# O9

# Using constructivism, and project and challenge driven pedagogy for learning CT

Development and classroom use of challenge based learning frameworks, and project based learning methods, are the central elements of this Module. The approach is structured around techniques for scaffolding learner development of computational thinking competencies are important in terms of relevance and motivation of pupils. This module educates future teachers in empirically validated models and pedagogical and didactical models and methods, helping teachers gain competence in the development of CT content at all levels of compulsory education.

In common with other outputs we share a common pedagogical model of conception, implementation and reflection and in terms of the challenge and project based content the module content is built around three theoretical pillars.

• **conceptual competence**: gaining conceptual understanding of computational thinking concept, including especially decomposition, abstraction, algorithms and pattern matching;

• **pedagogical competence**: effective design, development and implementation of approaches and tools for integrating computational thinking into curriculum

• **reflective competence**: design, development and evaluation of instructional plans, materials and activities

A successful participant who completes this module will be able to:

• Demonstrate capability to develop and execute problem and project based learning

• Identify and develop a topical societal challenge

• Scaffold student learning in project settings

• Design assessment, and assess learning outcomes in project settings