

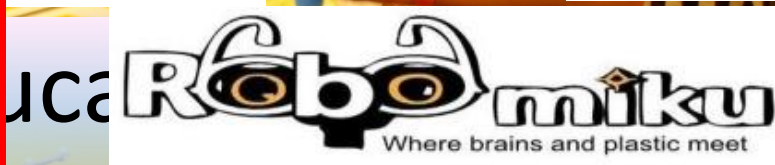


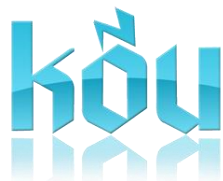
# Educational Robotics in Estonia



Heilo Altin  
Ramon Rantsus  
Ranel Sarapuu

# MTÜ Robootika





European Union  
Regional Development Fund



Investing in your future



Euroopa Liit  
Euroopa Sotsiaalfond



Eesti tuleviku heaks



Tiigrihüppe  
Sihtasutus

- No pep talk
- Long-term investment



3000 programmers could be hired by tomorrow  
in Estonia

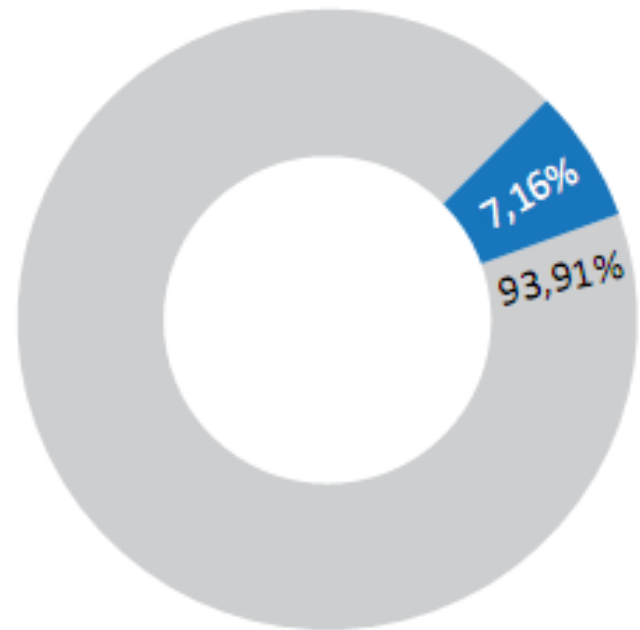
Can anyone become an engineer?

# GOAL

Introduce kids to technology, offer them the  
opportunity to create, design, test and play  
with it starting  
in  
kindergarten

