

EDULAB in schools –  
applying new methods  
in STEM education



#### Robomath

Robot supported math teaching in basic school, its influence on student motivation and engagement



#### Digimath

Novel lesson scenarios for applying interactive learning resources in math classes



#### Smart schoolhouse

Using different smart sensors in teaching with the aim of raising student interest towards technology



#### Mobile outdoor learning

Subject integration in natural science teaching through outdoor learning scenarios using sensors, robotics devices and mobile apps

# EDULAB

The world is full of effective learning methods. However, only few of them ever make it into practice.

Learn more:  
[edulabs.ee](http://edulabs.ee)

More than 100 schools, 300 teachers and 3000 pupils have joined EDULAB's educational innovation co-creation projects.

The EDULAB model has been designed to enable the development of new teacher training programs, educational research and educational innovation all over Estonia.

# EDULAB

## Co-creating Educational Innovations with Estonian Schools

Co-creation methods for connecting educational innovation and practice.

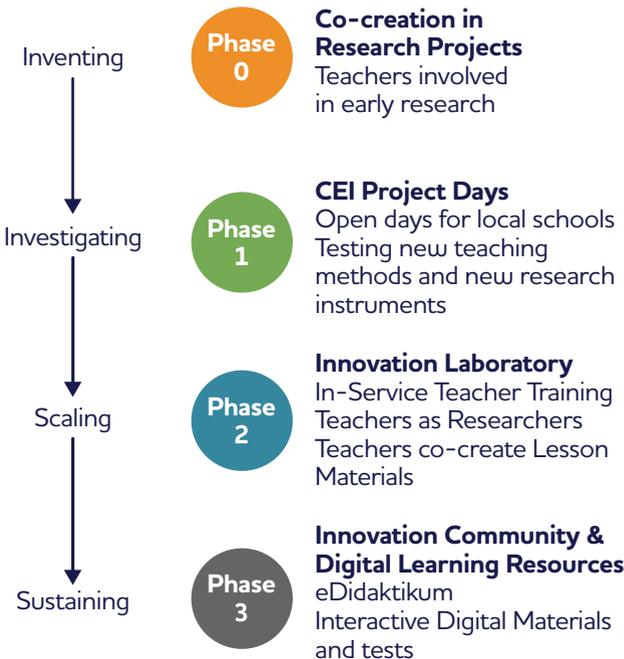
Learning analytics solutions for observing and analyzing learning process.



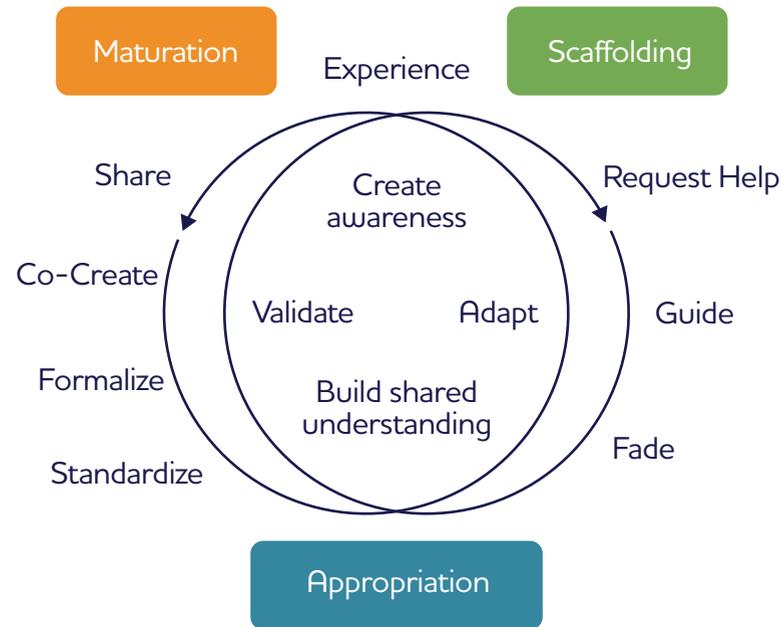
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The **EDULAB method** builds and strengthens co-operation between Estonian schools and universities to improve the sustainability of educational innovations in practice. This method is based on popular *Living Labs* approaches and focuses on building communities of teachers, researchers and other stakeholders. The community promotes sustainable and evidence-based educational innovation through continuous exchange of ideas, learning, co-creation and evaluating novel classroom practices.



The **EDULAB method** is based on the Knowledge Appropriation Model which helps to understand learning and knowledge creation processes when innovations are co-created.



The **Knowledge Appropriation Model** describes the three types of practices which are supported through the **EDULAB method**:

- 1) Knowledge maturation** describes the practices of knowledge creation, namely how an individual experience becomes shared in communities, and its further transformation into more mature knowledge. Specifically, this part describes how knowledge, for example, materials for new teaching and learning methods, is created, shared and refined.
- 2) Knowledge scaffolding** explains how professional learners are supported to apply the created knowledge in real-life settings, through formal and informal teacher training activities.
- 3) Knowledge appropriation** practices ensure successful, sustained and scaled adoption of innovation. In the process of knowledge appropriation, knowledge is arranged into general patterns and adapted to local needs.

The **Learning Analytics Toolbox** of **EDULAB** is helpful when observing and analyzing novel learning processes. It allows collection analysis and presentation of data to make it possible for researchers and teachers to evaluate the learning processes taking place in classroom and adjust the existing teaching practices.

These digital solutions for creating, managing and monitoring new teaching and learning practices offer following possibilities:

- Tools supporting action research on the classroom level
- Tools for creating and sharing digital teaching materials
- Tools for documenting and analyzing novel learning scenarios
- Tools for implementing new learning scenarios through digital learning environments, outdoor learning technologies, etc.
- Tools for testing students' general competence and subject competence

