

Developing the student bioeconomy mindset

Report and follow up from the ICA-CoP Colloquium 2022

Prof. Dr. Ingar Janzik
Forschungszentrum Jülich GmbH
Bioeconomy Science Center
i.janzik@fz-juelich.de



**European
Community
of Practice for
Bioeconomy Education**

The CoP

- ▶ Result of BioCannDo, Horizon 2020 project
- ▶ Building a network for educational innovators in the domain of Sustainable Circular Bioeconomy (SCB).
- ▶ Since 2022 ICA board committee: ICA-CoP Bio-Edu

The Goals

Share	Develop	Consult
<p>Share experiences and good practices among educational actors to enhance the quality, offer and diversity of education for the SCB in Europe, recognizing the different educational sectors and regional perspectives</p>	<p>Develop educational projects to enhance education and training for the SCB in Europe through the development of new educational materials, strategies and innovative educational and training</p>	<p>Consult with the European Commission, industry and other stakeholders about which skills and educational outcomes should be implemented in educational programmes</p>

 Ingar Janzik
 BioSC
 Han van Osch
 Simon Heath
 George Sakellaris
 Mona-Anitta Riihimäki
 Josef Glössl
 Konstantinos Vorgias



European Community of Practice for Bioeconomy Education

ICA-CoP BioEdu Colloquium 2022 in Ghent



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**Interdisciplinary Education for the Bioeconomy:
Embedding the mindset of the bioeconomy in
the curricula of Bachelor programmes**

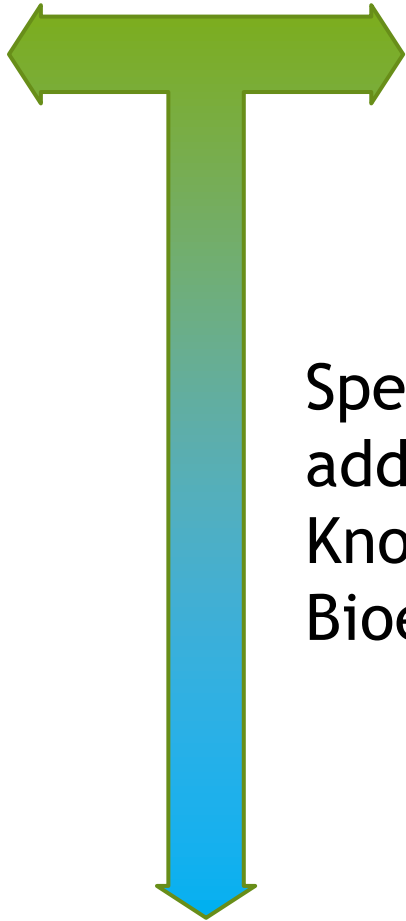


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Bioeconomy-related Sciences and Fields

Legal_Sciences **Biology** Material_Science
Engineering **Data_Science**
Economy **Fishery** **Energy_Science**
Logistics **Ethics** **Horticulture**
Social_Science **Agriculture** **Politics**
Bioeconomy
Chemistry **Food_Chemistry**
Biotechnology **Textile_Science**
Physics **Forestry** **Biochemistry**
Architecture **Soil_Science**
Waste_Management **Environmental_Science**

T-Shape: Relation of the bars



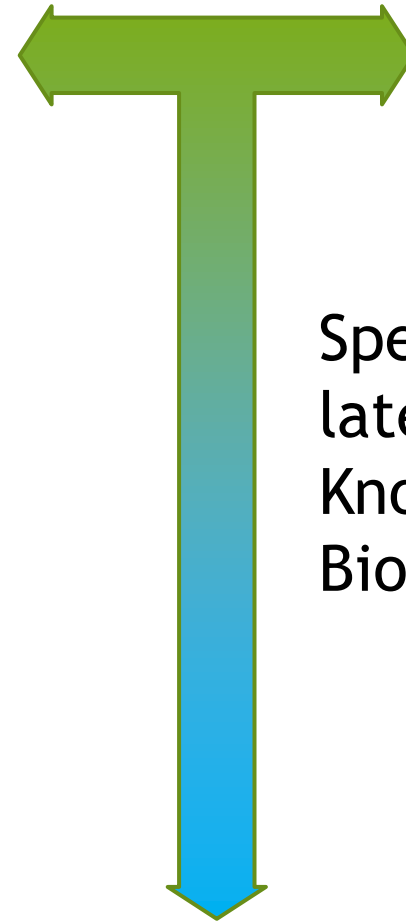
Specialist with
added
Knowledge in
Bioeconomy