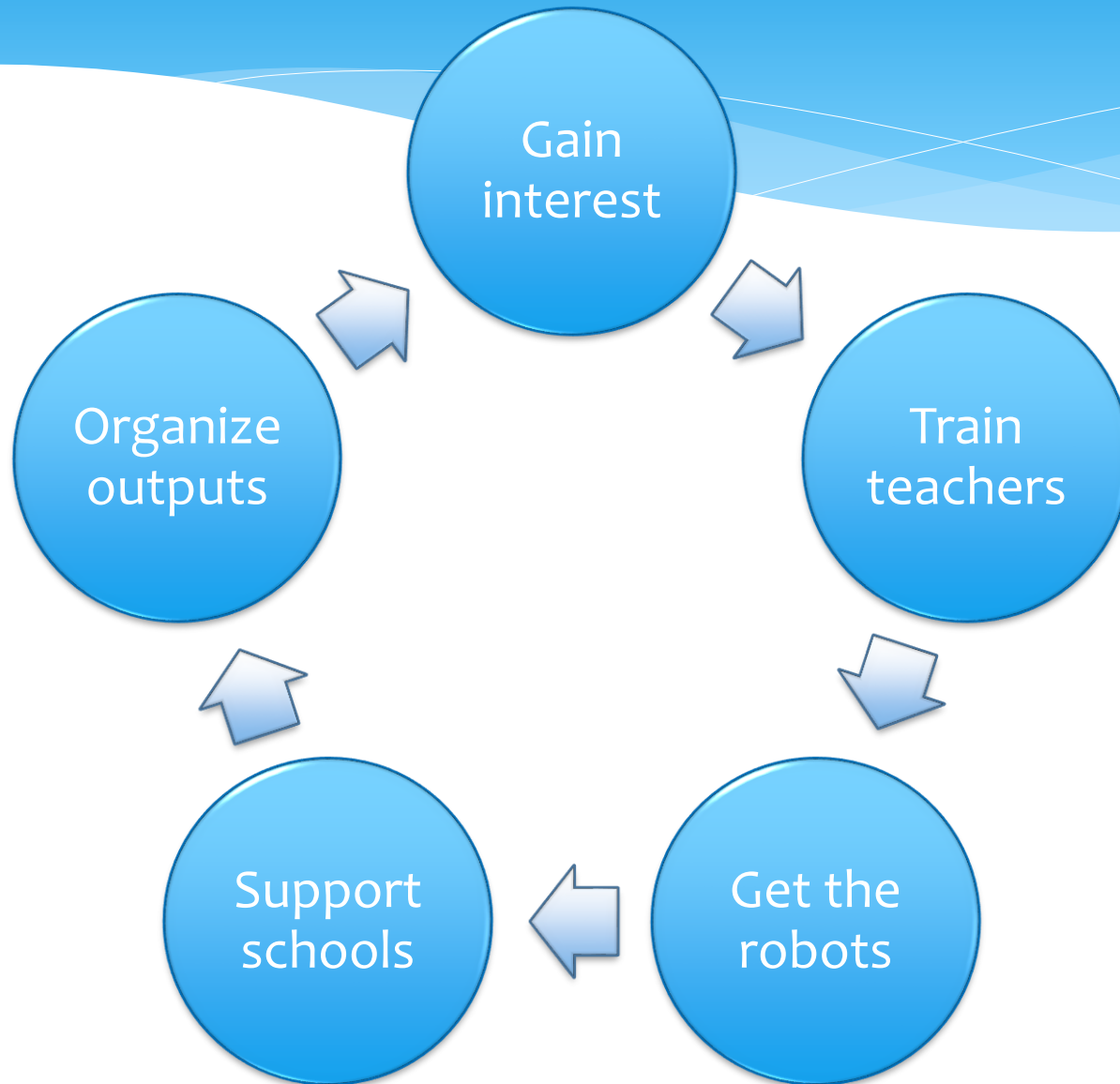
# After-school activities in comprehensive schools 2013

