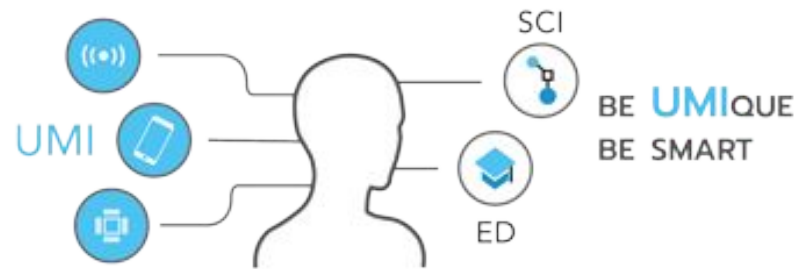


UMI-Sci-Ed Project: The experience in Norwegian schools



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Agenda

- The UMI-Sci-Ed project: Programming in secondary schools in an European perspective
- Educational scenarios: An example
- Reflection on the experience



What is UMI-Sci-Ed?

- UMI-Sci-Ed: Exploring **Ubiquitous** computing, **Mobile** computing and **Internet-of-things** to promote **Science Education**
- A European project involving 5 countries across Europe: Norway, Finland, Italy, Greece, Ireland
- Aim: enhance the attractiveness and inclusiveness of science education and careers for young people through the use of the latest technologies.

Mission



Empower young students (13-16 years in age) to:

- Think creatively
- Apply new knowledge in an effective way
- Become competitive in a highly demanding working environment
- Create Communities of Practice to support education

PARTNERS



What we provide....

- A platform for supporting activities in schools and cooperation - <http://umi-sci-ed.eu/the-platform/>
- Educational scenarios
- The UDOO educational toolkits

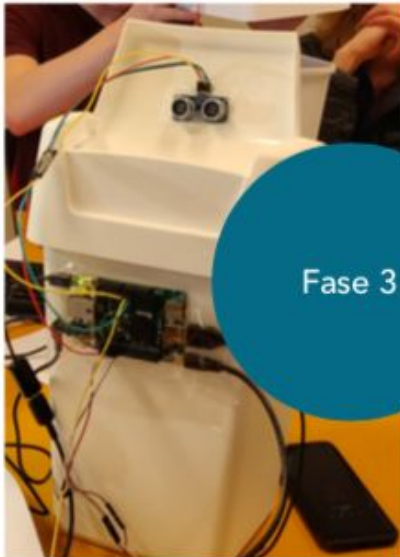




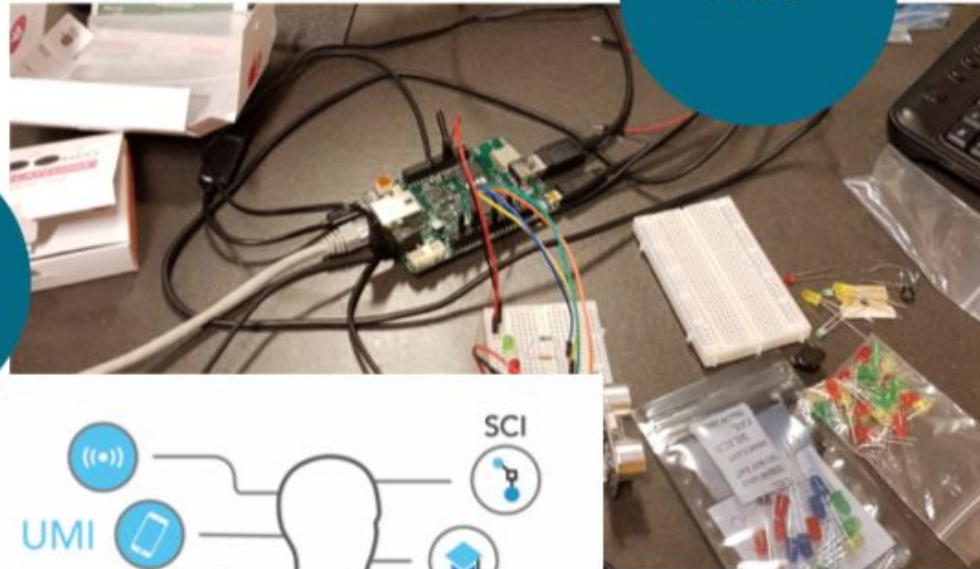
Fase 1



Fase 2



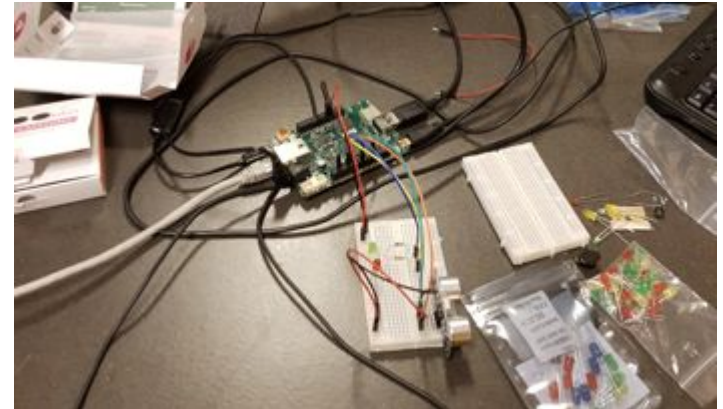
Fase 3





- Easy entry point, less “scaring”
- connected to societal challenges (technology in context)
- Develop ownership of ideas

- Introduction to microprocessors and sensors
- Group activity
- Hand-on tutorial



- Project - oriented activity
- Students have the possibility to be more creative (within the limited time frame that they have)

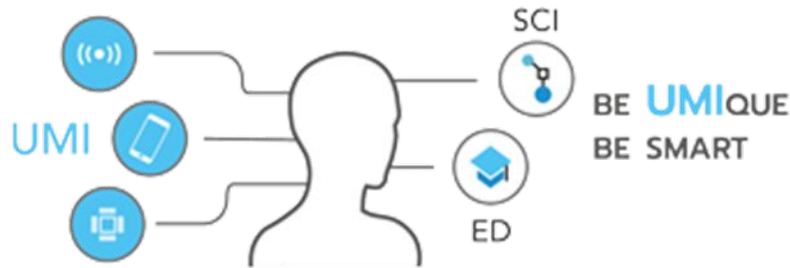
Some lessons learned (1)

- UMI as an effective way to engage students
 - ...but requires close follow up from the teachers
- The gender gap
 - Girls are a minority in ICT-oriented classes
 - It is important to motivate them early
 - Girls are doing as well as boy, sometimes better
 - Stereotypes seem to be strong and tend to push back girls during programming activities
 - active scaffolding by the teacher

Some lessons learned (2)

- Low floor, high ceiling activities
 - not easy to design and to implement
- Varied activities are important to trigger participations
 - how and when to push students out of their “comfort zone”
- Students might play an important role in helping others to learn - give them a chance
- Cooperation with external actors is important - invite people into your class
 - but remember that your role as a teacher remains critical

Interested in cooperating with NTNU?



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