Bioeconomist
with a broad
knowledge in
many topics, but
not very deep
knowledge in a
specific topic

Some concrete examples for both targets

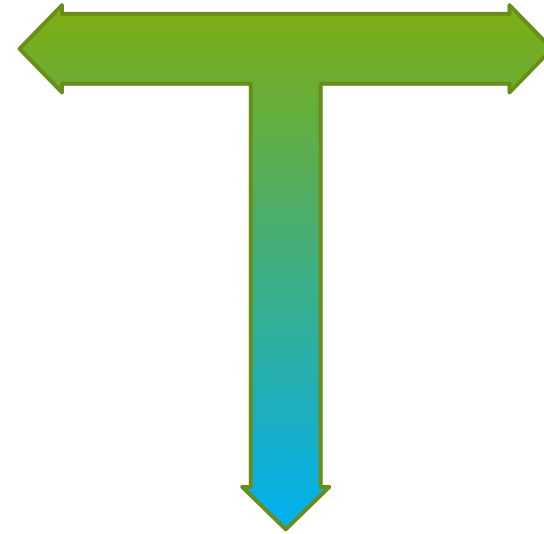
- ▶ *Minor Green Technology* (UNINA, IT)
- ▶ Msc Bioeconomy (several examples)



Specialist with
late added
Knowledge in
Bioeconomy

Some concrete examples for both targets

- ▶ Course in Exploration as basis for Interdisciplinarity in all programmes (AVANS, NL)
- ▶ Mandatory 4 ECTS course about Bioeconomy for all Bsc programmes (EMÜ, EE)
- ▶ Principle of the 3 pillars for all Bsc (BOKU, AU)



