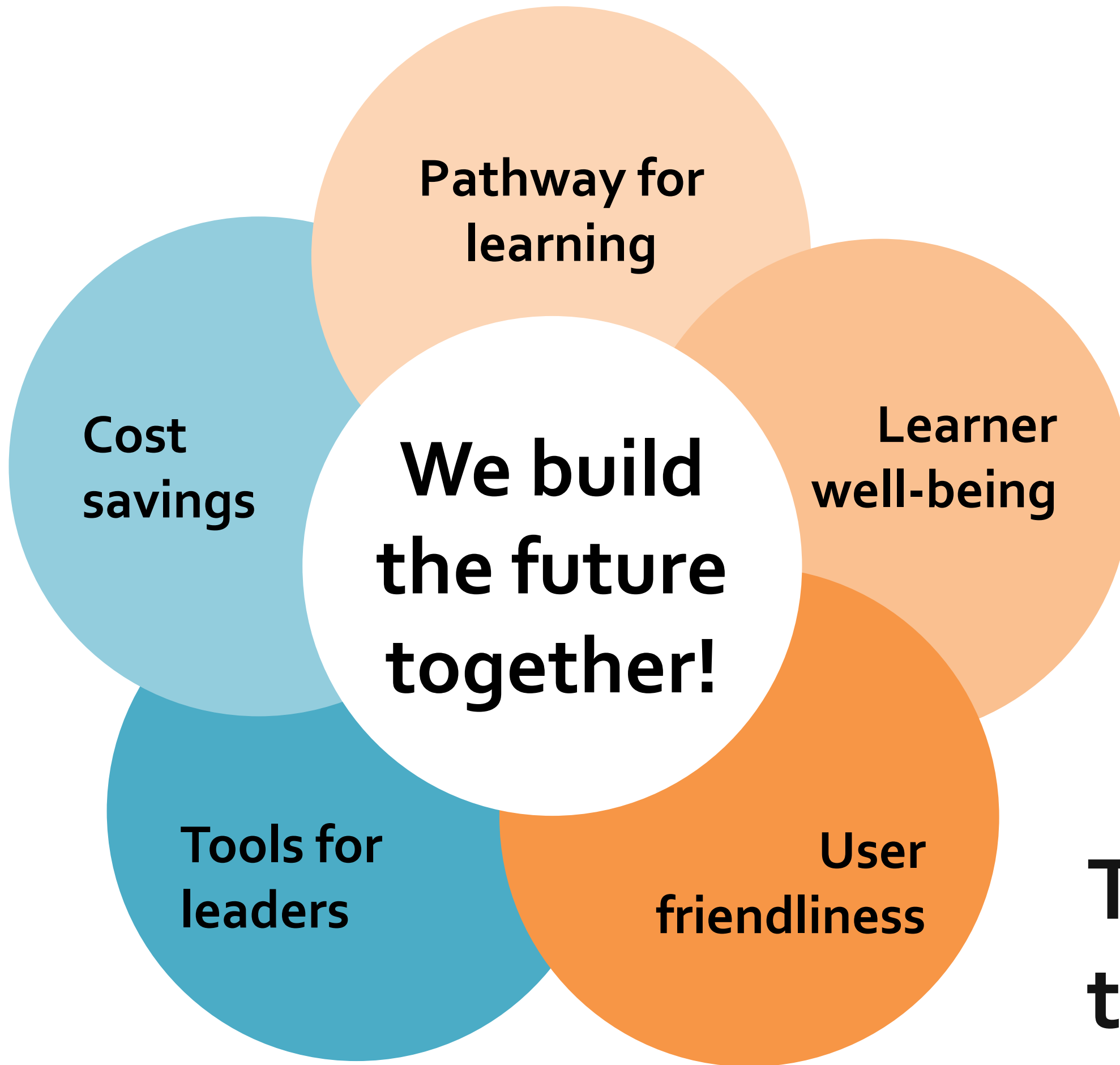
Lukuvuoden oppimistapahtumien  
painotettu tulos **75%**

Osaaminen: Valitse ▼



Joy of learning





**This is an investment for  
the future!**



Hundreds of thousands of users  
will be using DigiOne services in two years!

## Municipalities and companies within DigiOne

Municipalities involved  
cover  
**25 %**  
of Finnish population

300.000 users



JYVÄSKYLÄ

LAHTI

OULU



GOFORE



BUSINESS  
FINLAND

Harmonized way of working e.g.

- Ecosystem rules and guidelines
- Data model and terminology
- Terms for protection of data privacy and data security
- Architectural guidelines
- API-interfaces

Utilizing existing services and standards e.g.

- National student ID and personnel ID
- National curriculum
- National population services
- National login systems
- International OneRoster standard

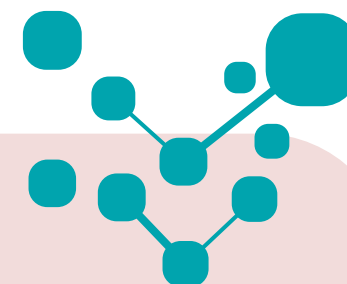


## Changes in operation and practices

DigiOne creates the conditions for future learning and supports the change in the educational operating culture and management.

The goal is to promote activities according to the curriculum and support the formation of the student's individual learning paths.

Student-related data is transferred with the student, taking data protection into account.



## DigiOne service platform

Open data models and interfaces reduce the monopolized situation and support the emergence of new innovative services on the market.

The introduction of new services is easy with the help of functional interfaces and integrations.

Municipalities achieve synergies in procurement, in the construction of interfaces to commercial and national services, testing and implementation, data security and data protection (GDPR).



## DigiOne ecosystem

The service platform connects people and organizations around the same learning goal.

The national rules and guidelines for the ecosystem bind actors to common goals and operational methods.

A functional ecosystem saves resources for municipalities, service providers and society.

Commonly agreed standards promote cooperation and openness and enable the creation of new innovative services.



# Benefits from shared platform and ecosystem



## Benefits from DigiOne platform

- Open, inclusive and flexible platform
- Open and shared resources
- Synergies and shared processes
- Open application interfaces



## Benefits from DigiOne ecosystem

- Shared goals to create shared benefits
- Shared rules and processes
- Standardization of services
- Development of new and innovative EdTech services
- Testbed for innovative new services

# DigiOne ecosystem



# Transforming data into knowledge and services

DATA → KNOWLEDGE → SERVICES



**Learner & guardian**



**Teacher**  
Support for learning



**Headmaster / Principal**  
Schools



**Education supervisors**  
Education provider



**Government**  
Ministry of Education  
EduFi, Researchers



# Thank you!



DigiOne in social media @DigiOneFi

[www.digione.fi](http://www.digione.fi)

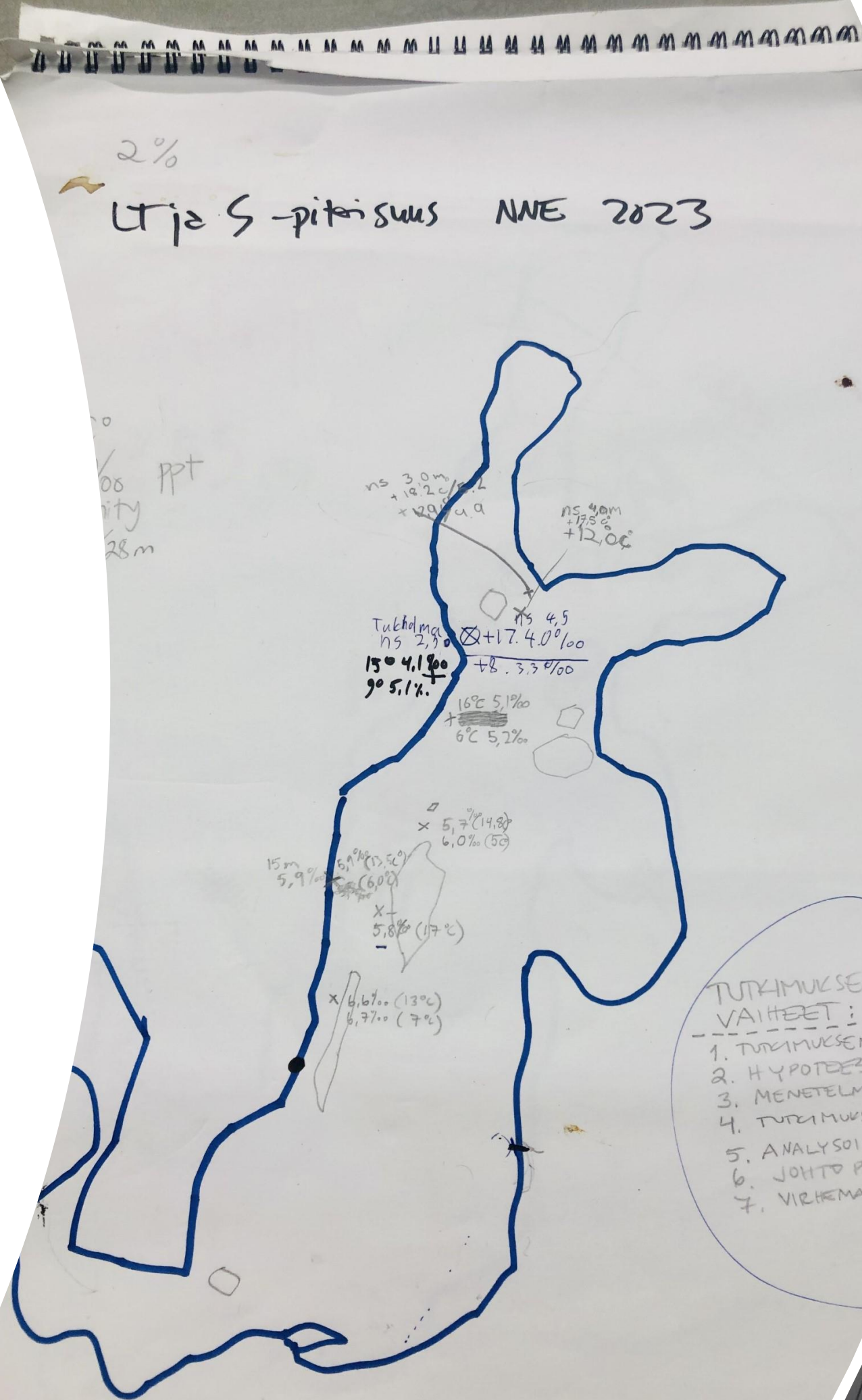
# Research and science education

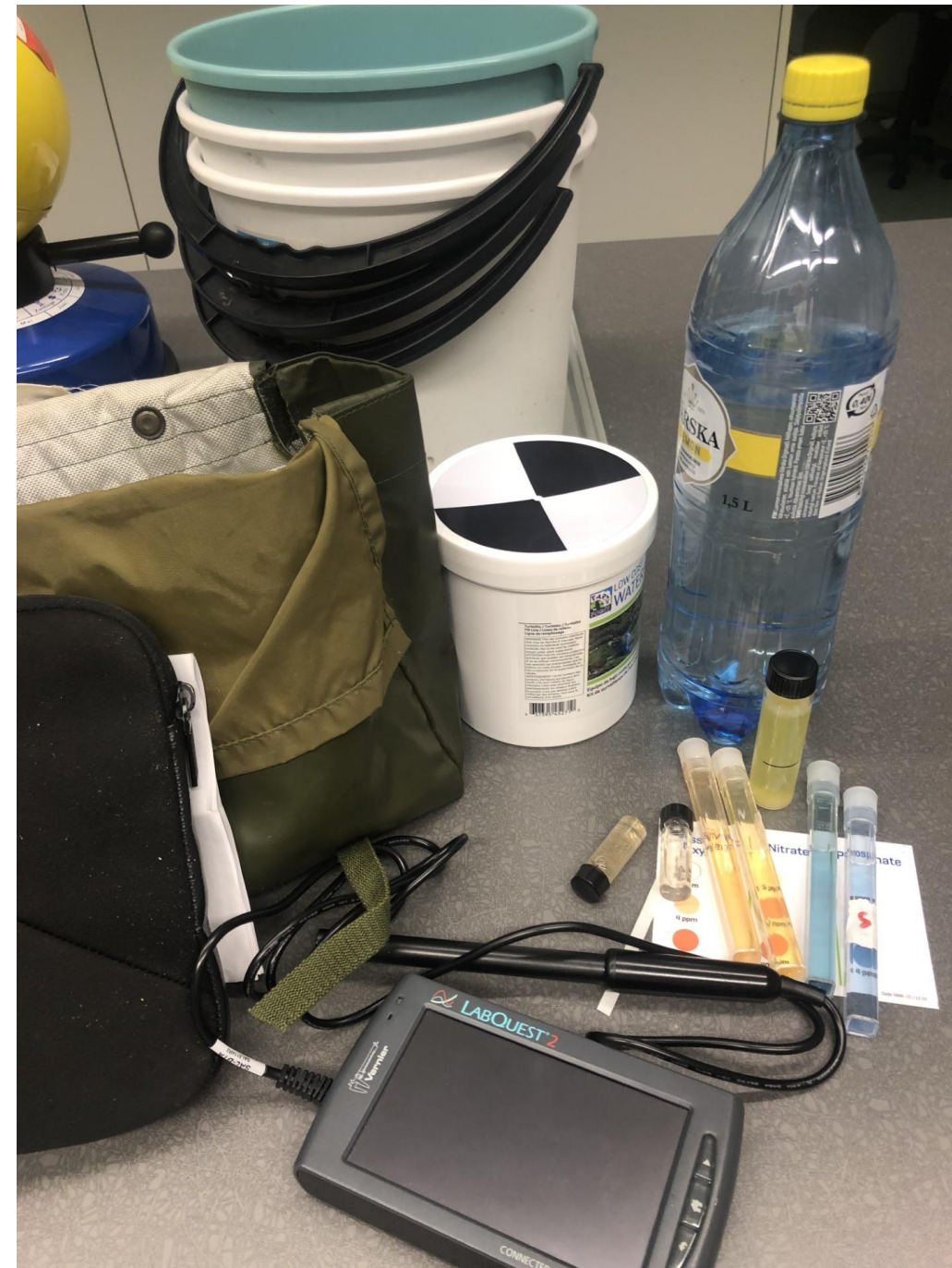
Nina Brander  
Salla Sissonen

1. A question, target – what we want to know (research question)
  2. What we think the answer will be (hypothesis)
  3. How can we test if we are right (the method)
  4. Running some tests to see if we were right
  5. Often quite light analysis of data
  6. Were we right? (validation or rejection of the hypothesis)
- Active learning, students as co-creators

# TSYK Upper Secondary - Science and Marine orientation

*NNE course ->  
sailing, marine  
biology and marine  
history*





## Rauk the Dog

Nina Brander

15.8.2023

Kävimme maanantaina Fårön Gamla Hamnin raukeilla. Gotlanti on tunnettu ruusuista ja ainutlaatuisista raukeista, jotka ovat harvinaisia Itämerellä.



Aaro ja Väinö operoivat 'Usvalla ykköslegiä Lokista Gamla Hamnin raukeille.

Raukit ovat muodostuneet noin 500 miljoonaa vuotta sitten. Raukki on kalkkikivimuodostuma, joka on syntynyt muinaisesta veden pohjasta. Myöhemmin se on noussut veden pinnan yläpuolelle. Aaltojen ja jääkauden kulutuksen myötä, ne ovat veistyneet kivipatsaiden näköisiksi. Aallot ovat kuluttaneet pehmeämmän kalkkikiven pois. Raukit ovat ikään kuin osa vanhoja koralliriuttoja, ja ne ovat ajautuneet tänne mannerlaattojen liikehännän takia. Gotlanti on ennen sijainnut päiväntasaajalla n. 500 miljoonaa vuotta sitten ja koko Fennoskandia on liikkunut sittemmin pohjoiseen. Tämän takia Gotlannissa on epätavallisesti kalkkikivi kallioperä.