Source: Estonian Education Information System database  
2013, spring

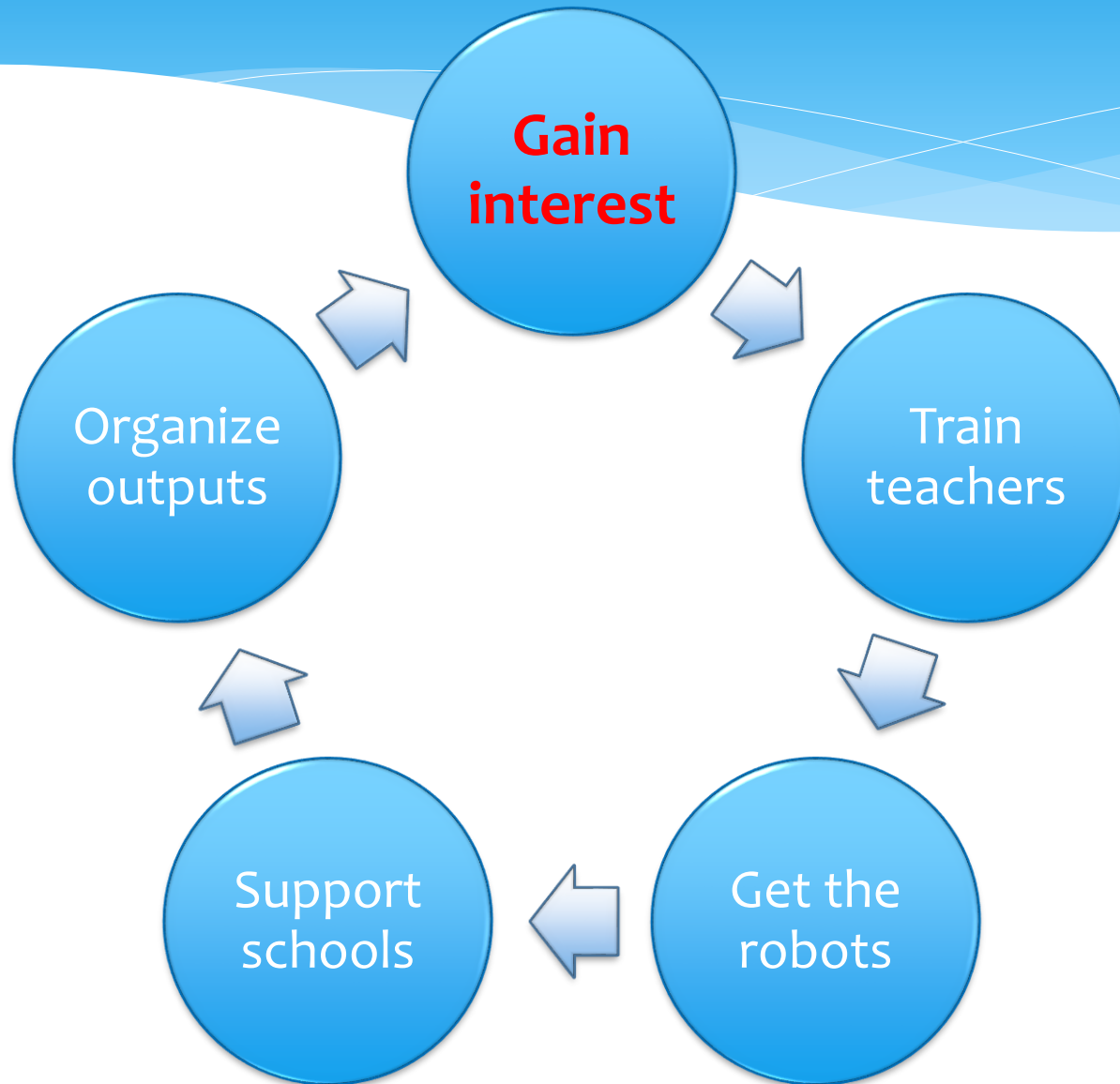


- Science and technology
- Everything else