Specialist with early added Knowledge in Bioeconomy or needed skills

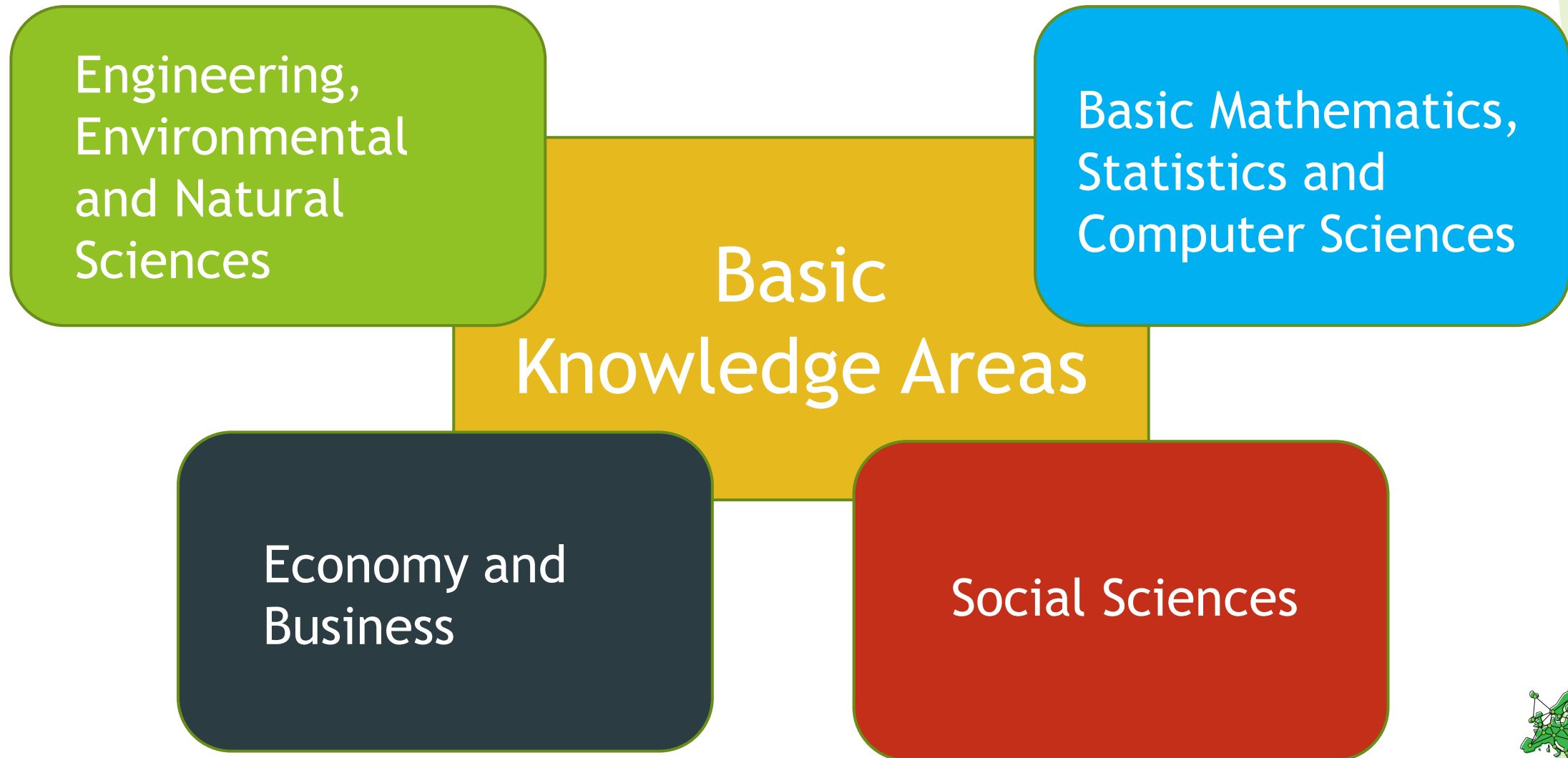
Some concrete examples for both targets

- ▶ *Bsc Information and Communication Technology, Bioeconomy* (HAMK, FI)
- ▶ *BSc Bioeconomy* (TUM, DE)



Bioeconomist
with a broad
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What do they have in common?



What do they have in common?

Sustainability at
each level
(personal, local,
global and in time)