# NETWORKING: LEARNING AND SHARING

Gunnar Anderzon

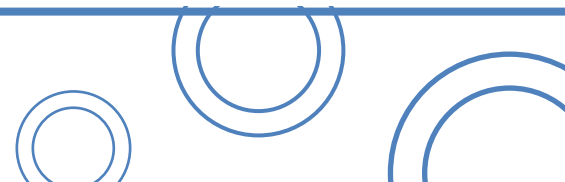
Jan Wilker



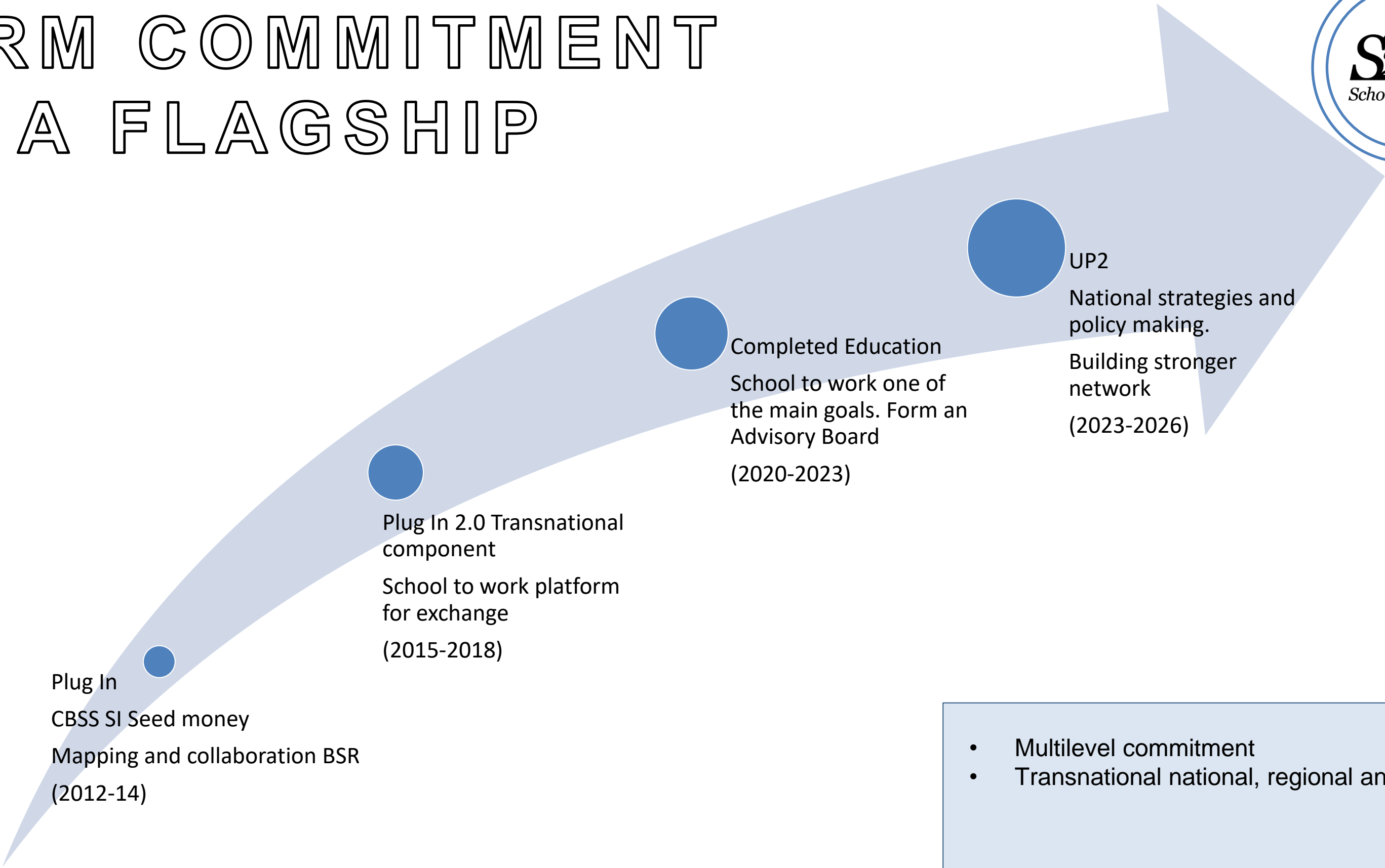
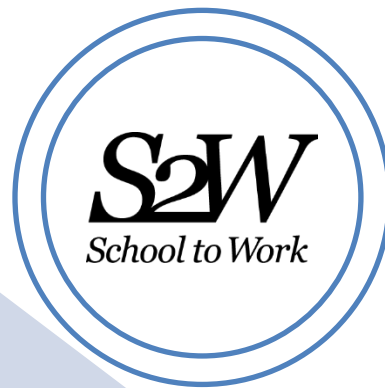
# PATHWAYS FOR SCHOOL SUCCESS CHALLENGES IN EU 2023



- one in five 15-year-olds do not possess sufficient competences in reading, mathematics or science ([OECD PISA survey, 2018](#))
- early leavers from education and training represent around 10% of young people in the EU
- only 84.3% of 20–24-year-olds have completed upper secondary education (Eurostat, 2020)



# LONG-TERM COMMITMENT RUNNING A FLAGSHIP



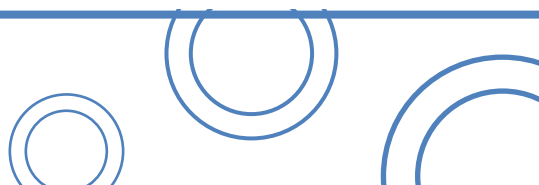
Plug In  
CBSS SI Seed money  
Mapping and collaboration BSR  
(2012-14)

Plug In 2.0 Transnational  
component  
School to work platform  
for exchange  
(2015-2018)

Completed Education  
School to work one of  
the main goals. Form an  
Advisory Board  
(2020-2023)

UP2  
National strategies and  
policy making.  
Building stronger  
network  
(2023-2026)

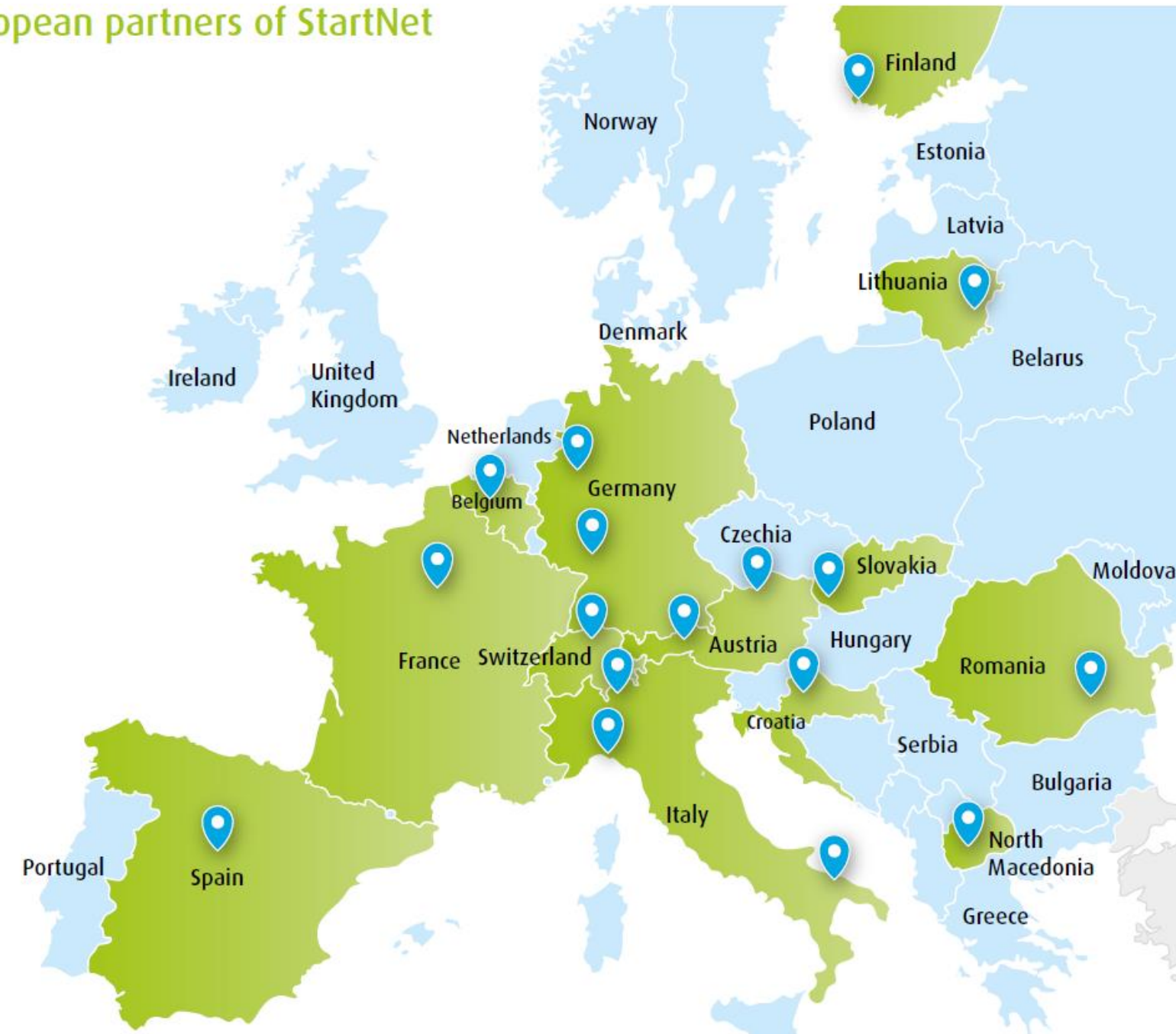
- Multilevel commitment
- Transnational national, regional and local



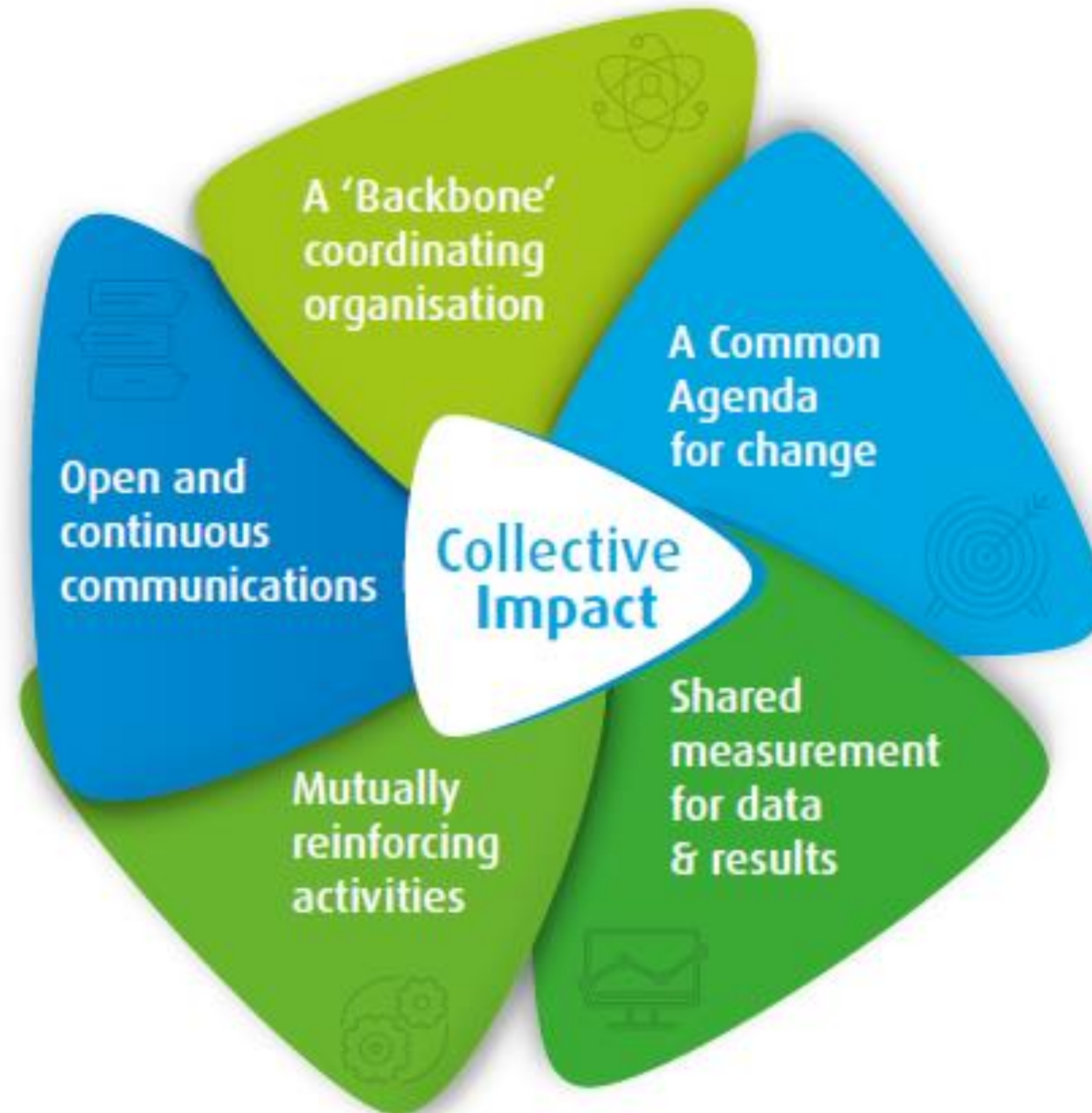
## ...some numbers:

- **Founded in 2017** by Goethe-Institut & Stiftung Mercator
- **2** levels of action: Southern Italy & Europe
- **18** partners in **12** countries
- **5** Erasmus+ projects among partners
- **15 000** participants in online & offline events

European partners of StartNet



# Our approach



Thematic exchanges  
on:  
Social Inclusion & NEET  
Youth participation  
Collective Impact  
VET & Apprenticeships  
Entrepreneurship  
Future of Work  
Career guidance



... connecting **policy & practice**



- Member of the **European Alliance of Apprenticeships & Digital Skills and Jobs Coalition**
- High level events: **MEP breakfast & visit of CULT-committee** of EU-Parliament
- Online-conferences with EU-Commissioner **Nicolas Schmit**
- **Official Partner #EYY2022**
- **#EuropeanYearOfSkills**

A network with...

### Key documents:

- Learning agenda
- Mission statement
- Short information about partners & contact persons

### Formats:

- Regular online & offline meetings
- Joint conferences & projects

### Methods/ principles:

- Equal footing
- Peer to peer
- Bilateral exchanges & backbone coordination
- Focus on partner's interests & availability
- fun



# G-STEAM project

- Erasmus+ funding
  - 400 000€
  - 10/2022 – 09/2025
- Turku, Tallinn, Jelgava, and the universities of Turku, Tartu and Kaunas



Funded by  
the European Union

# G-STEAM project

## Objectives

- To promote interest in science, technology and green skills through an increase in both the quantity and the quality of STEAM in schools.
- To ensure that future-oriented, sustainability-based green STEAM becomes an entrenched part of the education landscape to fulfill local economic and societal needs, the project establishes local green STEAM ecosystems in partner regions with the help of regional authorities, education providers, businesses, and other stakeholders.

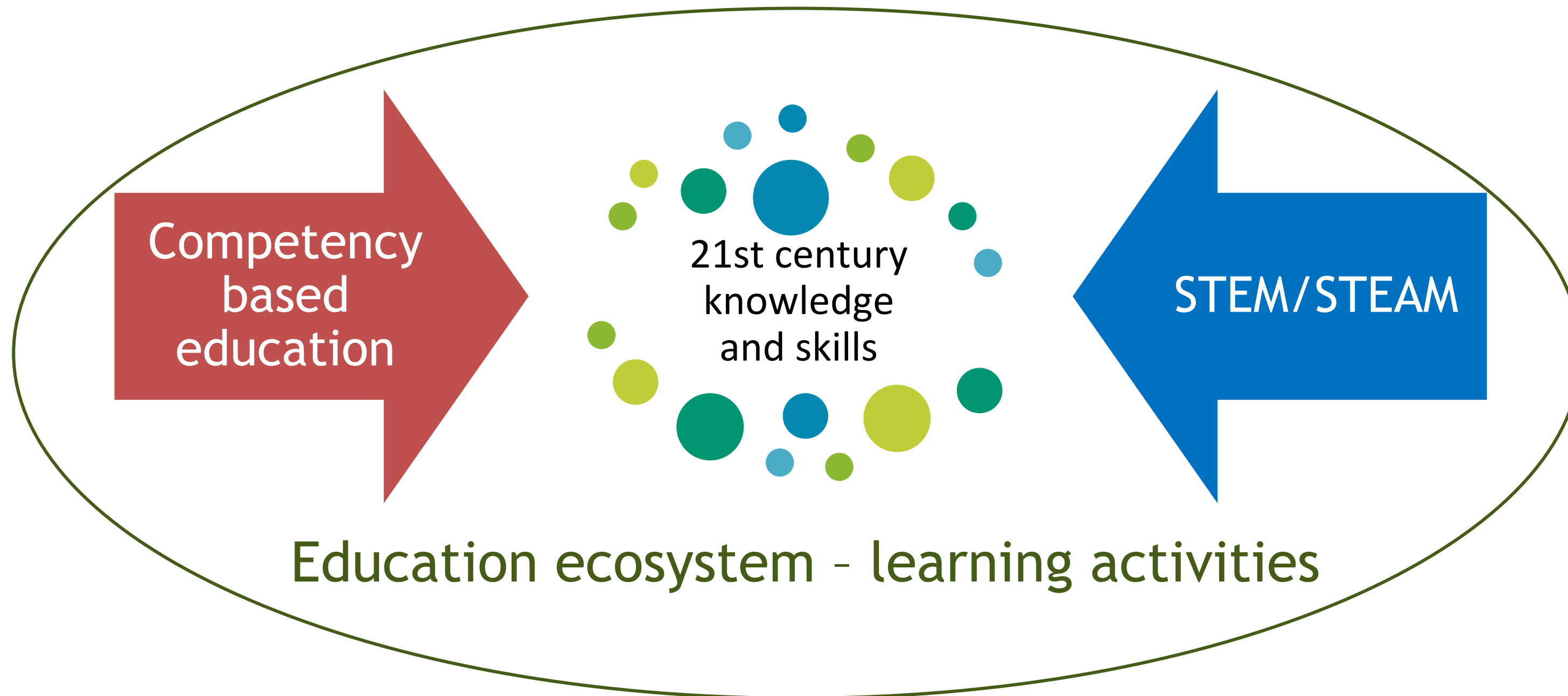
## Results

- **New STEAM teaching practices in use at each of the participating school education provider, which in turn leads to a much wider availability of STEAM education in all participating regions.**
- Improved teacher abilities in sustainable STEAM through specific green STEAM training
- A network of four functioning STEAM ecosystems in the Baltic Sea region
- Green STEAM Handbook



Funded by  
the European Union

# Jelgava Local Municipality



- Activities in the curriculum
  - Extracurricular activities
- Cooperation with external partners



# STEAM activities in Vircava secondary school



- meetings once a month
  - brainstorm
  - making the big lesson plans
- integrated in science, mathematics and design lessons



**Vircava elementary school teachers – Aurika  
Lemkina, Sarmīte Pavočkina, Inita Buša, Elizabete  
Amālija Grigorjeva and Alla Grigorjeva**



# From seed to new seed

**Subjects:** science, mathematics, design and technology, visual art.

## **Green thinking:**

This project encourages “green thinking” as seeds are sown in recyclable containers, and a flower garden is later created, building green infrastructure around the school. The measure promotes environmental protection and reminds students of the importance of recycling again.

**Complex achievable result:** in cooperation within the group, a long-term study shall be carried out during which seed is sown in recyclable containers, the growth process shall be documented, and, after a successful study, the plant flower cavity shall be recorded according to the composition created.

Using the previously prepared sketch, create an ornament on the flowerbed. When the ornament is created, place the seedlings and plant.

# An Interdisciplinary **GREEN STEAM PROJECT** at **Ozolnieki Secondary School**



**Subjects:** Geography, English and IT

**Form:** 9 (56 participants)

**Time period:** project realized in January-February 2023

**Learning objective:** analyze the sources of information, set a criteria for ethical travel and create an ethical travel homepage for the chosen country; plan, monitor and evaluate own learning process

**Materials made:** 3 lesson plans, 2 task descriptions, 6 evaluation forms and criteria, 4 worksheets, 5 presentations for the lessons

**Teachers:** Ritma Tīrumniece, Laura Plota, Aina Krūmiņa, Dainis Šantars



# Kindergarden «Taurenītis»

## Rain or shine... outdoor STEAM

Insect hotel. As agriculture expands, the natural habitat of bees in our region decreases. Therefore, together with the children, we make an "Insect Hotel" for bees and other insects. Which will be a great opportunity for children to explore later on.