# Concept



# Concept



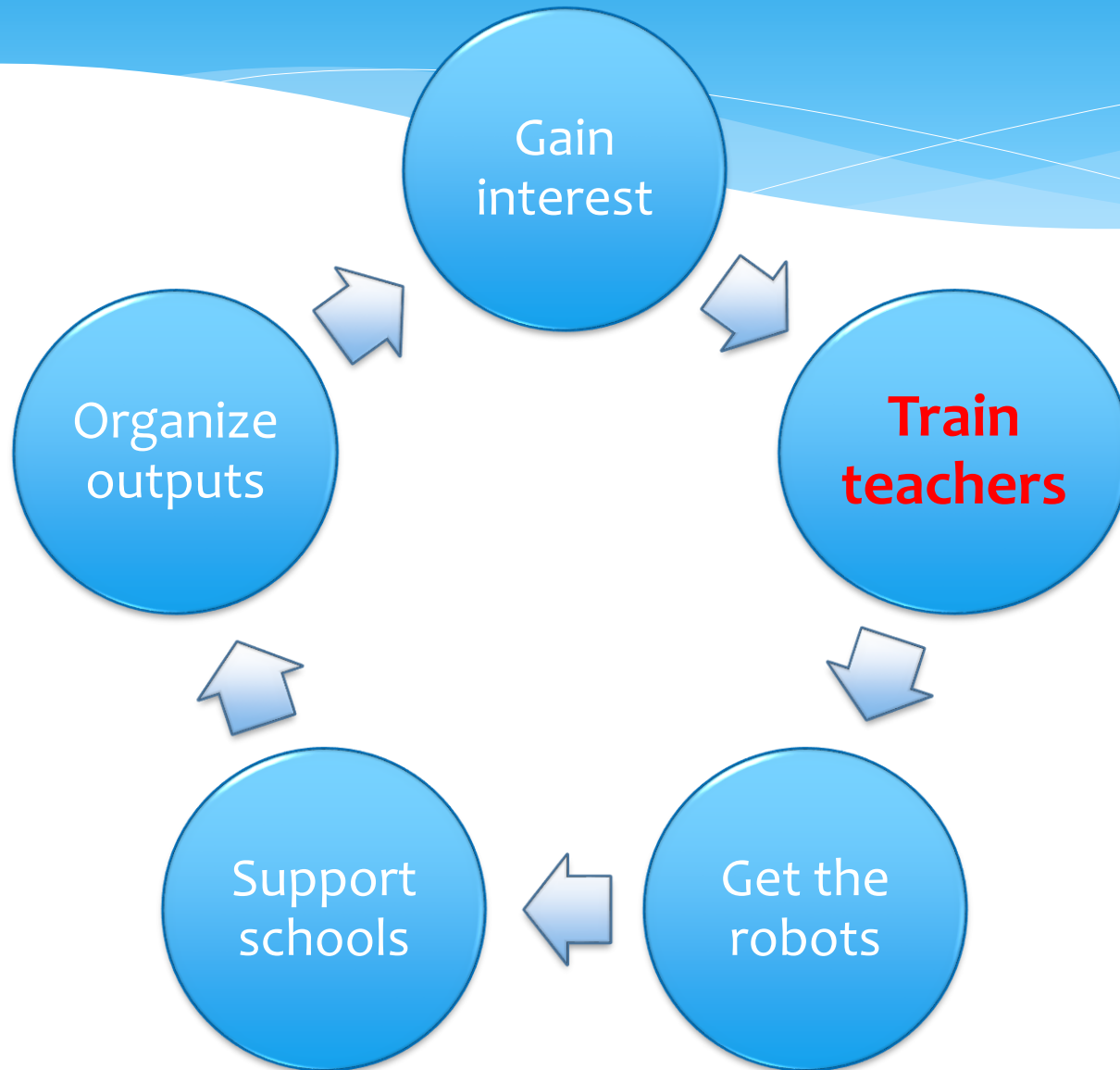
# How Do We Gain Interest?

- \* Robotic theatre
  - \* Outcome
  - \* Risks
- \* Workshops
  - \* Effect on whom?
- \* Fairs