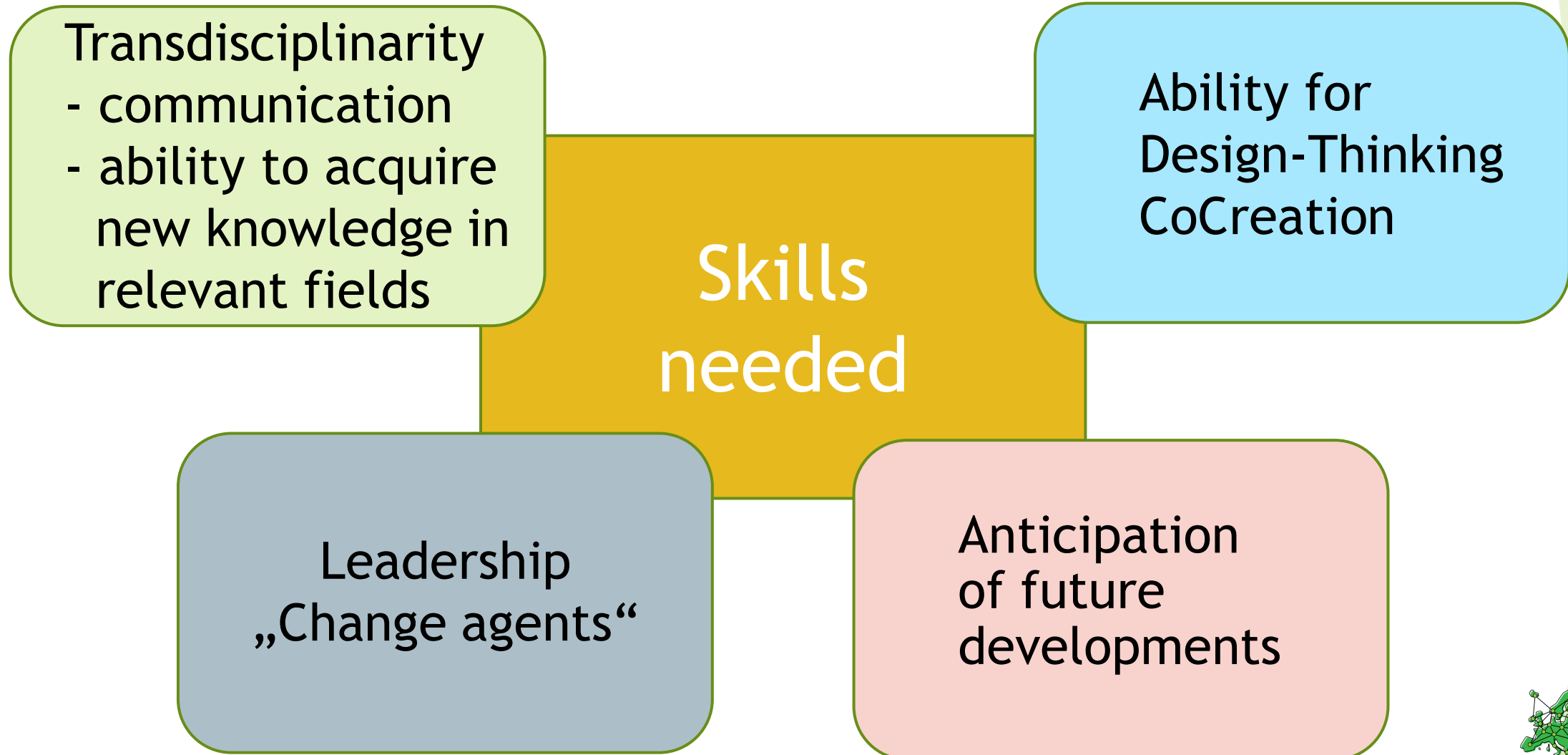
Awareness
needed

Biodiversity
as a resource

Intergenerational
thinking and
responsibility

Social Acceptance
Human Ethics

What do they have in common?



What should be the central learning outcome?

- ▶ *“The students will be able to describe the main components and their linkages within the sustainable circular bioeconomy and place their own specific competences within this framework!”*