Experiments in an outdoor environment. In the preschool territory we learn the interactions of natural processes through experiments. We watch various experiment videos and test them in nature.

Get to know scientific equipment in cooperation with the school. For example, first robots (robobees), microscope etc.



# Kindergarden «Pūcīte»

## Rain or shine...outdoor STEAM

**The growing of earthworms.** The children actively explore the life activities of earthworms and take care of them, feeding them.

**The detective backpack.** Activities with tasks to discover the surrounding environment.

**The forest Mulle Activities.** Introducing kids with nature loving character to discover the forest ecosystem.



# Jelgava State gymnasium

**Liene Sabule (biology teacher)**  
**Liene Krievina (math teacher)**

# Developed STEAM activities

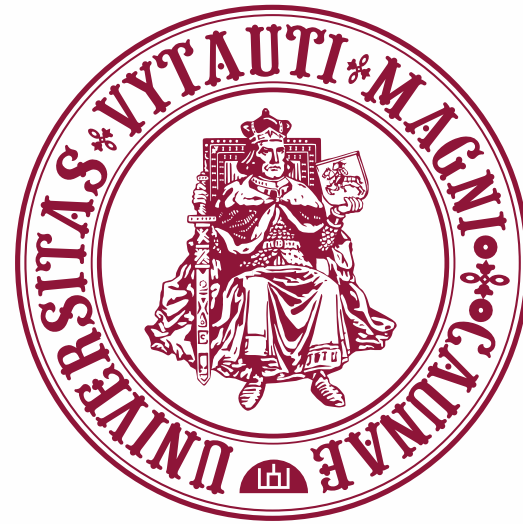
Scientific notation and multiples of units	Mathematic models for the science fair	Effective Usage of Small Solar Panels for Charging Mobile Phones	Rube Goldberg machine	Short film production	<b>Building theraft</b>	Equation of line and rectilinear motion	Peripheral vision
<ul style="list-style-type: none"><li>• Mathematics</li><li>• Music</li><li>• Visual arts</li></ul>	<ul style="list-style-type: none"><li>• Mathematics</li><li>• Engineering</li></ul>	<ul style="list-style-type: none"><li>• Geography</li><li>• Physics</li><li>• Engineering</li><li>• Mathematics</li></ul>	<ul style="list-style-type: none"><li>• Engineering</li><li>• Visual arts</li><li>• Crafts</li><li>• Mathematics</li><li>• Physics</li></ul>	<ul style="list-style-type: none"><li>• Theatre arts</li><li>• Computing</li></ul>	<ul style="list-style-type: none"><li>• <b>Geography</b></li><li>• <b>Physics</b></li><li>• <b>Engineering</b></li><li>• <b>Mathematic</b></li><li>• <b>Biology</b></li></ul>	<ul style="list-style-type: none"><li>• Mathematics</li><li>• Physics</li></ul>	<ul style="list-style-type: none"><li>• Biology</li><li>• Mathematics</li></ul>

Activity plan

Student worksheets

Feedback from students and teachers

# Vytautas Magnus University, Kaunas, Lithuania



VYTAUTO DIDŽIOJO  
UNIVERSITETAS  
— M C M X X I I —

VMU Faculty of Nature Science is a partner institution in G-STEAM Project.

During active communication with inservice STEAM teachers from Kaunas public schools, it was identified that:

From the teachers' point of view - they lack specific knowledge and research competencies.

Teachers have different understanding of STEAM.

STEAM activities usually are not integrated in school curriculum.

Faculty of Nature Science is in close cooperation with university STEAM centre (established at 2023):

Includes scientists from different faculties (Nature, Engineering, IT and Math sciences), that consults pre- and in-service teachers with organizing STEAM activities.

Organizes STEAM education training and consultations for students and teachers, provides them with methodological assistance.

Organizes and conducts scientific research on the content and process of STEAM education.



Funded by  
the European Union

# Vytautas Magnus University, Kaunas, Lithuania



VYTAUTO DIDŽIOJO  
UNIVERSITETAS  
— M C M X X I I —

Two in-service teachers were employed in the project.

Previous analysis of STEAM teachers e-portfolio shows, that these teachers actively applies STEAM activities during their lessons and are able to integrate them into the school curriculum.

Green STEAM concept was discussed with employed teachers.

In cooperation between VMU and employed teachers six STEAM activities have been prepared, that corresponds to the G-STEAM concepts.



Funded by  
the European Union

# Vytautas Magnus University, Kaunas, Lithuania

## **Biodiversity**

Environmental observations: A little bug with a huge impact.

*The importance of biodiversity surrounding us: the role of decomposers in the environment and learning about different habitats, using the woodlice as a model organism.*

## **Sustainable thinking**

Production of natural hair shampoo: properties and advantages over commercial ones.

*Evaluation of foam formation and consistence , effectiveness of hair degreasing.*

Turning food waste into biodegradable bioplastics.

*Optimal production of bioplastic by using milk casein as model object.*

Ground water contamination threat modeling

*Understanding how soil structure affect pollutants spread and management of pollution in urban environments.*

Green roofs for sustainable urban development.

*Solving urban heat islands effect problem by planning and creating green roofs (including importance of biodiversity).*

## **Renewable energy:**

Following the carbon footprint: greenhouse gases

*Case study: CO<sub>2</sub> emission analysis of different companies and managing they activity in sustainable way.*

# Past year – summarized 1/2

## **Taking integrative STEAM to schools**

- Changing the narrative – STEAM is not “just” physics, technology, math
- Including cultural and social aspects of sustainability
- Contacting all of the principals systematically
  - having the management’s support is crucial for opening doors
- 2 weeks of co-teaching periods in one school
  - Planning and co-teaching + teacher networking



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# Past year – summarized 2/2

## Lessons learned

1. Supporting teachers in planning more elaborate STEAM practices (multidisciplinary)
2. Teachers learning about the diverse approaches to sustainability education (other angles than ecological) and finding it important and relevant
  - STEAM approaches spreading to more schools
3. Diverse students being supported by STEAM approaches
4. Engaging the teachers meaningfully – challenge to be tackled
5. Prejudices about STEAM – change the narrative



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the European Union

# Group task

- The participants are divided into two groups of six. You have approximately 30 minutes to discuss and write down your thoughts. After the discussion, each group has ten-ish minutes to present their answers to the questions below.
1. What is the situation like regarding school segregation in your city/region/country?
  2. What measures are taken to combat/reduce school segregation in your city/region/country?
  3. What measures **SHOULD** be taken?
  4. Is needs-based resource allocation for schools used in your city/region/country? If it is, are you aware of what criteria are used to distribute it? If it is not used, do you see a need for needs-based funding?





# Artificial intelligence workshop

GenAI teachable  
machine & AI  
literacy

**Generation AI project funded by Strategic Research Council  
Finland**, Jari Laru, University lecturer, Technology Enhanced Learning, Faculty of  
Education and Psychology, University of Oulu, Finland, [jari.laru@oulu.fi](mailto:jari.laru@oulu.fi)



# GENERATION AI

Multidisciplinary project that addresses the emerging education needs of the AI era by developing social practices, pedagogical models, and educational technology for K–12 education

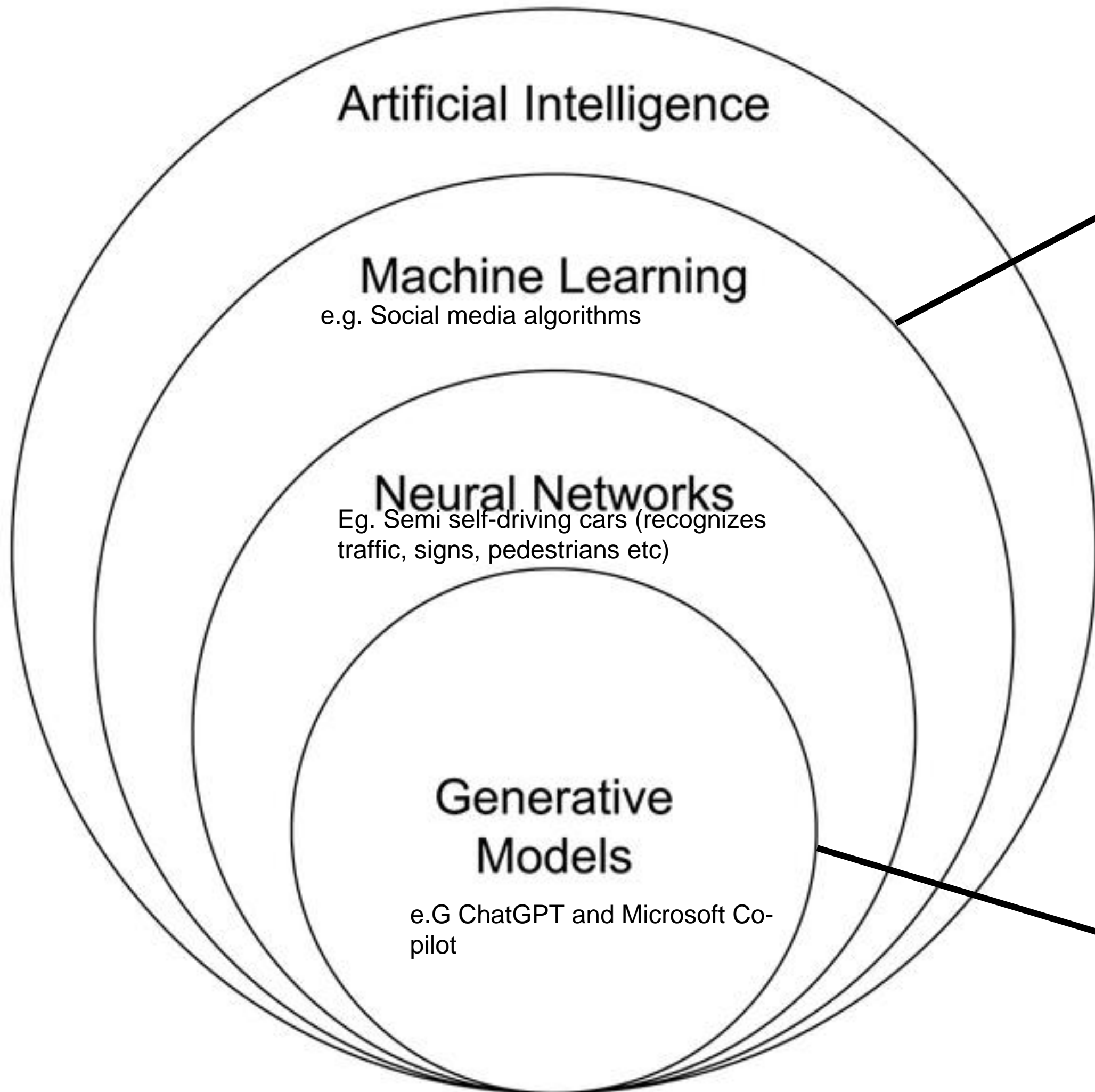
In this six-year, 5.4M€ project, researchers from Computer Science, Education, and Law collaborate with pre-service and in-service teachers, as well as children and youth ranging from pre-primary to 9th grade





- Information processing sciences
- Educational Sciences
- Law Sciences
- Science center & Science Fair
- Coding school





GENERATIVE AI

# Top 100+ Generative AI Applications / Use Cases in 2023

Updated on **September 11, 2023** | 24 minute read



Author  
**Cem Dilmegani**

<https://research.aimultiple.com/generative-ai-applications/>

# European Journal of EDUCATION

RESEARCH, DEVELOPMENT AND POLICY

*Futures of artificial intelligence in education*

Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education*, 57, 542-570.  
<https://doi.org/10.1111/ejed.12533>

Edited by the European  
Institute of Education  
and Social Policy  
[www.eiesp.org](http://www.eiesp.org)

WILEY  
ISSN 0141 8211

TABLE 1 A taxonomy of AIED systems

STUDENT-FOCUSED AIED	
Intelligent Tutoring Systems (ITS)	***
AI-assisted Apps (e.g., maths, text-to-speech, language learning)	***
AI-assisted Simulations (e.g., games-based learning, VR, AR)	***
AI to Support Learners with Disabilities	***
Automatic Essay Writing (AEW)	***
Chatbots	**/*
Automatic Formative Assessment (AFA)	**/*
Learning Network Orchestrators	**/*
Dialogue-based Tutoring Systems (DBTS)	***
Exploratory Learning Environments (ELE)	**
AI-assisted Lifelong Learning Assistant	*
TEACHER-FOCUSED AIED	
Plagiarism detection	***
Smart Curation of Learning Materials	***
Classroom Monitoring	***
Automatic Summative Assessment	**/*
AI Teaching Assistant (including assessment assistant)	**/*
Classroom Orchestration	**
INSTITUTION-FOCUSED AIED	
Admissions (e.g., student selection)	***
Course-planning, Scheduling, Timetabling	***
School Security	***
Identifying <i>Dropouts</i> and <i>Students at risk</i>	***
e-Proctoring	***

\* Spekulatiivinen  
\*\* Tutkittu  
\*\*\* Kaupallisesti saatavilla

Source: Authors.

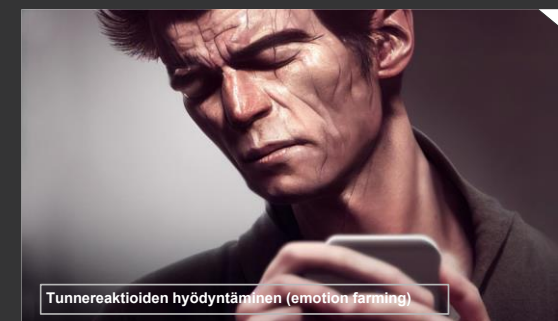
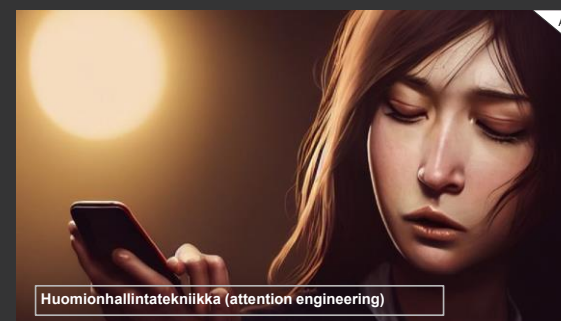
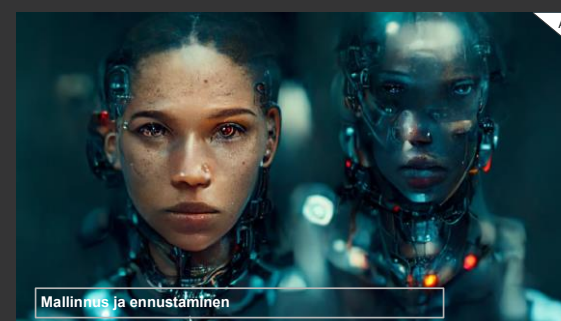
Some application areas in HE..

From: [Exploring the impact of Artificial Intelligence and robots on higher education through literature-based design fictions](#)

	Technologies involved	Time frame	Genre	Area of application to HE
Fiction 1: AIDan, the teaching assistant	Intelligent tutoring systems, adaptive pedagogical agents, use of sensors to allow affective/embodied adaptivity	Future	Traditional design scenario	Teaching
Fiction 2: Footbotball	Robots	Future	Soliloquy	Extra curricula activity
Fiction 3: CriticalBot in conversation	Conversational agent	Present	Dialogue	Teaching
Fiction 4: The intelligent campus app	Smart campus: wayfinding, nudging	Present/near future	Mundane, day in the life	Estates management/ Teaching
Fiction 5: Research Management Suite TM	Text and Data Mining, auto summarisation, auto writing	Future	Marketing and PR material	Research
Fiction 6: Verbatim minutes of University AI project steering committee: AI implementation phase 3	Not defined	Near future	Meeting minutes	All
Fiction 7: Dashboards	Data mining, conversational agents	Future	Soliloquy	Administration/Teaching
Fiction 8: Minnie, the AI admin assistant	Conversational agents	Near future	Surreal, cyberpunk dystopia	Administration, Wider social infrastructure