Robotic theatre in Hiiumaa, 2010 december

# Concept



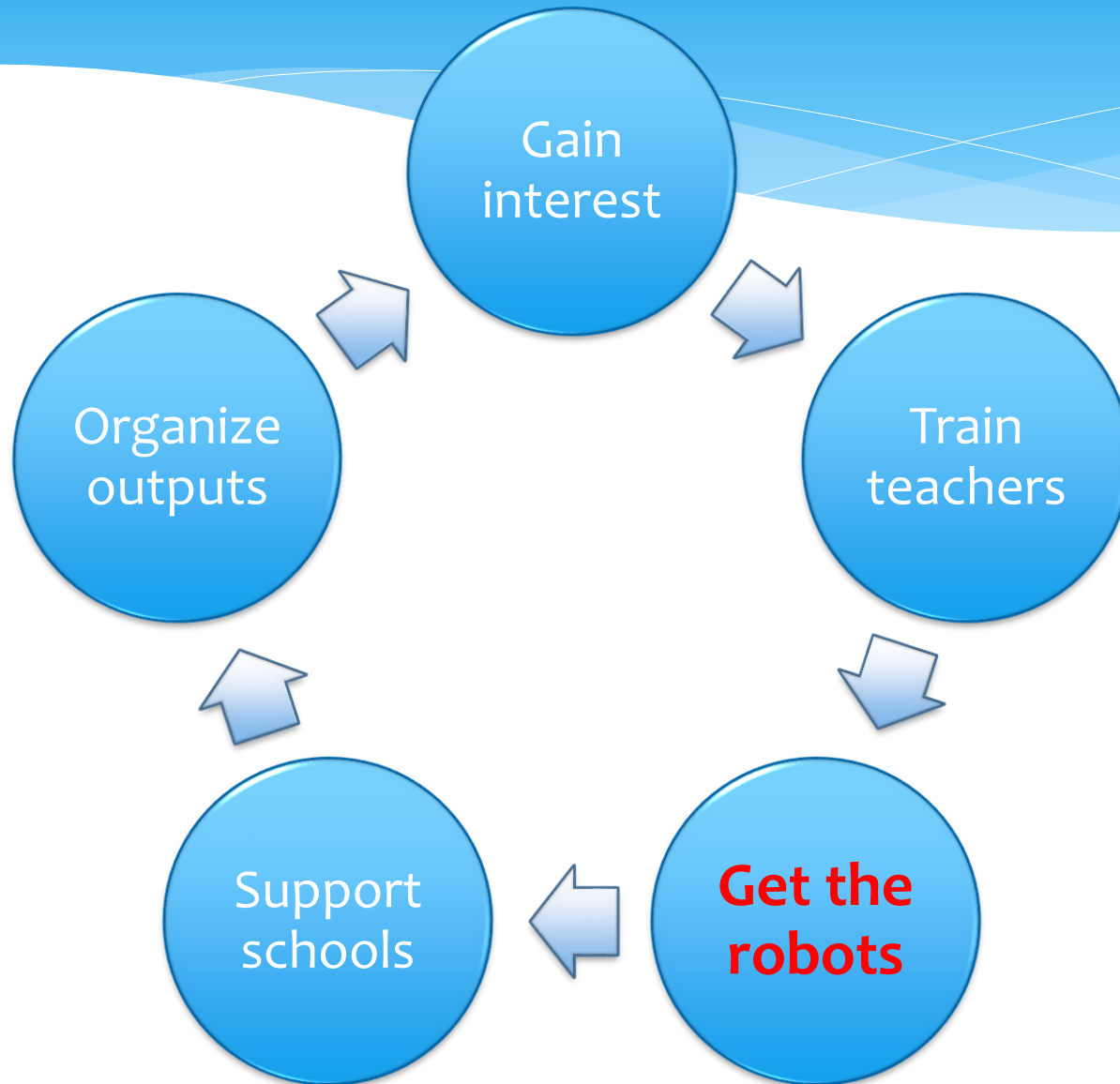
# Teacher training

- \* Positive emotion vs hard work
- \* Time oriented vs results
- \* Typical thinking: „I did not understand exactly how this works, but I will take a look at it in school!“



Teacher training of robotics and mechatronics course in Tartu 2013

# Concept



# Getting the robots

- \* Recommended robotic sets
  - \* LEGO MINDSTORMS
  - \* Robolabor
- \* Support from the government
  - \* HITSA
  - \* Smart Lab

# NutiLabor - SmartLab hobby trainings

- \* Smartlab project
  - \* **Look@World Foundation**
  - \* **Microsoft Estonia**
  - \* **EMT and Elion**, which are telecommunications companies operating in Estonia. EMT and Elion belong to TeliaSonera, Europe's 5th largest telecommunications group.
- \* The total contribution to the Smartlab by Microsoft, EMT and Elion is 185,000 euros. In 2013 additional partner joined project - Itella Logistics, Playtech, BCS Intera.