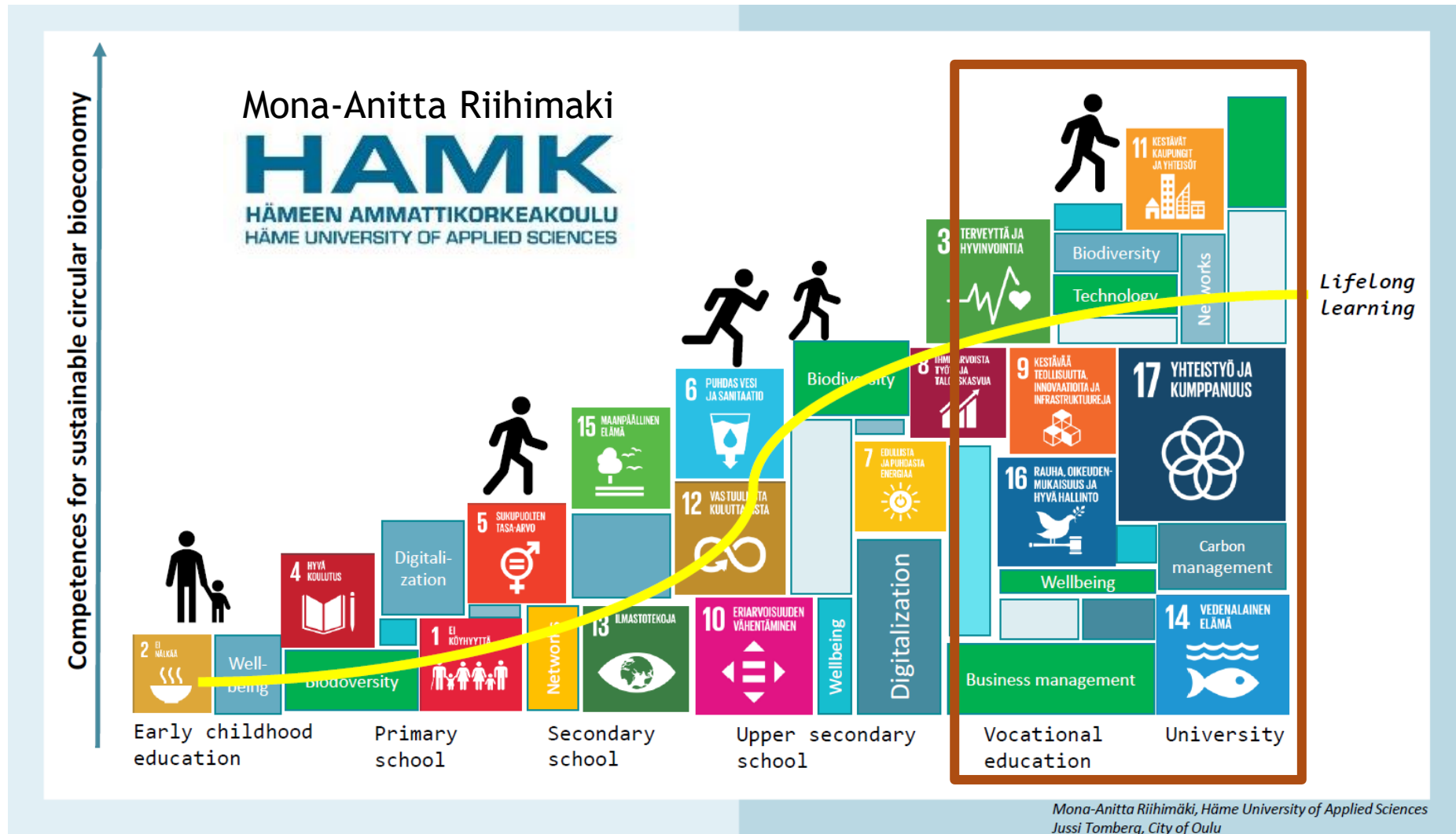
Our conclusion: Start early and never stop teaching and learning



What are the prerequisites to achieve this in general?

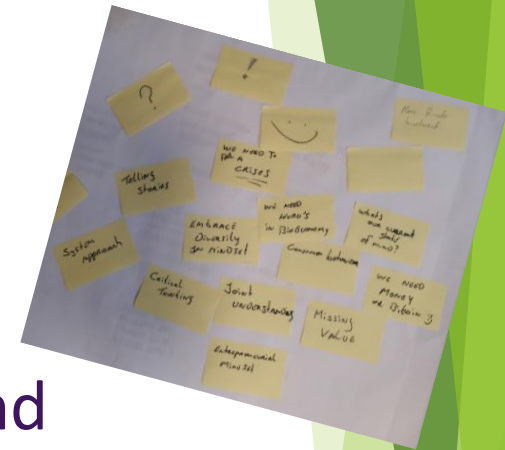
- ▶ **Interconnect teaching activities** between primary and secondary school education; higher education; VET education; and activities in communication to the public community
- ▶ **Identify idols** and more Ambassadors for the Bioeconomy, like the “Bioeconomy Youth Ambassadors” of the European Commission

Our conclusion: Start early and never stop teaching and learning



What are the prerequisites to achieve this at university level?

- ▶ **Engage the teachers in developing curricula**, as they know concrete examples for discipline specific contributions to Bioeconomy.
- ▶ **Create safe and inspiring learning environment** for teachers and students to test new ideas and formats of teaching.
- ▶ **Possibilities for exchange**, like our ICA-CoP-Bio-Edu colloquium.
- ▶ **Develop a digital and easily accessible repository of case studies** for the whole spectrum of different forms and curricula that have been established already, including the description of difficulties and solutions.



What are the prerequisites to achieve this?

- ▶ **More collaboration with the local and regional industry** in education projects.
- ▶ Industry is:
 - The provider of jobs
 - An ideal place for internships
 - An provider for examples, which can be used as “problems to be solved” in students’ interdisciplinary teamwork.



Increase the interest of students in bioeconomy and develop Learning outcomes together.

Doing the next steps

ICA-CoP BioEdu Workshop 2023 here

“Enhancing Student and Industry Engagement”