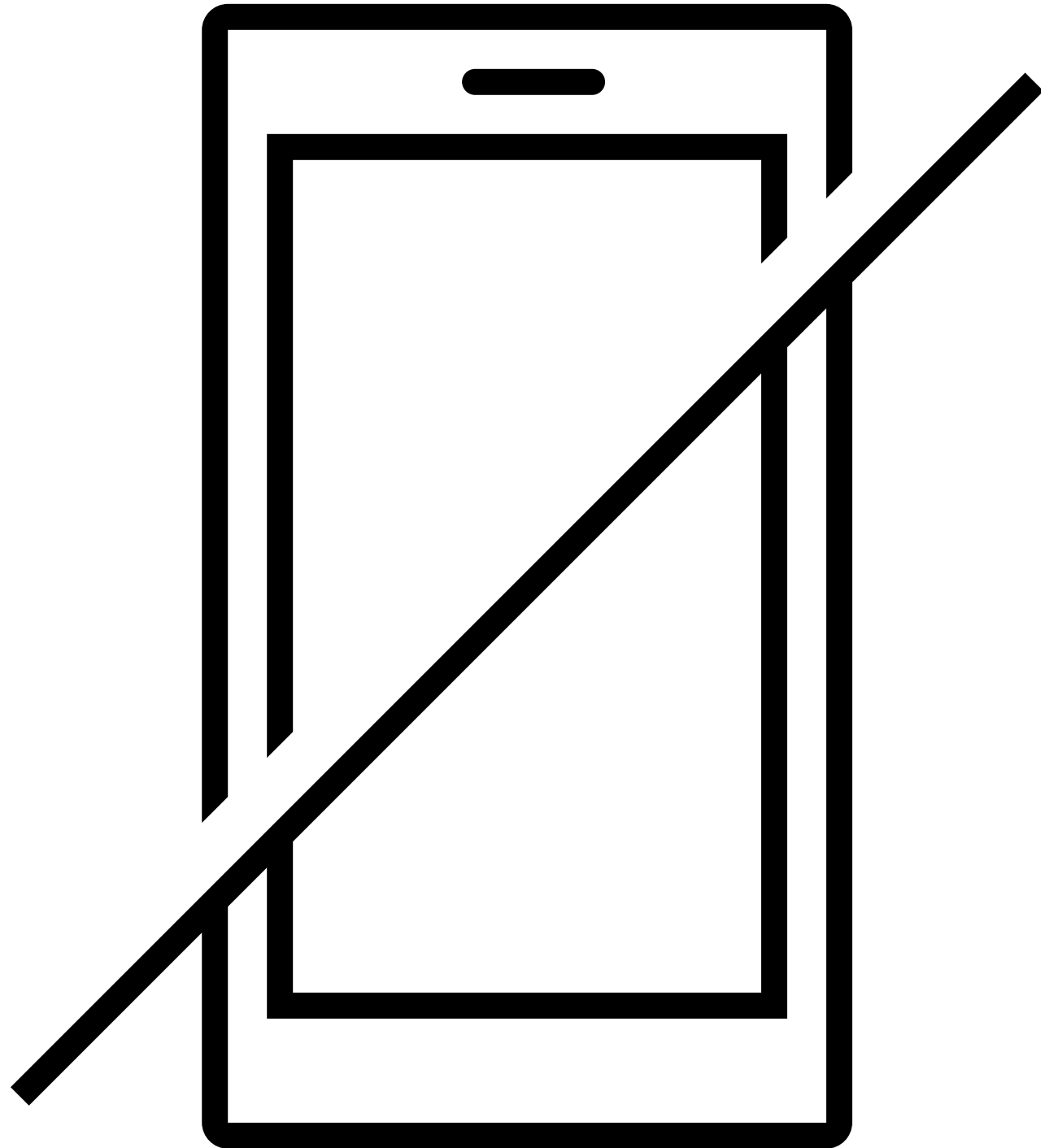


- EETTISIÄ ONGELMIA
- PUUTTUVIA YHTEISIÄ PELISÄÄNTÖJÄ
- AVOIMIA KYSYMYKSIÄ



Topical issues: Ethical problems, missing regulation, open questions





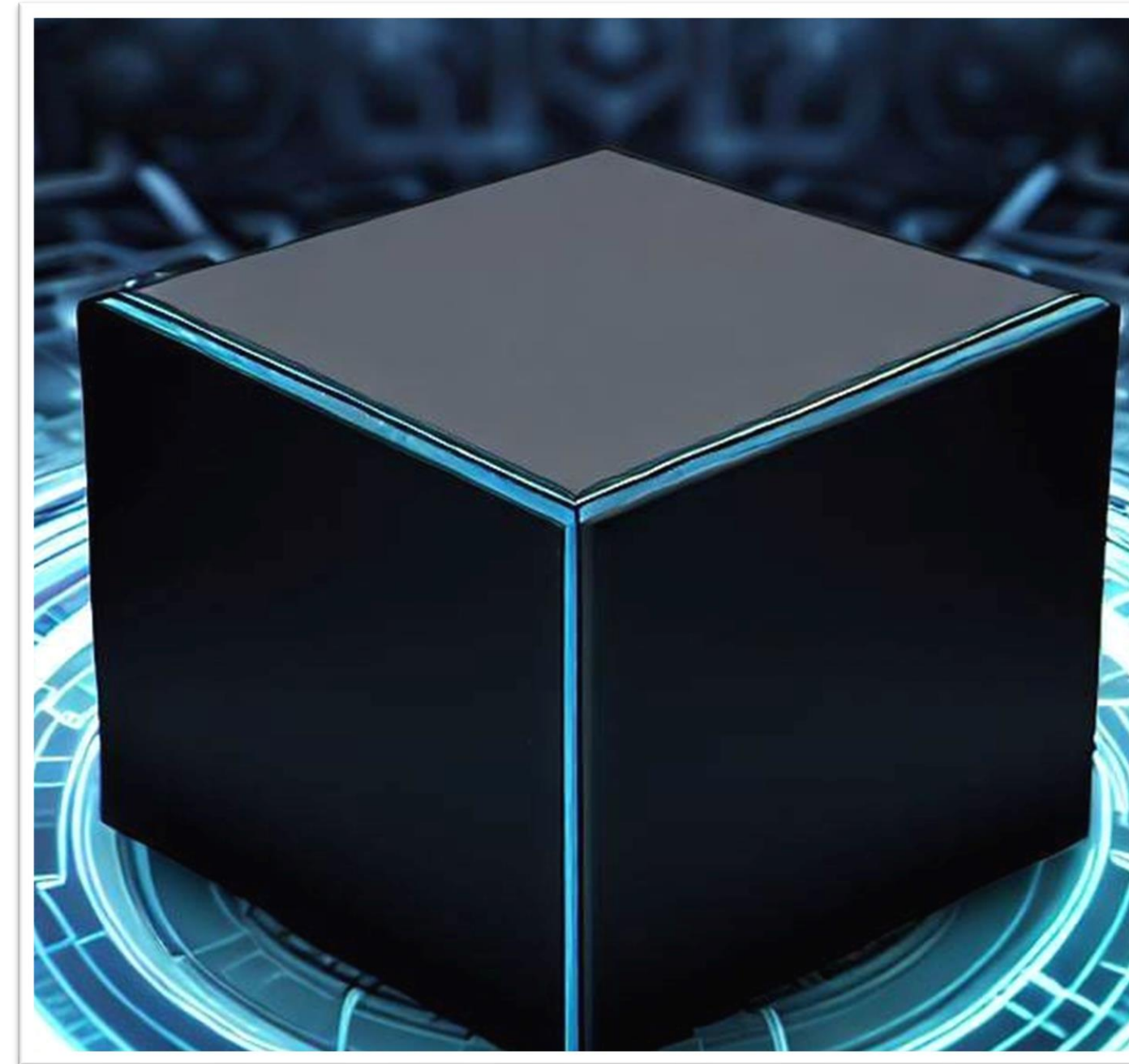
Mobile phones are not actually  
problem, But social media apps &  
games are. **Actually AI embedded  
into  
apps is the problem.**

## Children and the Artificial Intelligence Act: Is the EU Legislator Doing Enough?

12 SEPTEMBER 2023 / BY [SUSANNA LINDROOS-HOVINHEIMO](#)

[Blogpost 37/2023](#)

The negotiations for the EU's Artificial Intelligence Act are [in full swing](#) and there is plenty of debate about the proposed Regulation. One issue that has largely been forgotten is the protection of children. Should there be some specific rules for protecting children in AI contexts? At the moment, the EU legislator seems to say no. Even though the proposal for the AI Act has evolved in directions that take into account fundamental rights, the articles of the Regulation have clearly not been written with



**What is AI good at?**

**Can I program AI?**

**What technologies do I use that use AI?**

**How can AI help me?**

**What is AI?**

**Is AI dangerous?**

**What types of AI will exist in ten years?**

**Should I be worried about AI using my data?**

**Is AI objective?**

**Does AI think or feel like I do?**

**Will AI take my job?**

**Is this news article about AI accurate?**

**How does human intelligence compare to AI**

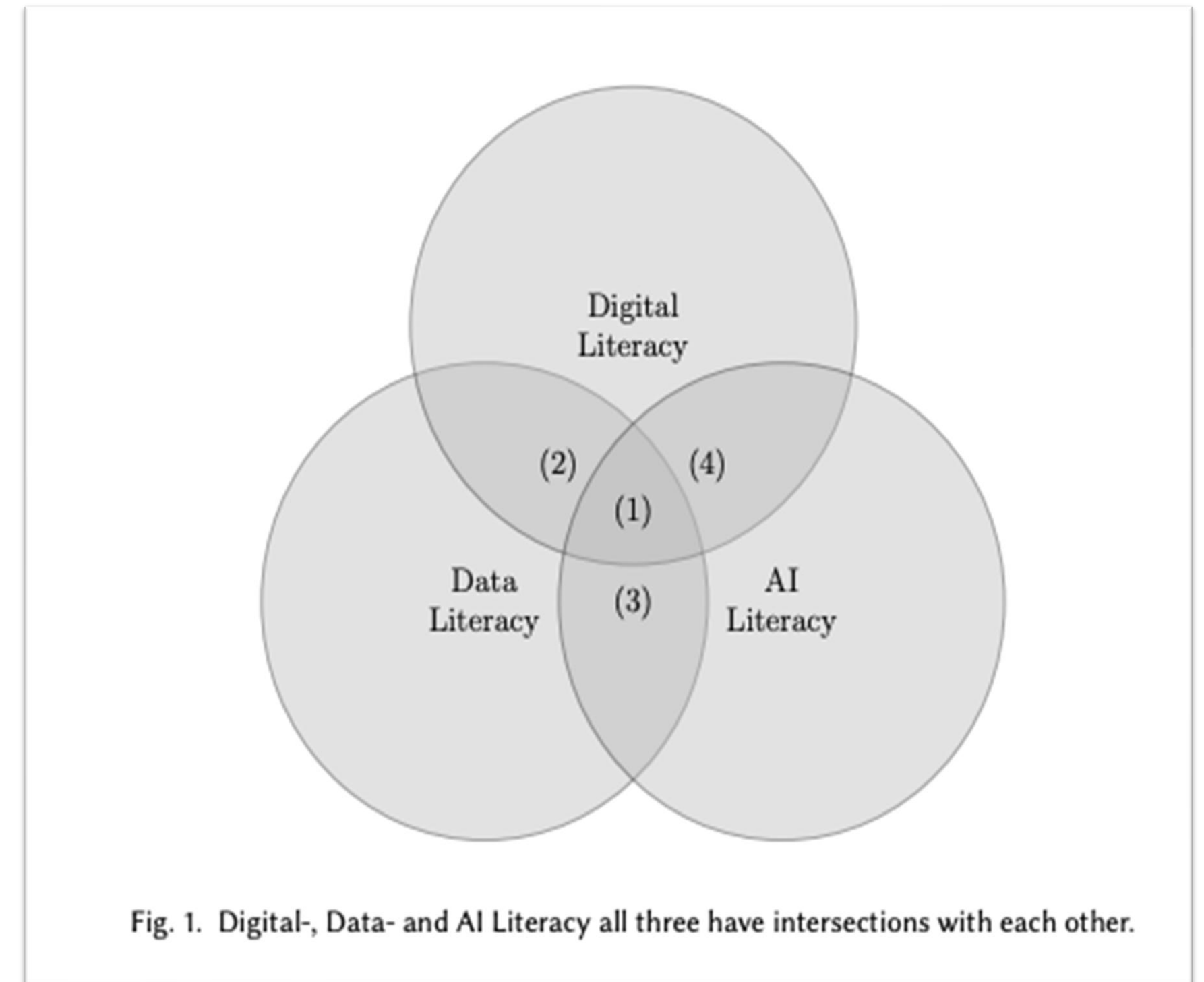
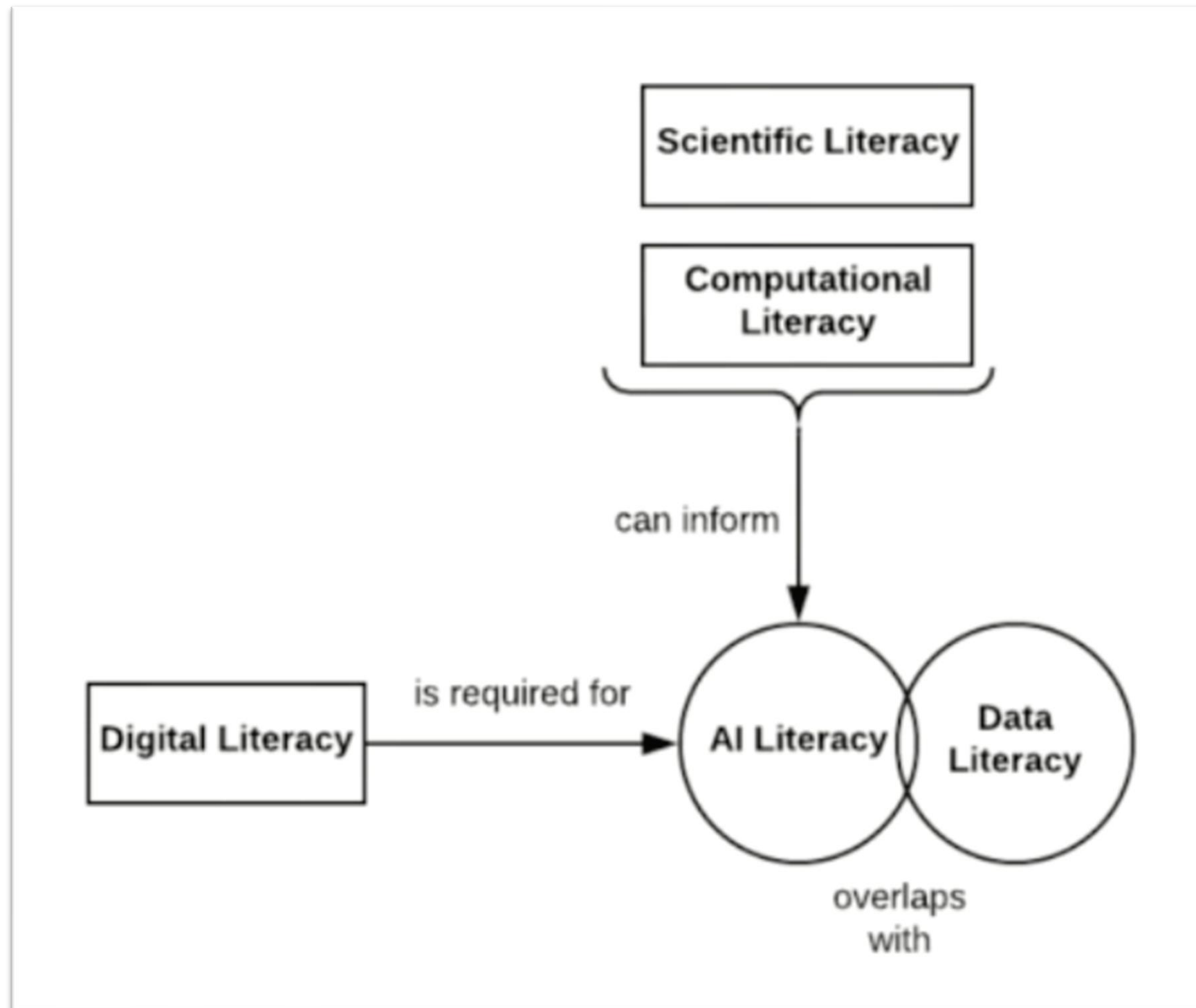


Fig. 1. Digital-, Data- and AI Literacy all three have intersections with each other.

# AI LITERACY

## COMPETENCIES & DESIGN CONSIDERATIONS

### WHAT IS AI?

#### COMPETENCIES

1. Recognizing AI
2. Understanding Intelligence
3. Interdisciplinarity
4. General vs. Narrow

### WHAT CAN AI DO?

#### COMPETENCIES

5. AI's Strengths & Weaknesses
6. Imagine Future AI

### HOW DOES AI WORK?

#### COMPETENCIES

7. Representations
8. Decision-Making
9. Explainability
10. ML Steps
11. Data Literacy
12. Learning from Data
13. Critically Interpreting Data
14. Action & Reaction
15. Sensors

#### DESIGN CONSIDERATIONS

1. Explainability
2. Embodied Interactions
3. Contextualizing Data

### WHAT SHOULD AI DO?

#### COMPETENCIES

16. Ethics

### HOW DO PEOPLE PERCEIVE AI?

#### COMPETENCIES

17. Programmability

#### DESIGN CONSIDERATIONS

4. Promote Transparency
5. Unveil Gradually
6. Opportunities to Program
7. Milestones
8. Critical Thinking
9. Culture
10. Support for Parents
11. Social Interaction
12. Leverage Learners' Interests
13. Acknowledge Preconceptions
14. New Perspectives
15. Low Barrier to Entry

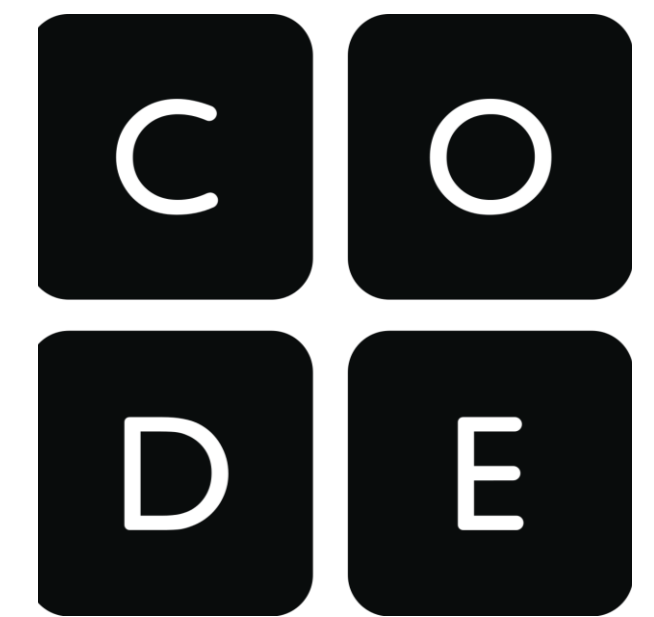
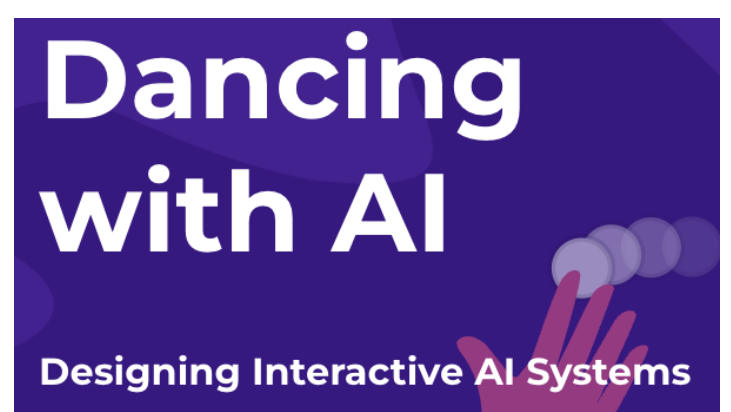
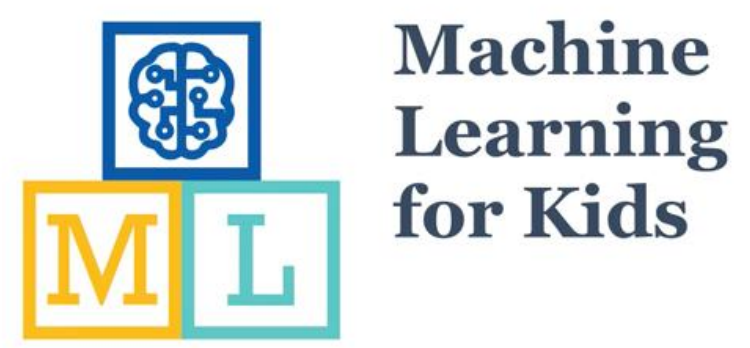
Watch the conference presentation on AI literacy



<http://www.durilong.com/>

A screenshot of a video presentation slide. The slide has a blue background with white and yellow text. At the top right, there is a logo for 'EXPRESSIVE MACHINERY LAB' and the 'Georgia Tech College of Computing' logo. The main title is 'What is AI Literacy? Competencies and Design Considerations' in large yellow and white font. Below the title is a white horizontal line and the authors' names 'Duri Long &amp; Brian Magerko'. In the bottom left corner, there is a small circular video feed showing a woman speaking, with standard video control icons (mute, close, pause, play) below it.