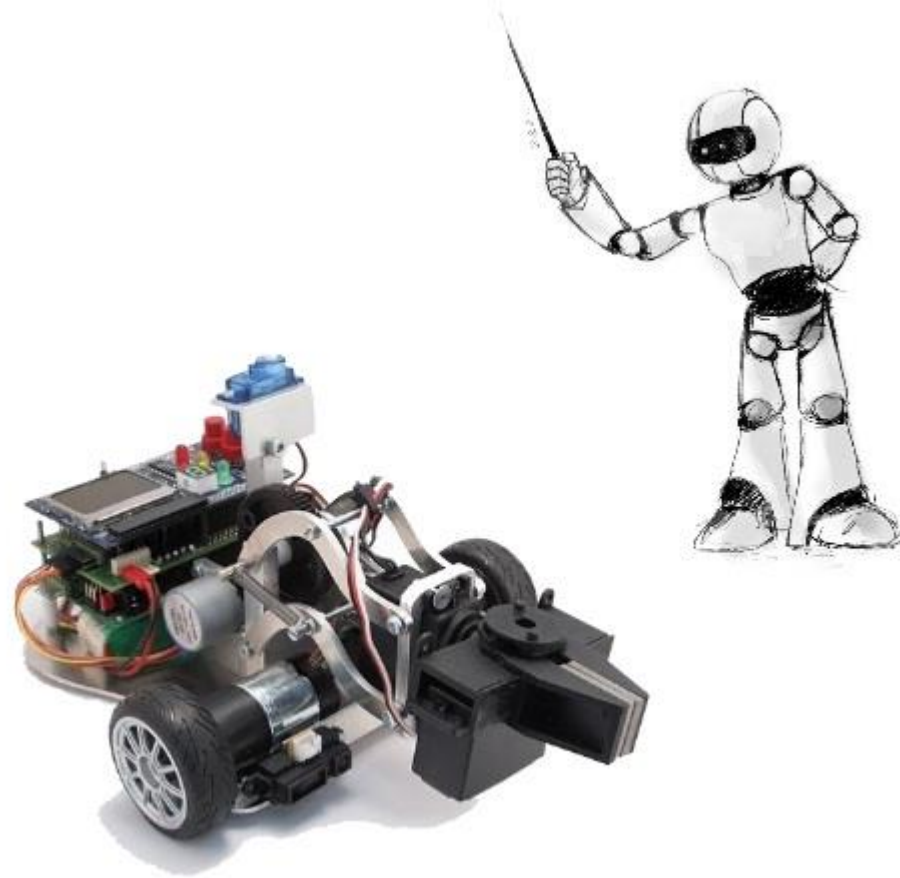




LEGO Mindstorms NXT

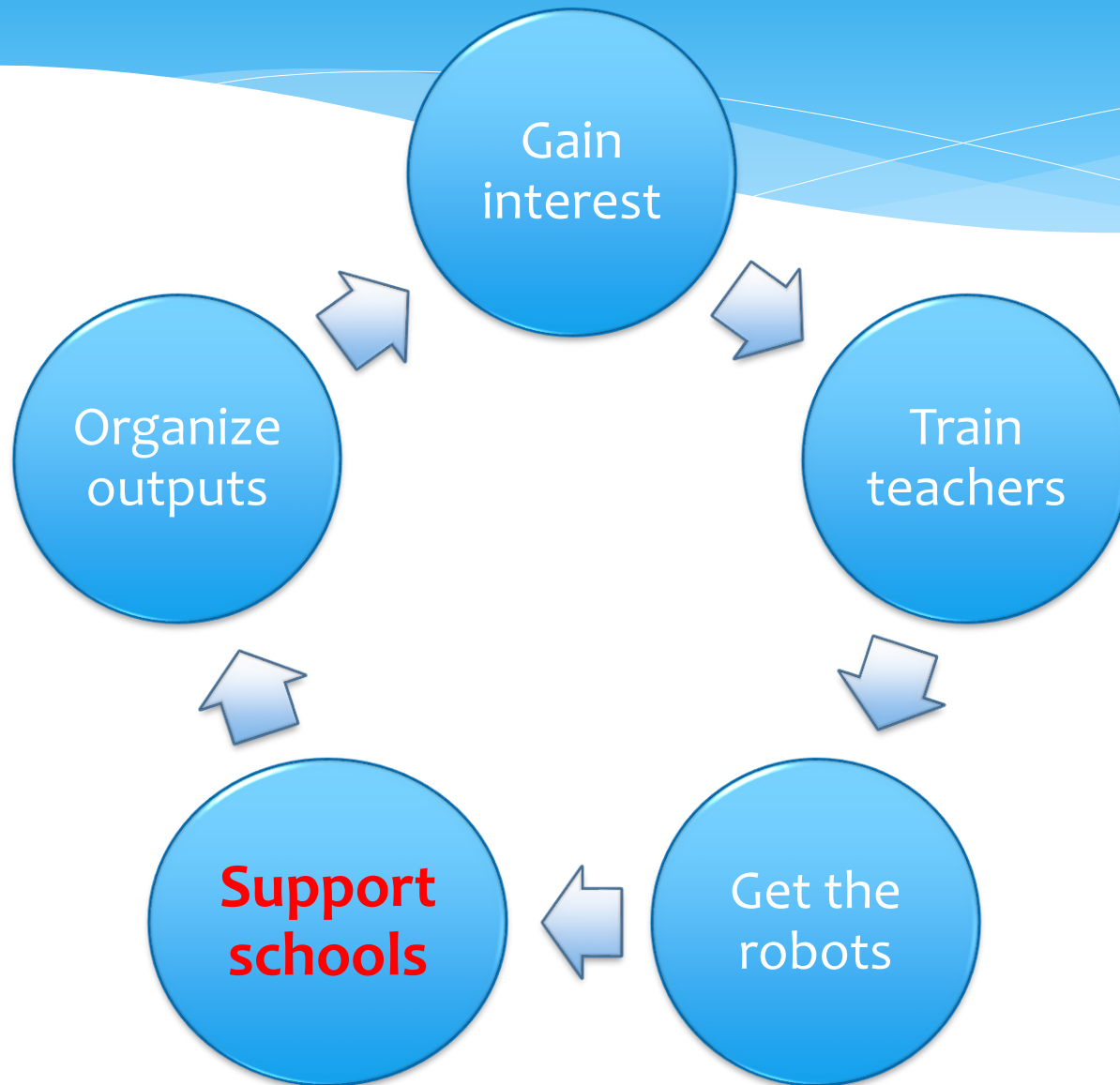


LEGO Mindstorms EV3



Robolabor

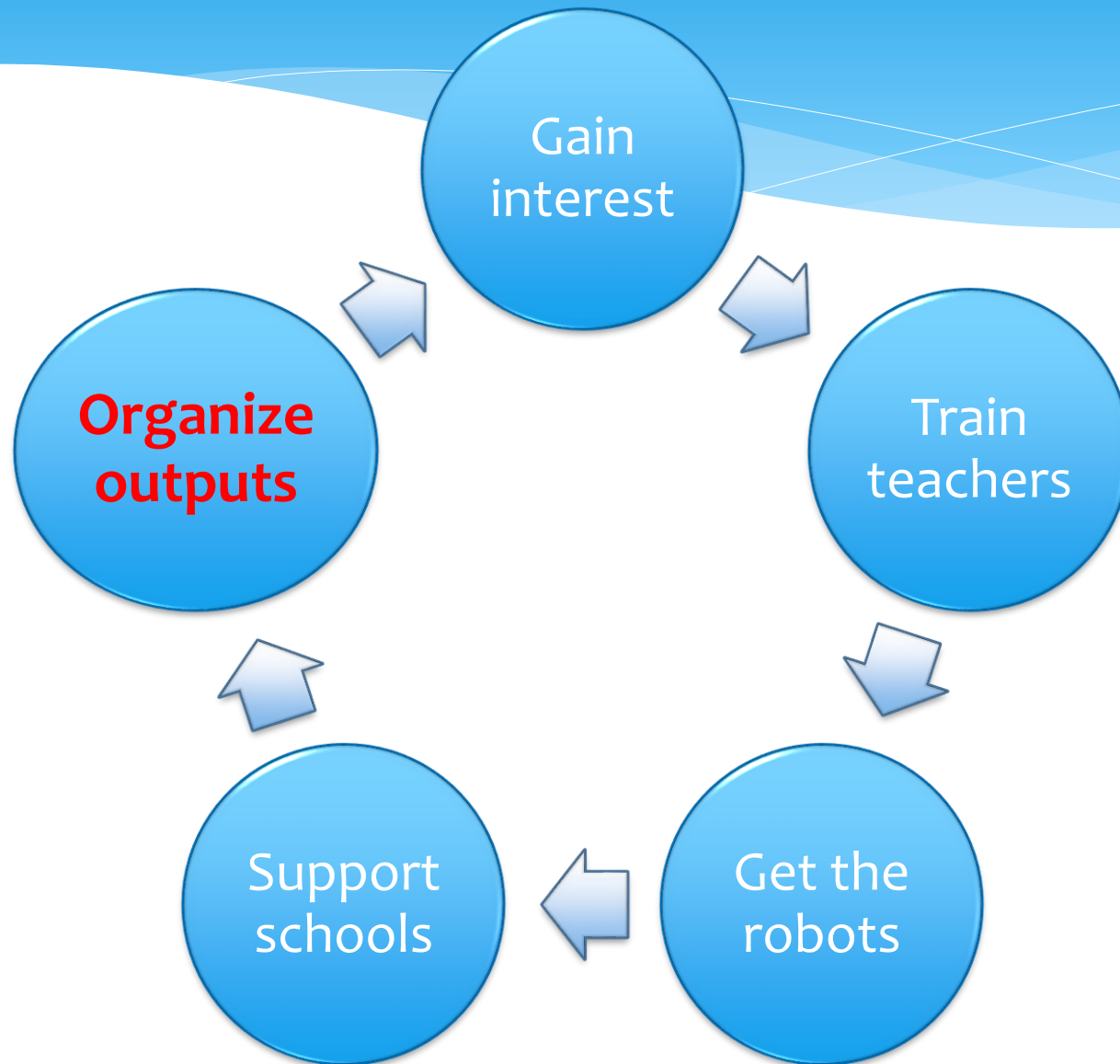
# Concept



# Support

- \*List for teachers
- \*[www.robotika.ee](http://www.robotika.ee)
- \*Trainings
- \*Robotic theatre
- \*Competitions
- \*Ramon's mobile phone

# Concept



# Outputs

- \*Competitions
  - \*Technology days
- \*National contest
  - \*Multiple disciplines
- \**FIRST*® LEGO® League



FIRST LEGO League 2012 semi final in Tartu AHHA Science center

Idea?

Not to teach robotics!

Idea

Big Bang theory in school

# Robootika?... See on imelihtne!

LEGO® MINDSTORMS® NXT PROGRAMMEERIMINE C-KEELES

Leivo Sepp



A map of Estonia showing the locations of schools that have joined a project. The map is divided into two horizontal sections. The top section shows the northern part of the country, including the Lahemaa National Park (Lahemaa RP) and the Kiviõli area. The bottom section shows the southern part, including the Soomaa National Park (Soomaa RP) and the Rāpina area. Numerous blue location pins are scattered across the landmass, indicating the locations of the schools. A semi-transparent blue rectangle with white text is overlaid on the center of the map.

40 % of schools in Estonia  
have joined the project



*„It is not about people building robots, it is about robots building people!“*

- \* Thank you!
- \* [www.robotika.ee](http://www.robotika.ee)
- \* [Heilo.Altin@ut.ee](mailto:Heilo.Altin@ut.ee)
- \* +372 51 87 617