Duri Long and Brian Magerko. 2020. What is AI Literacy? Competencies and Design Considerations. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–16. <https://doi.org/10.1145/3313831.3376727>

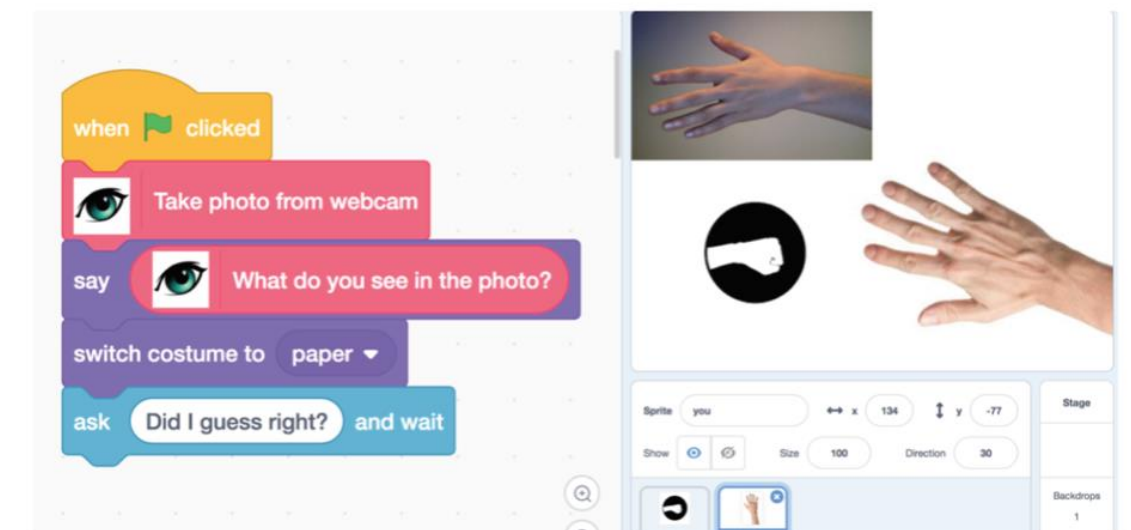




## ml5.js - Friendly Machine Learning for the Web



WolframAlpha®



Tinkering and coding AI with [cognimates.me](https://cognimates.me)





**Existing tools  
are either too  
simple or too**

**complex.** Most inappropriately tools mix ML and regular programming, something to avoid with younger age groups and which detracts from the project goals.

# Complete ML workflow is needed

There is a need for a ML education tool that has very low barrier of entry and yet covers the complete machine learning workflow from data collection and labeling to a working "app."  
(manuscript)



The learning tool was designed to provide a low barrier of entry for teaching the key concepts in classification to novice learners

Table 1. Key concepts in the design of application

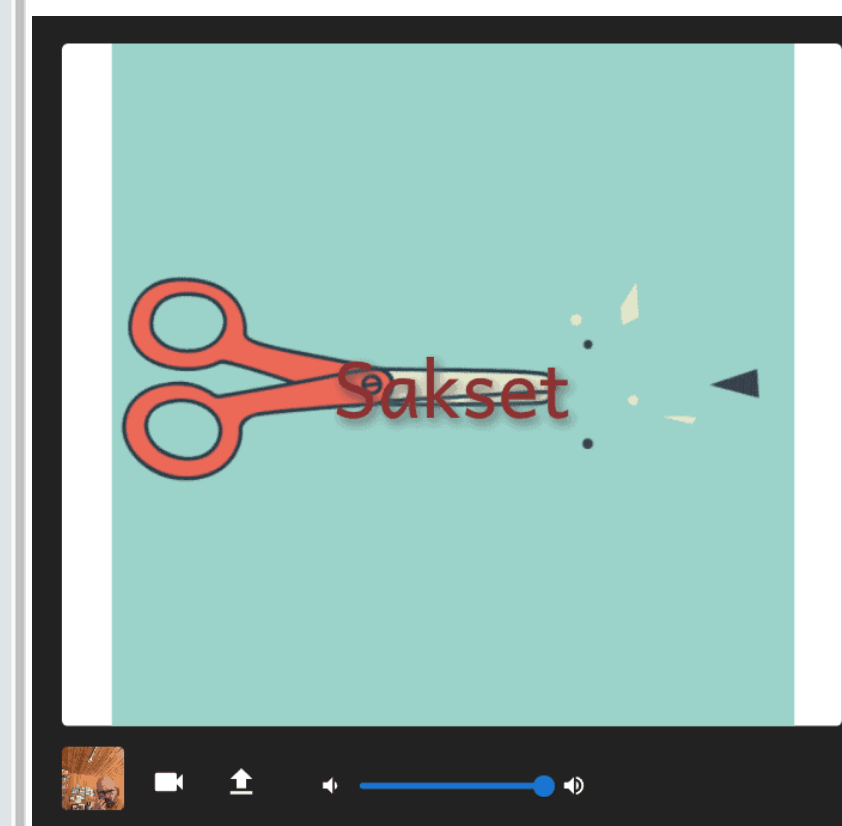
Concept	Description
Classifier	A piece of software that can sort inputs into a number of named (labeled) classes
Class	A named group of things that belong together
Name (class)	A name for a group of things that belong together (“name” is used for familiarity instead of the more common “label”)
Example	Making the classifier work well needs many examples of things in each class (“example” is used for familiarity instead of the more common “sample”)
Training data	All the examples in each named class that are used to train the classifier
Training	Once all classes are populated with training data, the learner asks the NTM tool to train the classifier
Input	A trained classifier perceives the world through one input (webcam)
Confidence	For each input the classifier reports how confident it is about the input belonging to each class (on a scale 0%..100%)
Actions	Learners can define actions (behaviors) to each class that are triggered by highest confidence score (e.g., show a picture, play a sound, show a piece of text)
Output	The combination of class-linked actions triggered at each time by the classifier’s highest confidence score
Deployment	Once the classifier is tested and actions defined, learners can deploy their application (make it appear like a standalone “app” in a new browser tab)

New ideas compared to other classifiers

Other classifiers (especially Google Teachable Machine)

GenAI Teachable Machine (Our classifier)

The screenshot displays the GenAI Teachable Machine interface. On the left, there are three class categories: 'Sakset 2' (26 images), 'Paperi' (12 images), and 'Kivi' (21 images). Each category has a 'Webkamera' and 'Lataa' button. In the center, the 'Opettaminen' (Training) section shows a 'Luokittelija' (Classifier) with progress bars for 'Tyhjä' (0%), 'Sakset 2' (92%), 'Paperi' (1%), and 'Kivi' (1%). A 'Luokittelija opetettu' (Classifier trained) status is also visible. On the right, the 'Tulos' (Result) section shows a video player with a red scissors icon and the word 'Sakset' overlaid on a teal background. Below the video player, there are three deployment options: 'Sakset 2', 'Paperi', and 'Kivi', each with a 'Teksti' (Text) input field and a 'Deploy' button.



Concept	Description
Classifier	A piece of software that can sort inputs into a number of named (labeled) classes
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Competencies for AI literacy which apply in our Teachable Machine

*Competency 10:* Machine Learning Steps.

*Competencies 11–13:* The role and impact of data.

*Competency 14:* An ability to act and react to the world.

*Competency 16:* Ethics, including bias and privacy.

*Competency 17:* Programmability or trainability.

Whole list of the competencies: Long & Magerko, 2020

### Opetusdata

Tyhjä

12 kuvaa

Webkamera Lataa

Sakset 2

26 kuvaa

Webkamera Lataa

Paperi

12 kuvaa

Webkamera Lataa

Kivi

11 kuvaa

Webkamera Lataa

Lisää luokka

### Opettaminen

Opetta luokittelija

Luokittelija opetettu

### Syöte

Päällä

Webkamera Tiedosto



### Luokittelija

Tyhjä	0%
Sakset 2	92%
Paperi	5%
Kivi	2%

### Tyhjä

Teksti

tyhjä

A+ A-

### Sakset 2

Teksti

Sakset

A+ A-

### Paperi

Teksti

Paperi

A+ A-

### Kivi

Teksti

Kivi

A+ A-

### Tulos



# AI LITERACY

## COMPETENCIES & DESIGN CONSIDERATIONS

### WHAT IS AI?

#### COMPETENCIES

1. Recognizing AI
2. Understanding Intelligence
3. Interdisciplinarity
4. General vs. Narrow

### WHAT CAN AI DO?

#### COMPETENCIES

5. AI's Strengths & Weaknesses
6. Imagine Future AI

### HOW DOES AI WORK?

#### COMPETENCIES

7. Representations
8. Decision-Making
9. Explainability
10. ML Steps
11. Data Literacy
12. Learning from Data
13. Critically Interpreting Data
14. Action & Reaction
15. Sensors

#### DESIGN CONSIDERATIONS

1. Explainability
2. Embodied Interactions
3. Contextualizing Data

### WHAT SHOULD AI DO?

#### COMPETENCIES

16. Ethics

### HOW DO PEOPLE PERCEIVE AI?

#### COMPETENCIES

17. Programmability

#### DESIGN CONSIDERATIONS

4. Promote Transparency
5. Unveil Gradually
6. Opportunities to Program
7. Milestones
8. Critical Thinking
9. Culture
10. Support for Parents
11. Social Interaction
12. Leverage Learners' Interests
13. Acknowledge Preconceptions
14. New Perspectives
15. Low Barrier to Entry

# GenAI teachable machine operates locally!

Interface component library called *Material UI* was used since it has been designed based upon extensive usability research

The entire application is a front-end only application which **operates locally within the browser**.

No integrations with other online services, such as Google Drive  
It allows us to avoid any use of cookies and helps to remove any uncertainty regarding what happens with a users data.

The screenshot displays the 'GenAI kuvien luokittelija' application interface. A prominent yellow banner in the center reads '100% Responsive'. The interface is divided into several sections:

- Opetusdata:** A list of training classes: 'Tyhjä' (12 images), 'Sakset 2' (26 images), 'Paperi' (12 images), and 'Kivi' (21 images). Each class has 'Webkamera' and 'Lataa' buttons.
- Opettaminen:** A central panel with a 'Päällä' toggle, a 'Webkamera' view showing a hand, and a 'Tiedosto' view. It includes a 'Opeta luokittelija' button and a 'Luokittelija opetettu' status indicator.
- Luokittelija:** A progress bar showing classification accuracy: Tyhjä (0%), Sakset 2 (92%), Paperi (5%), and Kivi (2%).
- Output:** A 'Tulos' window showing a classification result for 'Sakset' with a red scissors icon and a 'Deploy' button.

ISSUE: There has been little or no assessment or evaluation of learning for ML beyond simple quizzes. (Wangenheim, Alves, Rauber, Hauck & Yeter, 2002)

SOLUTION: We have 20+ schools in Cities of Oulu and Joensuu who integrate ML in their lessons (and are part of our research) => publications coming

*Christiane Gresse Von Wangenheim, Nathalia Da Cruz Alves, Marcelo F. Rauber, Jean C.R. Hauck, and Ibrahim H. Yeter. 2022. A Proposal for Performance-based Assessment of the Learning of Machine Learning Concepts and Practices in K-12. Informatics in Education 21 (2022), 479–500. Issue 3. <https://doi.org/10.15388/infedu.2022.18>*





Example of supervised machine learning (in real life)





You can use  
our tool(s) for  
free

**GenAI Teachable Machine:**  
<https://tm.generation-ai-stn.fi>

The screenshot displays the Teachable Machine interface, which is divided into several sections:

- Training Data:** A list of four classes with their respective image samples and sample counts:
  - Random cats from Pixabay:** 14 image samples
  - Random dogs from Pixabay:** 16 image samples
  - Me, myself & I here in Turku:** 17 image samples
  - Empty lecture hall:** 8 image samples
- Training:** A central panel showing the training progress. It includes a "Train classifier" button and a "Training complete" status indicator.
- Input:** A panel with a "Webcam" and "File" tab. The "Webcam" tab is active, showing a live video feed of a person.
- Classifier:** A panel showing the classification results for each class. The "Me, myself & I here in Turku" class is classified with 100% accuracy, while the other classes are at 0%.
- Actions:** A panel with four action cards, each corresponding to a class in the training data. Each card has a "Message" field and a "Loop" toggle. The "Random cats from Pixabay" card has a message of "cats", the "Random dogs from Pixabay" card has a message of "dogs", the "Me, myself & I here in Turku" card has a message of "me", and the "Empty lecture hall" card has a message of "Empty lecture hall".

# New tools are in the progress

- Data is key concept for all the following tools and interventions
- Next steps (privacy, security, how social media works, how classifiers work, how echo chambers form, etc.) need some of the key concepts taught with GenAI classifier (current tool)
- Next one is Social Media simulator





Thank you!

<https://generation-ai-stn.fi> (also in english)



# Workshop results and discussions

# Morning workshops

**NEETs:** Relate to the individual, don't judge, offer client-centered services, and build trust.

**Basic skills:** It helps if you are motivated & it helps if you feel you belong to the society"

**ESL:** With different kind of systems we end up with same kind of problems.

**School attendance:** Teachers play a pivotal role in noticing changes in a student's school attendance. Positive interaction and everyday encounters are the beginning of functional relationships at school. Furthermore, we need high-quality information related to student well-being and collaboration with families. Let's take care of our students, together!

**Segregation:** There is a need for more resources to combat school segregation, but the main question is how to time and allocate the right measures as efficiently as possible.

**Mental Health:**

# Afternoon workshops

**FLE:** Question mark. Balance. Responsibility. Relations. Safe. future learning environment could increase the equality of schools.

**Digital solutions:** One platform will develop cooperation and equality

**STEAM:** STEAM learning is for everyone – it engages all.

**Research education:** Increasing teaching in the scientific method allows students to understand how science works while promoting deep learning.

**Networking:** Transnational projects permit mutual learning, inspiration, reflection for improving education, but they also require, investment, openness and long-term vision.

**AI:** AI is not an enemy, AI is cognitive tool and a workmate

# End of the day

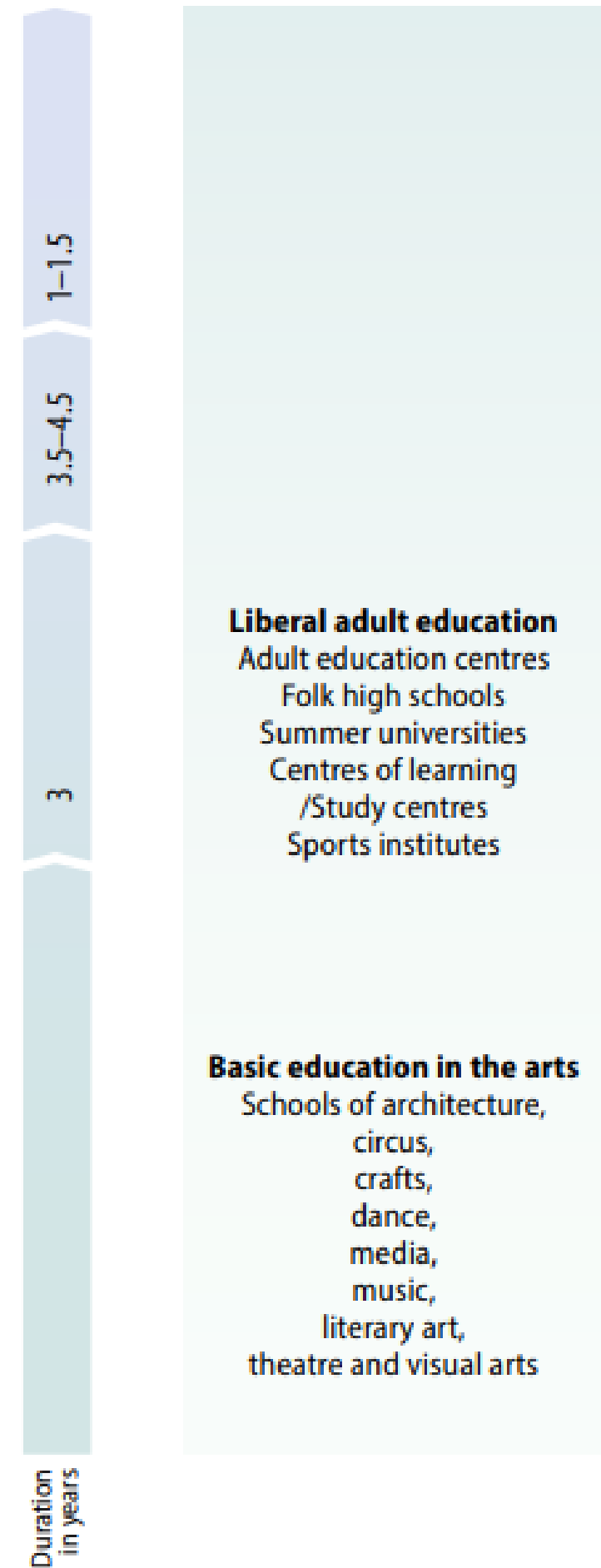
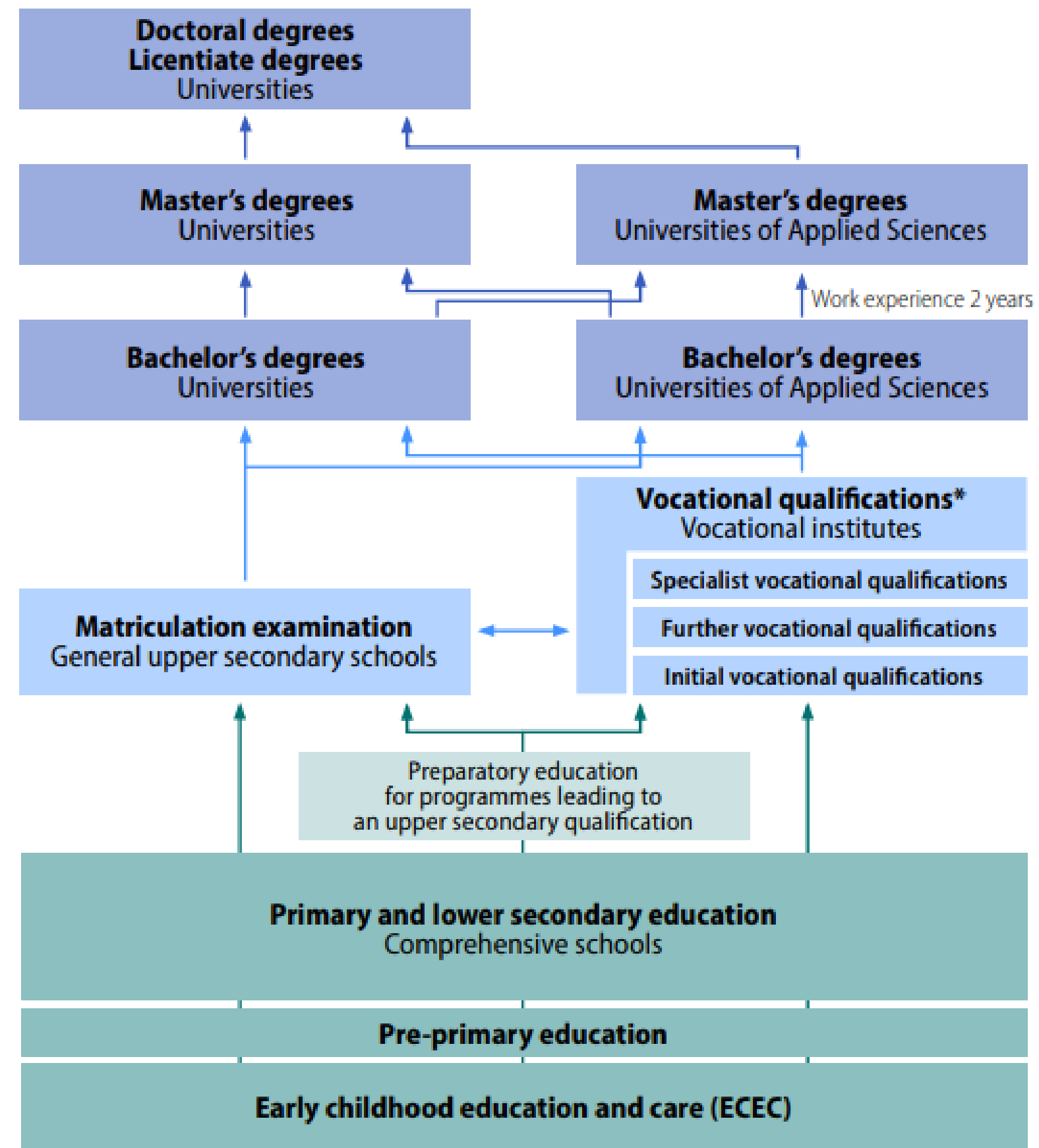
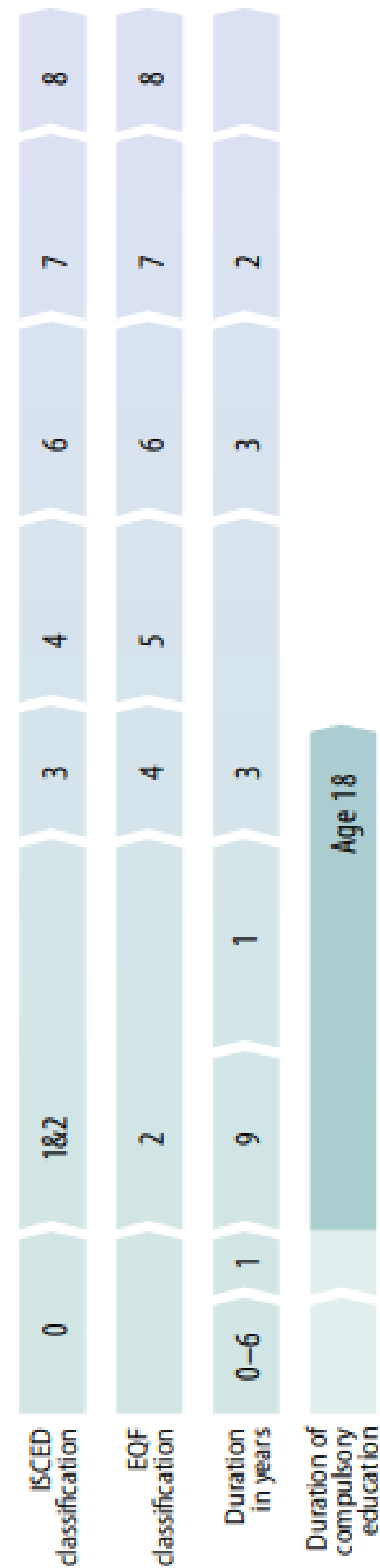


# EDUCATION SYSTEM IN FINLAND

Jaana Kilpinen



# EDUCATION SYSTEM IN FINLAND



\* Also available as apprenticeship training or by training agreement.

# Early childhood education supports children's development and learning

- Early childhood education and care comprises education, care and upbringing (“**Educare**”) which supports children’s balanced growth, development and learning
- Every child has a subjective right to attend early childhood education after the end of parental leave if the family so wishes.
- Municipalities are responsible for organising ECEC according to local demand.
- It can take place at early education centres, smaller family day care groups or in so-called open ECEC services.
- Group sizes of child day care have not been set, but the number of children is in proportion to the number of staff (7 children over 3 years/adult, 4 children under 3 years/adult)
- Client fees for day care are calculated according to the family's size and income, day care may also be provided free of charge

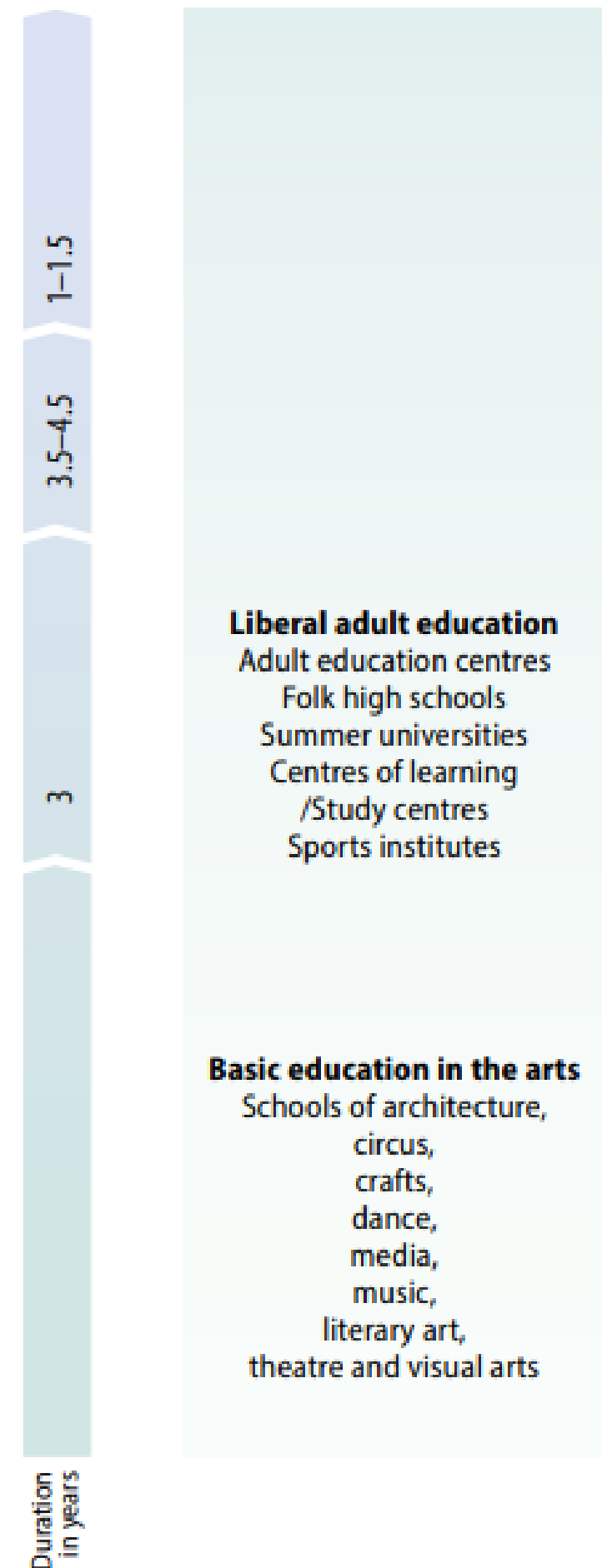
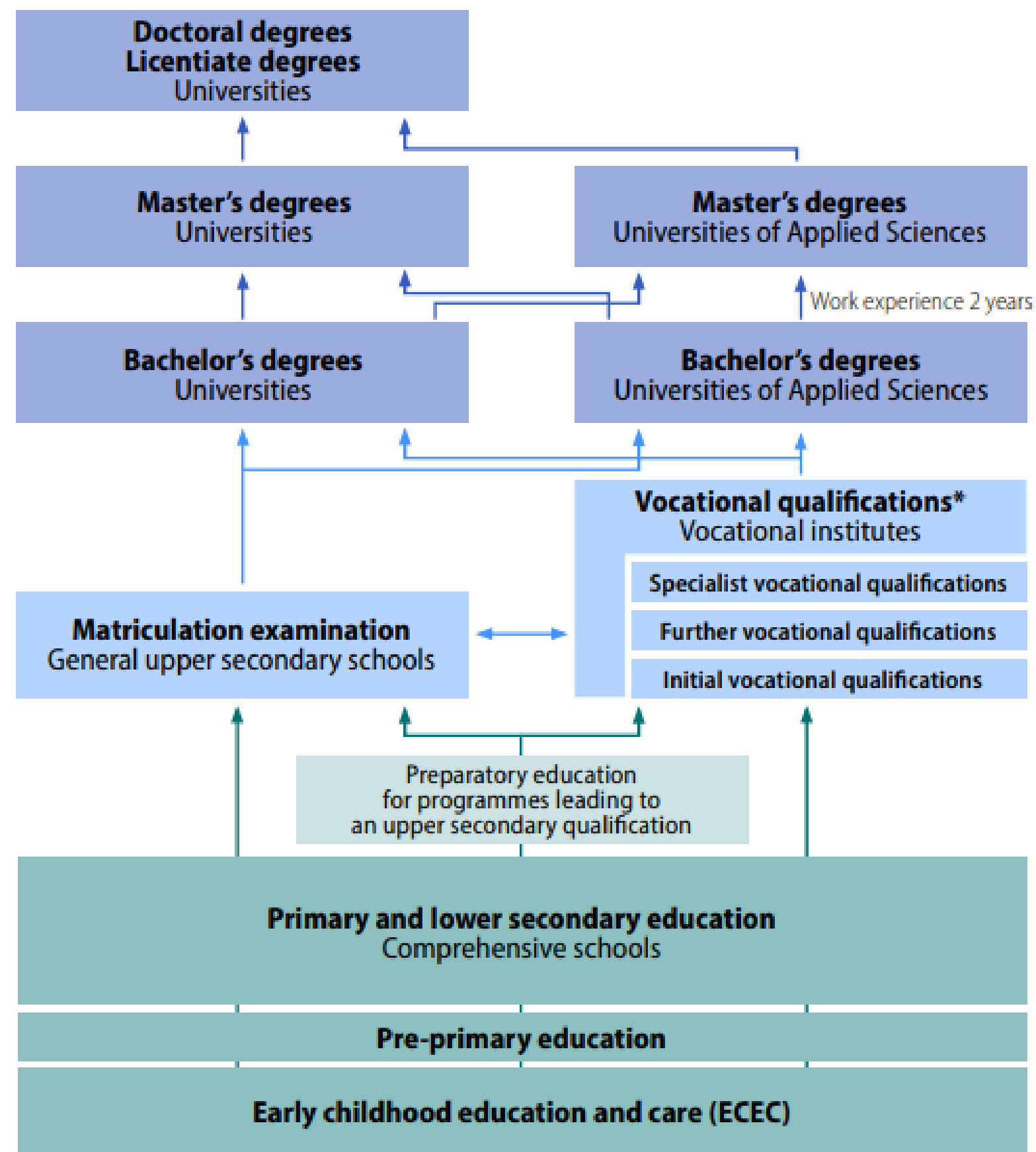
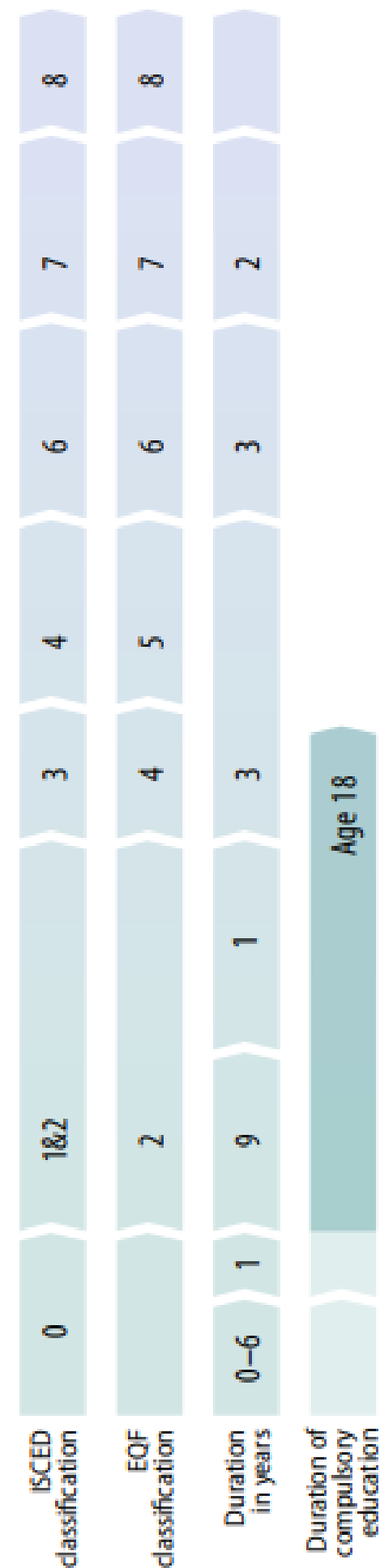


# Pre-primary education

- Pre-primary education is compulsory for children aged 6.
- At the pre-primary level children adopt basic skills, knowledge and capabilities from different learning areas in accordance with their age and abilities.
- Learning through play is essential.
- Pre-primary education is provided both in early education centres and in schools for free
- Teachers in pre-primary education have completed a Bachelor`s degree with specialization in early childhood education or a Polytechnic Bachelor's Degree in Social and Health Care



# EDUCATION SYSTEM IN FINLAND



\* Also available as apprenticeship training or by training agreement.

# Primary and lower secondary education is provided in comprehensive schools

- Children start the school at the age on 7.
- Primary and lower secondary education is provided within a single structure that lasts nine years (ages 7-16, grades 1–9)
- All basic education schools follow local curricula, which is based on the national core curriculum
- Local authorities assign a school place to each pupil close to their homes
  - Parents are also free to apply for a place in another school of their preference, where the pupil can start if there is room for them.
  - Children generally travel to school independently



# Schooldays are generally short

- The school year consists of 190 days between mid-August and the beginning of June.
- The minimum number of lessons per week varies from 20 to 30, depending on the year-class and the number of optional subjects taken.
- Daily and weekly timetables are decided in the schools.
- Homework *does* exist, just like in other education systems
- There are afternoon activities organized for 1<sup>st</sup> and 2<sup>nd</sup> graders after school
- Instruction is usually given by the same class teacher in most subjects in the first six year-classes, and by different subject specialists in the last three years

Obs! Total number of school hours during 9 years of basic education is well over 10 % below OECD average!



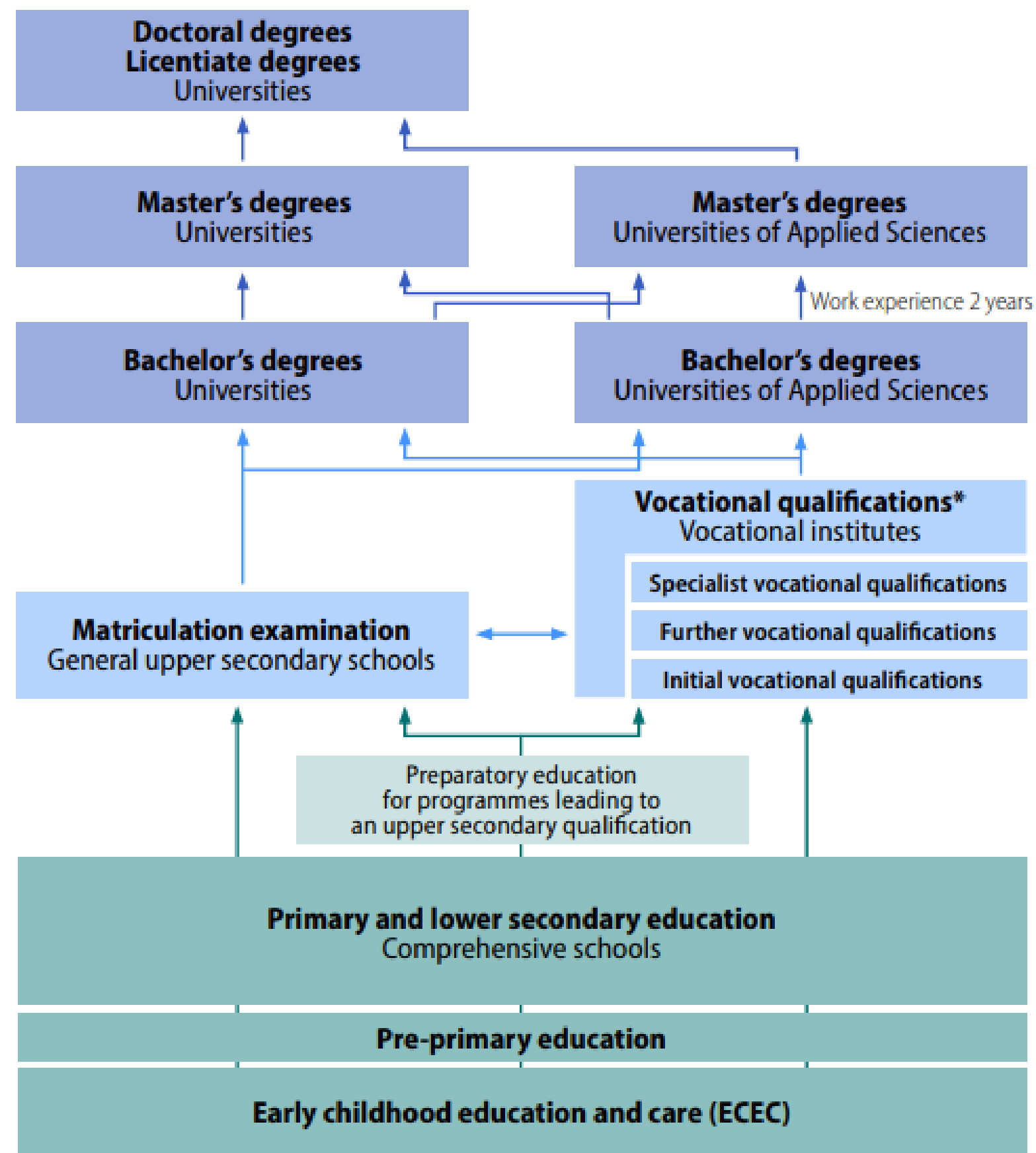
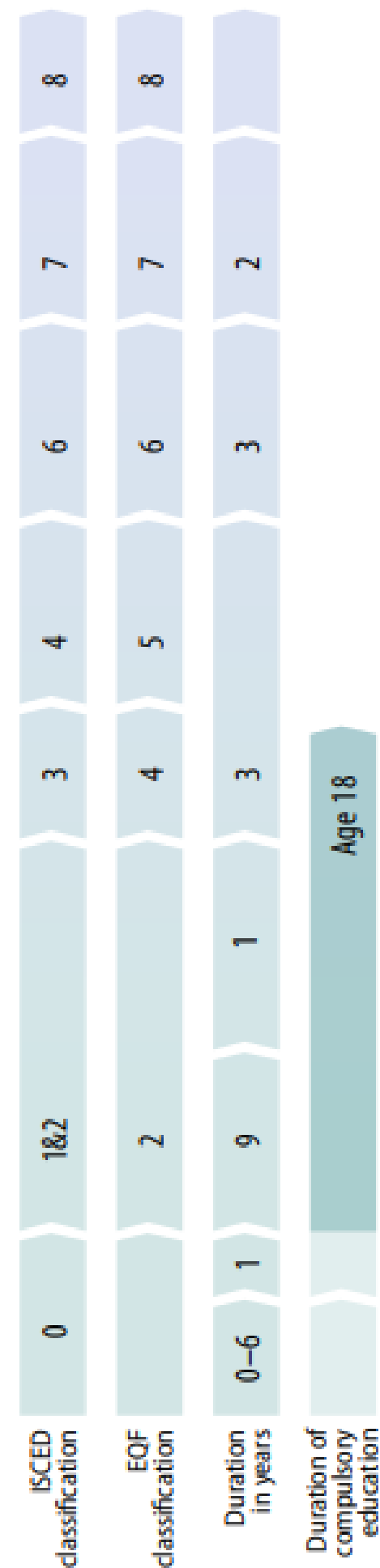
# Highly educated teachers

- Teachers in the six years of primary education (grades 1-6) are usually generalist class teachers (a master's degree in education)
- Teachers in the three years of lower secondary education (grades 7-9) have completed a master's degree in the subject they teach as well as pedagogical studies.
- There are no national tests in the end of primary and lower secondary education
- To be able to progress to further studies, you must have completed primary and lower secondary (compulsory) education.





# EDUCATION SYSTEM IN FINLAND



\* Also available as apprenticeship training or by training agreement.

# A preparatory education (TUVA education) – a year of extra support

- TUVA education for the transition from lower secondary to upper secondary education provides students with the necessary knowledge, skills and abilities to apply for an upper secondary qualification.
- TUVA is not compulsory; it is designed to provide an extra support
  - for pupils of compulsory education age
  - for students with immigrant background
  - for those adult learners, who are lacking the upper secondary qualification.
- The training lasts for a maximum of one year.
- Gives students more time to think about their further studies and career choices.



# General upper secondary education is flexibly organised

- Is designed to last 3 years, but students may complete it in 2 to 4 years.
- Instruction is organized in modular form that is not tied to year-classes, and students can decide on their individual study schedules rather freely.
- When a student has achieved the required number of credits from compulsory and elective studies, they receive a general upper secondary school certificate.
- Aiming at upper secondary certificate and matriculation examination
- Teachers at upper secondary level have completed a Master's degree in the subject and pedagogical studies.

Obs! In Turku there are some upper secondary schools which have special fields in for sport, theatre, ICT, music and natural sciences. Also, there is a marine-oriented programme available.



# First national examination at the end of general upper secondary education

- General upper secondary education ends with a national matriculation examination (first and only national examination in the Finnish education system)
- It includes 5 compulsory tests: mother tongue and according to the choice of each candidate, 4 of the following: the second national language, a foreign language, mathematics, or one subject in general studies such as humanities and natural sciences.
- Provides a qualification for academic studies



# Finnish vocational qualification is competence-based

- Completing a vocational qualification does not depend on where competences have been acquired or whether they have been acquired through studies, work experience, or other activities.
- Studies are based on a personal competence development plan made for each student.
- The plan recognises the students' existing skills, outlines what kind of competences they still need for the qualification and explains how to acquire them – by studying in a vocational school or by learning in a workplace.
- The plan includes both compulsory and optional study modules.



# Vocational education in cooperation with the working life

- Vocational education and training covers 8 fields of education and more than 150 vocational upper secondary and further and specialist vocational qualifications
- The nominal duration of vocational qualifications is 3 years but can vary depending on the individual personal competence development plan.
- Each qualification includes workplace learning.
- Representatives of working life and businesses play an important role in planning, implementing and assessing vocational qualifications.



# Vocational education in cooperation with the working life

- The same set of principles to young people completing their first qualification as well as to adults who supplement or update their skills or change fields.
- Three levels of competence-based qualifications: vocational qualifications, further vocational qualifications and specialist vocational qualifications.
- Vocational teachers are generally required to have an applicable university or university of applied sciences degree, or the highest possible qualification in their own vocational field. In addition, at least 3 years of work experience in the field and pedagogical studies are required.



Obs! Approximately 10,000 students study at Turku Vocational Institute every year

# Basic features of the Finnish education system





# Basic Features

- **All 6–18-yearolds participate in pre-primary, primary and lower secondary and upper secondary education.**
- **Education is free of charge at all levels**, all the way from pre-primary to higher education
- **Schools are publicly funded**, there are no tuition fees
  - Responsibility for educational funding is divided between the state and the local authorities.
  - The municipality can decide independently how the funds are allocated.



# Basic Features

- **Equal opportunities**

- All people must have equal access to high-quality education and training.
- All citizens should have the same educational opportunities irrespective of their background
- Finland has a high-quality library system and students can borrow the necessary textbooks from libraries.
- There is a well-developed system of study grants, living subsidies and loans.
- Financial aid can be awarded for full-time study in upper secondary schools, vocational institutions or institutions of higher education.



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# Basic Features

- **Educational guidance and support is available for all**
  - The purpose of guidance and counselling is to support, help and guide pupils and students so that they can all perform as well as possible in their studies
  - the right to receive support for learning, development and wellbeing according to the needs.
  - Special education is given in connection with mainstream education whenever possible
  - Focus on early intervention to tackle problems before they get serious



# The support has three levels

- **General support**

- Every pupil has the right to sufficient support for learning and attending school
- Guidance and support as part of the everyday activities of the school.

- **Intensified support**

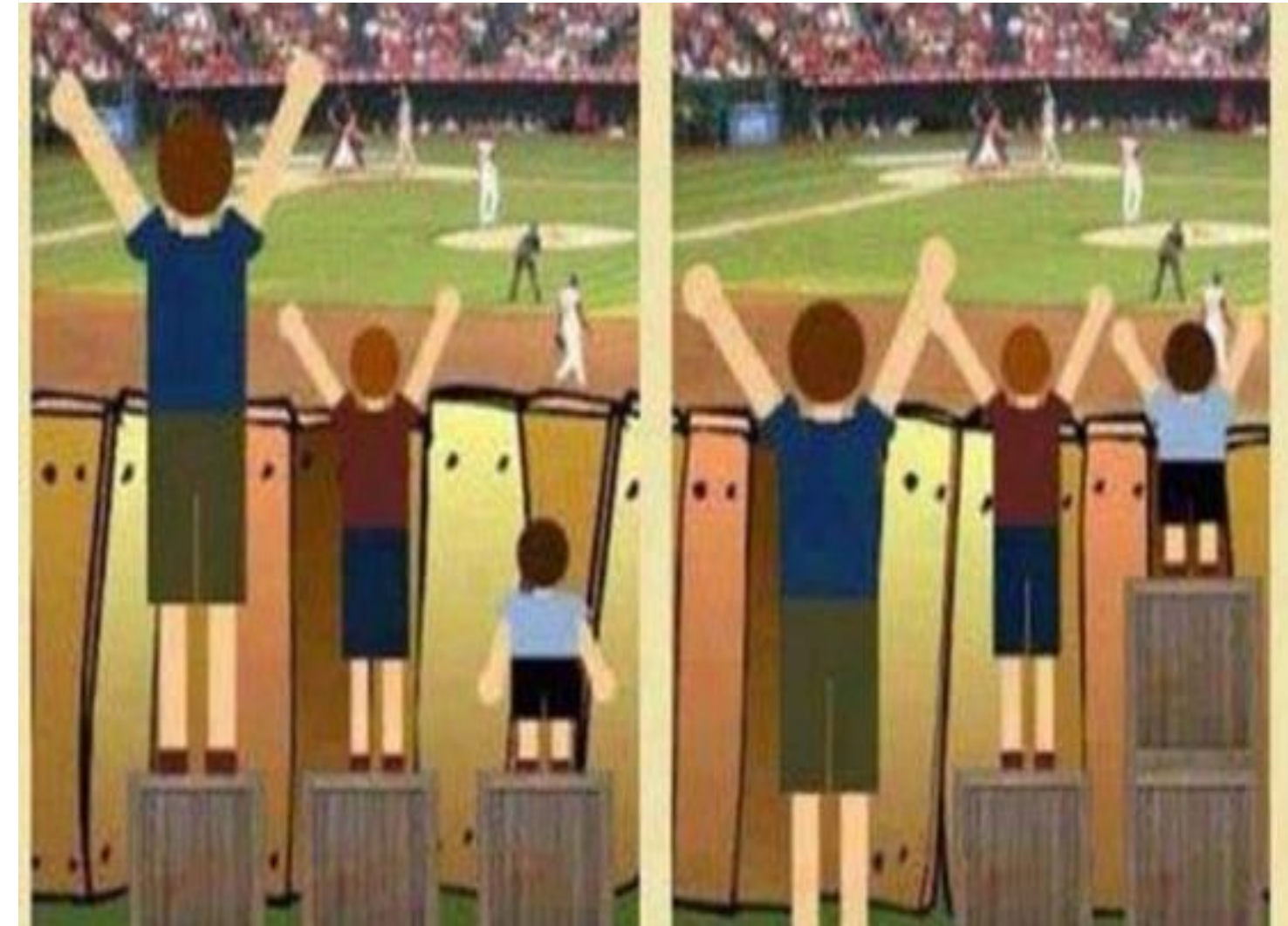
- Intensified support is more robust and consistent than general support. The aim is to prevent problems from accumulating and becoming more serious or complex.
- **Pedagogical assessment and a plan for intensified support** is made in the pupil welfare group of the school.

- **Special support**

- All available support measures can be used. The main purpose is to provide pupils broad based and systematic help so that they can continue to upper secondary level.



- **An official decision about special support and an individual education plan** is drawn up in co-operation with the teachers and the school welfare group



# Basic Features

- **The right to student welfare services**
  - In addition to **free school meals** as well as **free school transportation for those living far from school** also **healthcare and welfare services are free** for all pupils and students in pre-primary, primary, lower secondary and upper secondary education.
  - School nurses, dentists, school psychologists and social workers are available through schools.

Obs! in primary and secondary education, one warm meal without charge per day has been guaranteed by law since 1948.



# Basic Features

- **Efforts are made for supporting language minorities and migrants**
  - Finland has two official languages, Finnish and Swedish. Both language groups have their own educational institutions at all levels
  - Approximately 6 % of students in primary and lower secondary education and upper secondary education attend a school where Swedish is the language of instruction.
  - Local authorities must also provide pre-primary, primary and lower secondary education in the Sámi language in Sámi-speaking areas of Lapland, the northernmost part of Finland.
  - Second language instruction is provided for pupils who do not know the language of instruction well enough to function as an equal member of the school community in daily interaction.
  - Education providers can also organise preparatory education for migrants to enable them to enter primary and lower secondary, upper secondary or higher education.



# Basic Features

- **Highly educated teachers**

- Teacher education is highly respected and popular in Finland.

- **Educational autonomy is high at all levels**

- The national core curriculum contains the objectives and core contents of subjects – this leaves room for local education authorities to organise teaching in the best way suited to local circumstances.

- The teachers have pedagogical autonomy. They can decide themselves which teaching methods and learning materials to use and have extensive freedom in developing their own work.

- Education providers are responsible for practical teaching arrangements as well as the effectiveness and quality of its education.





# Basic Features

- **Assessment is part of daily schoolwork**
  - The main types of pupil assessments are continuous assessment during studies (formative assessment) and final assessment (summative assessment).
  - Each pupil receives a school certificate at least once every school year.
  - There are no national tests for pupils in primary and lower secondary education in Finland.
- **Quality assurance is based on steering instead of controlling**
  - No school inspections, no national level testing in basic education.
  - The matriculation examination at the end of general upper secondary education is the only national level test in the system.
  - The aim has been to steer through information, support and funding.
  - The system relies on the skills and expertise of teachers and other personnel



# Basic Features

- **No dead ends**

- Students can always continue their studies on any level of education in spite of whatever choices they have made earlier as long as they meet the admission requirements of the level in question.

- **Lifelong education in focus**

- The practice of recognition of prior learning has been developed in order to avoid unnecessary overlapping of studies.
- Efforts are made to ensure smooth transition from one level of education to another.
- A long history of participation in and promotion of adult education. Aim is to extend working life, raise the employment rate and improve productivity
- Efforts have been made to make the system as flexible as possible to enable adults to study alongside work.
- Various forms of continuing education such as open university and open university of applied sciences education.



# Professional and scientific higher education

- Completion of the Finnish matriculation examination or a vocational upper secondary qualification gives general eligibility for higher education.
- Offered by universities and universities of applied sciences (UAS, “polytechnics”)
- Universities emphasise scientific research and instruction, while UASs have a more practical approach.
- There is restricted entry to all fields of study. Most students are selected based on the success in their previous studies or in an entrance test.
- Teachers at universities of applied sciences are required to have either a master’s or a post-graduate licentiate’s degree, depending on their position. They must also complete pedagogical studies. University teachers are generally required to hold a doctoral or other postgraduate degree.



# Studying at university

- At universities, students can study for bachelor's and master's degrees, as well as scientific or artistic postgraduate degrees (licentiate and doctorate degrees).
- In the three-cycle degree system students first complete a bachelor's degree, after which they may go for a master's degree.
- Students are admitted to study for a master's degree with the same application as the bachelor's degree.
- The extent of a university degree is usually 300 ECTS credits (European Credit Transfer and Accumulation System) consisting of a bachelor's degree of 180 ECTS and a master's degree of 120 ECTS.
- The target time for completing a master's degree is usually 5 years, the average duration for completing a master's degree in Finland is longer than 5 years.





# Universities of applied sciences provide students with practical professional skills

- Higher education aiming for practical professional skills (e.g. engineering, nursing, business), often a strong regional development role
- Most students aim for a Bachelor's degree (ca. 3 years)
- UAS Master's degrees available after 3 years of professional work experience, no doctoral degrees
- All bachelor's degrees include practical on-the-job learning.
- Typically, UAS students complete a bachelor's degree but master's degrees have become more popular over the last years.



# Adult education is very popular in Finland

- Liberal adult education institutions provide non-formal grassroots education and continuous learning for all residents in Finland
- The institutions offer studies in civic skills, social studies, general and vocational studies, and studies for hobby-based or interest-based information and skills acquisition.
- The goal of instruction is to promote versatile personal development, social cohesion, equality and active citizenship

Obs! In Turku there are over 14 000 students yearly and the largest subject groups are languages, craft, and fine arts.



# HISTORY OF BORE

Pia Ruoho





#### History of S/S Bore in a nutshell

- Built in year 1960 in Oskarshamn / Sweden
- Operated as a passenger ship mainly on route Turku – Stockholm – Turku until year 1976. It was the first ship, where cars could be driven to the ship. Before that cars were shipped with cranes.
- 1977 – 1987 ship operated different routes in the Baltic Sea
- Year 1987 Kristina Cruises bought the ship and altered the name to M/S Kristina Regina. The steam engines were replaced by diesel engines.
- M/S Kristina Regina made many cruises between years 1987 – 2010. They were made for example in Baltic Sea, Atlantic Ocean, Mediterranean and Red Sea in 40 different countries and 216 harbours.

Pictures from M/S Kristiina Regina



- Length 99,83 m ( Icon of the Seas, 365 m )
- Width 15,25 m
- Draught 5,5 m
- Maximum speed 16 knots, cruising speed 14 knots (M/S Kristina Regina)
- 130 cabins (second largest hostel in Finland), beds for approx. 250 persons

- Restaurant and conference facilities:

- Baltic hall 120 persons
- Restaurant Kristina 130 persons
- A la carte Kotka 70 persons
- Manouver & Anchor Bar 150 persons
- Cafe Navigare 40 persons
- Regina conference 12 persons
- Oskarshamn conference 5 persons

### S/S Bore as a learning environment

- Students can practise their skills in real life situations. S/S Bore gives wide possibilities for this purpose almost in every curriculum.
- Also different projects can be planned and fulfilled using Bore
- Turku Vocational Institute operates different functions on the ship: hostel, restaurant and conference. There are instructors always working and they will guide students in different departments. Teachers will also be guiding the students.
- S/S Bore is open all around year and 24/7 basis. The students are not working by their own, there is always also an instructor.
- Turku Vocational Institute does not own the ship, we have rented the facilities needed for the service.
- Sea museum Forum Marinum is functioning on the ship, because the upper deck is one part of their exhibition. For example former crew cabins and command bridge belong to the museum.

#### Student projects at Bore

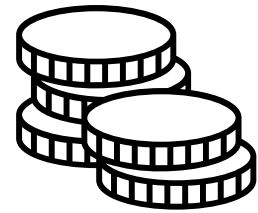
- Hotel-, restaurant- and catering –students have worked in different departments and in hostel reception. They have also done some projects for different customers.
- Tourism students have planned presentations for visiting groups
- Housekeeping students have done different cleaning duties
- Bartender students have planned functions in Manouver bar
- IT students have planned and constructed working Wi-Fi network to the whole ship
- Business students have prepared a presentation of the ship, which is available in hostel lobby
- Child care students have planned some activities for families during open door days

- Bore operates as a supporting service for Turku Vocational Institute
- Hostel operations do not compete with the hotel business in Turku, because the customer segment is different
- The main target for S/S Bore is not to achieve big profits, rather than offer wide learning possibilities with real customer for our students
- S/S Bore has still to operate affordably, so that we can have this service in the future

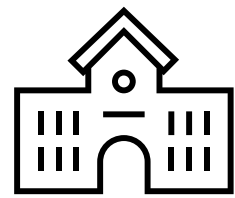
# Sustainable Future project

Sanna Paloposki

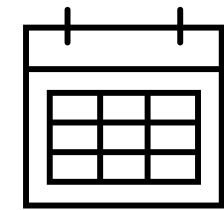
# Professionals for Sustainable Future project



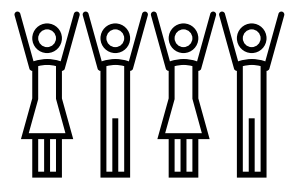
560 k€,  
funded by the Finnish National Agency for Education



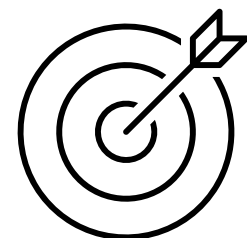
Vocational schools of Turku, Helsinki, Kajaani, Tampere and Vantaa



2 years: 16.12.2021–31.12.2023



In Turku: Project manager and 15 teachers



Aiming to improve the sustainability of VET





# Future Turku mobile game

## **What?**

- AR-game about sustainable development
- 2 km route in S/S Bore and its surroundings
- 10 questions/tasks
- 90 min time limit

## **For whom?**

- Anyone who has downloaded the Åppi-app can play
- Especially planned for students in Turku Vocational Institute (TAI)

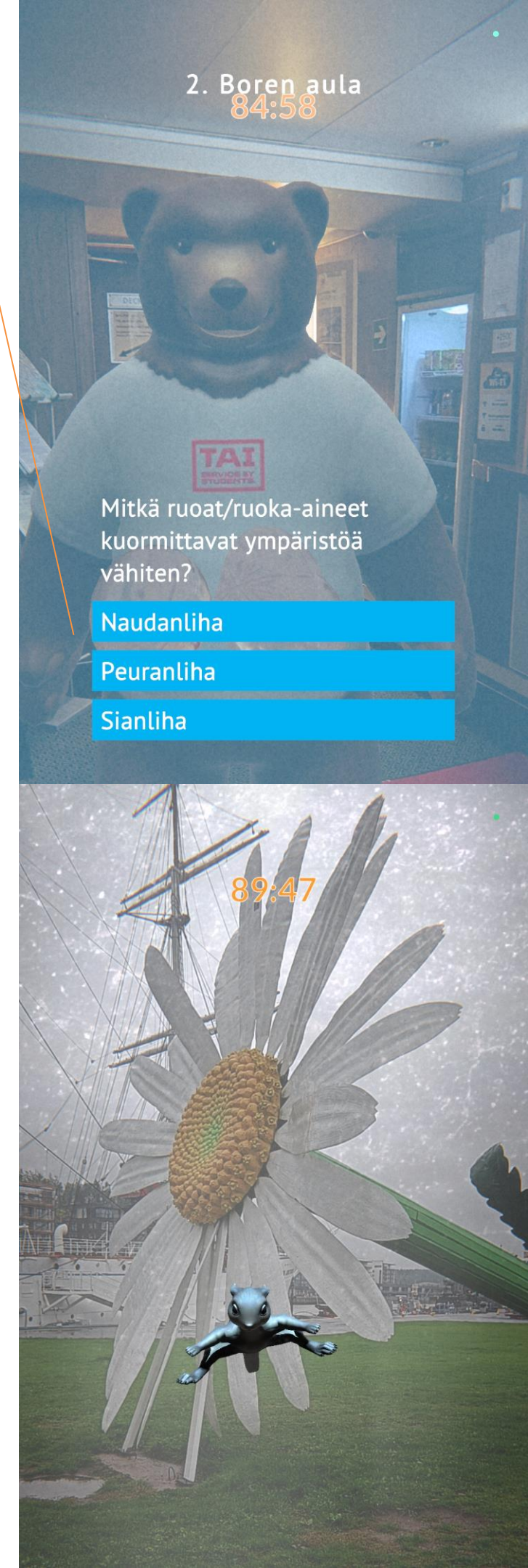
## **By whom?**

- Developed by two health care teachers at TAI
- Group of students have decorated a cabin in S/S Bore for the game as their final assignment

# Future Turku mobile game

- Players try to save future Turku from an environmental catastrophe by completing tasks addressing several environmental issues:
  - food waste and environmental effects of the food chain
  - waste management
  - energy consumption
  - transport
  - endangered species etc.
- *Lola* the flying squirrel guides the players through the game

Which food has the smallest environmental effect?  
Beef/venison/pork



# Basis of the game: Palmer's tree model of environmental education\*

## 1. education about the environment

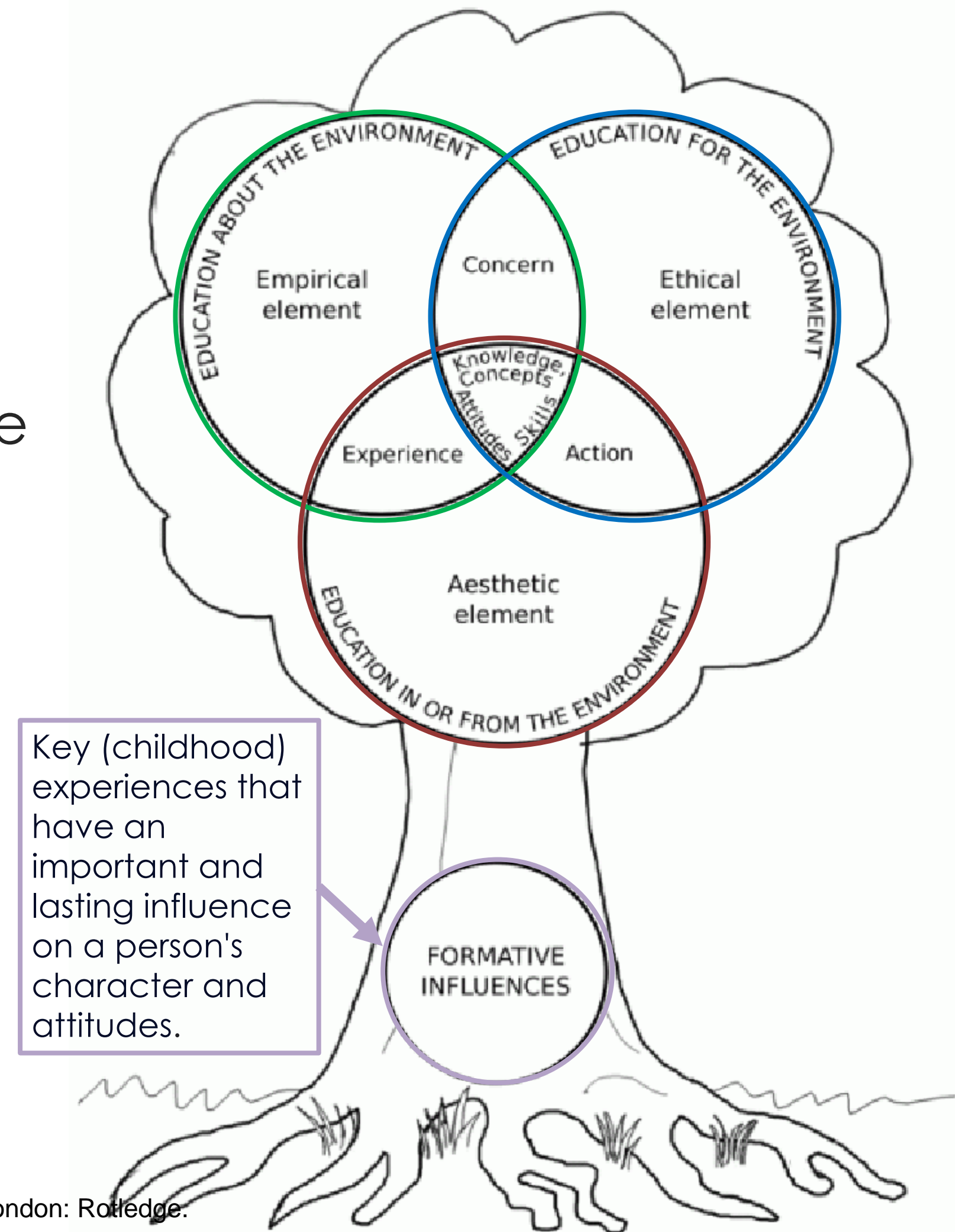
builds awareness, understanding, and the skills necessary to obtain the understanding

## 2. education in or from the environment

learning occurs outside of the classroom, e.g. in nature

## 3. education for the environment

has objectives related to nature conservation and sustainable development



# Basis of the game: Palmer's tree model of environmental education

## 1. education about the environment

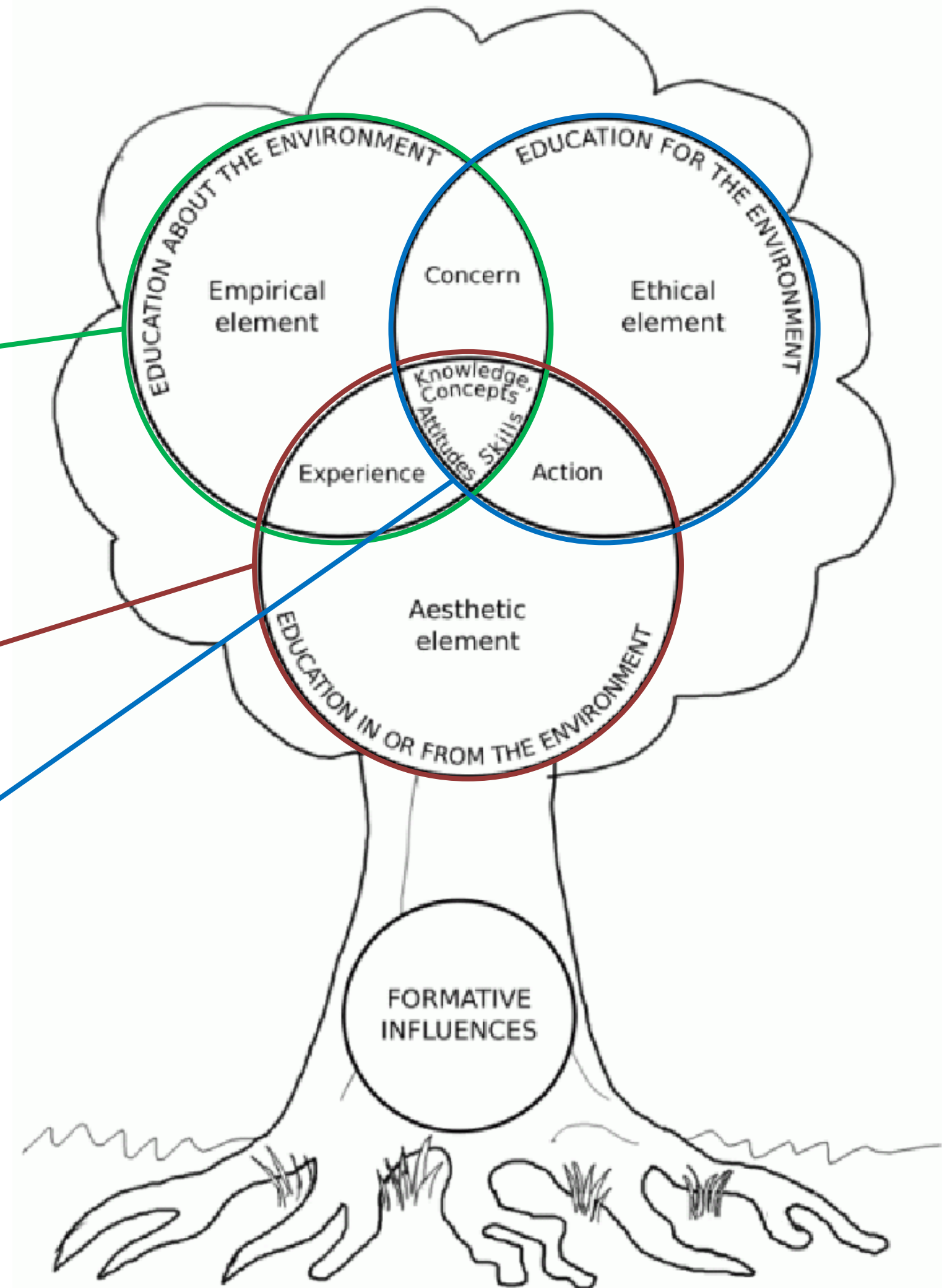
→ players gain knowledge about environmental issues by solving the tasks

## 2. education in or from the environment

→ players learn outside the classroom in multiple environments (S/S Bore, nearby supermarket, park, street etc.)

## 3. education for the environment

→ the game raises awareness and introduces easy actions that the players can exercise in their everyday life



# ÄPPI

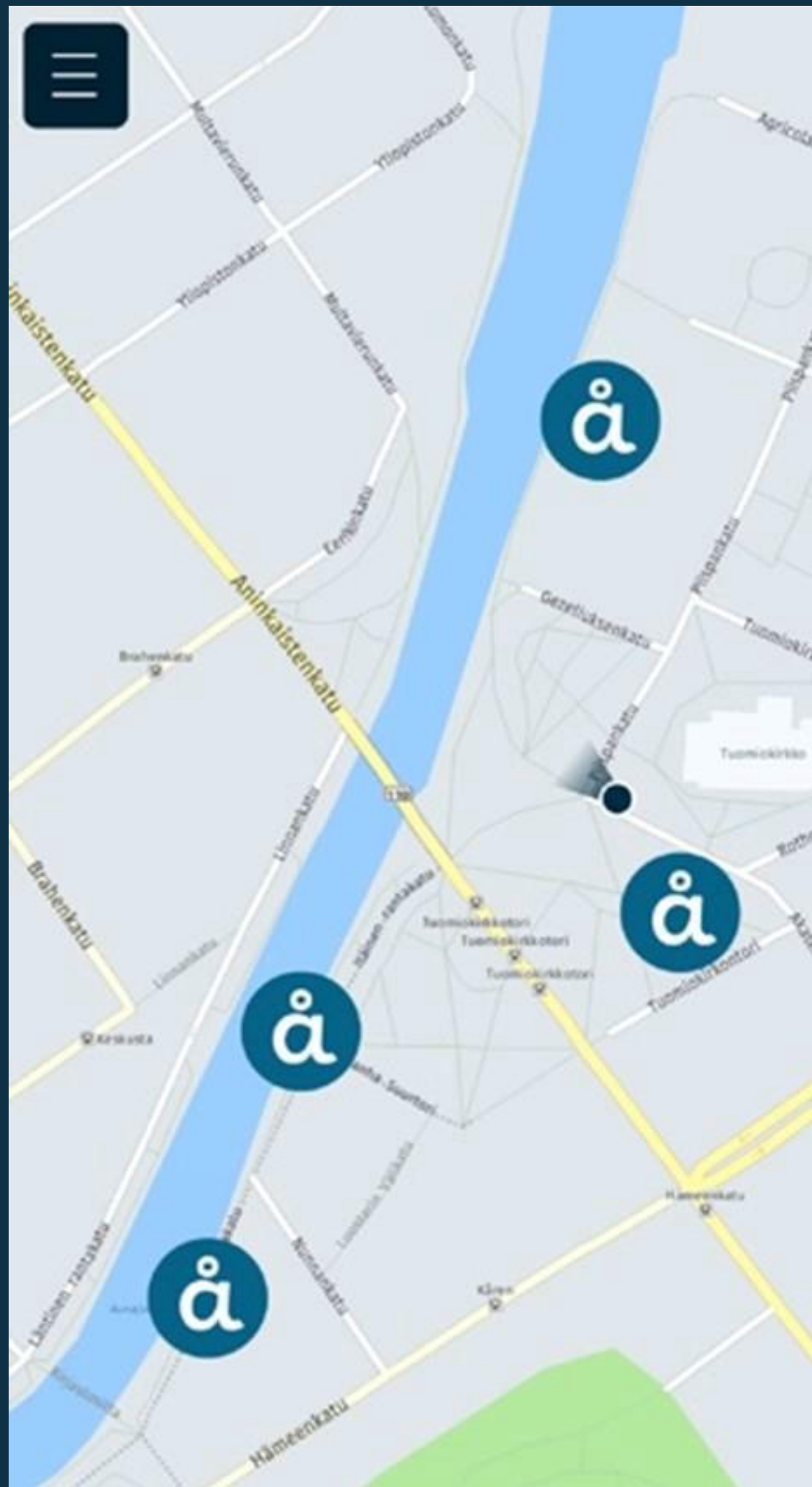
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**focus group:** for all pupils,  
students, citizens and tourists

**content:** augmented reality 2D  
and 3D objects related to text  
ingress, read more, multiple  
choice and gallery



The app guides you to points that reveal characters, persons and stories from Turku.



The learning environment is useful for teaching history, geography, biology, visual arts and languages.





# What is åppi?

- a free learning application of augmented reality which introduces unknown stories from Turku
- the app encourages students to walk along the side of the River Aura and find AR objects
- the contents are produced by students of Turku educational institutions



The learning environment is useful for teaching history, geography, biology, visual arts and languages.



# Why åppi?

- different ways to learn
- multidisciplinary subjects
- learning outdoors
- curiosity to learn new things
- developing digital skills
- cooperation between upper secondary schools, universities and companies

