NTNU
Norwegian University of
Science and Technology

FaSMed

Raising Achievement through Formative Assessment in Science and Mathematics Education

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FaSMEd

FaSMEd

Newcastle University

SEARCH

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About our Project

Raising Achievement through Formative Assessment in Science and Mathematics Education (FaSMEd)

FaSMEd is a Science in Society Collaborative Project of the European Community.

This three year, €1.9M project led by Newcastle University will take lessons from around the world to help improve mathematics and science skills in Europe and South Africa.

Working with partners across eight countries, researchers will look at how technology can be used in formative assessment by teachers to help raise attainment levels among students.

In each country this involves researchers working with a cluster of schools with a focus on the use of formative assessment and technology to improve interactions in the classroom and reduce the anxiety about performance which frequently limits learners' development in these subjects.

FaSMEd partners are:

- University of Newcastle Upon Tyne, UK - Coordinator
- The University of Nottingham, UK
- Ecole Normale Superieure De Lyon, France
- Maynooth University, Ireland
- University Of Duisburg-Essen, Germany
- University Of Turin, Italy
- University Of Utrecht, The Netherlands
- African Institute For Mathematical Sciences Schools Enrichment Centre , South Africa
- University College Of Trondheim, Norway

Mål

This project aims to:

- foster high quality interactions in classrooms that are instrumental in raising achievement;
- expand our knowledge of technologically enhanced teaching and assessment methods in raising achievement in mathematics and science

Øke elevers prestasjonen i matematikk og naturfag

- Formativ vurdering
- Bruk av Teknologi
- Skoleutvikling (PD – professional development, gjennom lesson studies)

Samarbeidspartnere i Trondheim

- 3 skoler i Trondheim
- 1-7 skoler
- 6 lærere

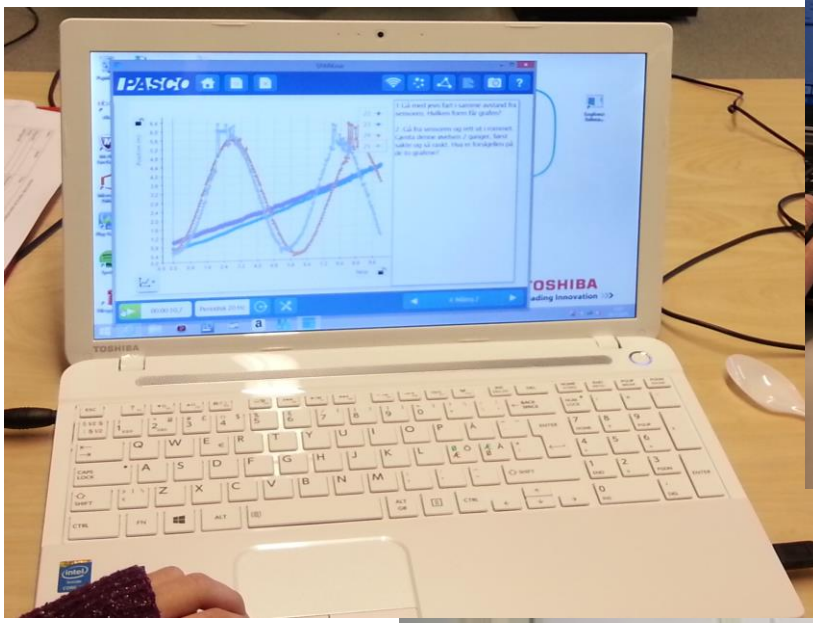
<u>Fagdager for lærerne</u>

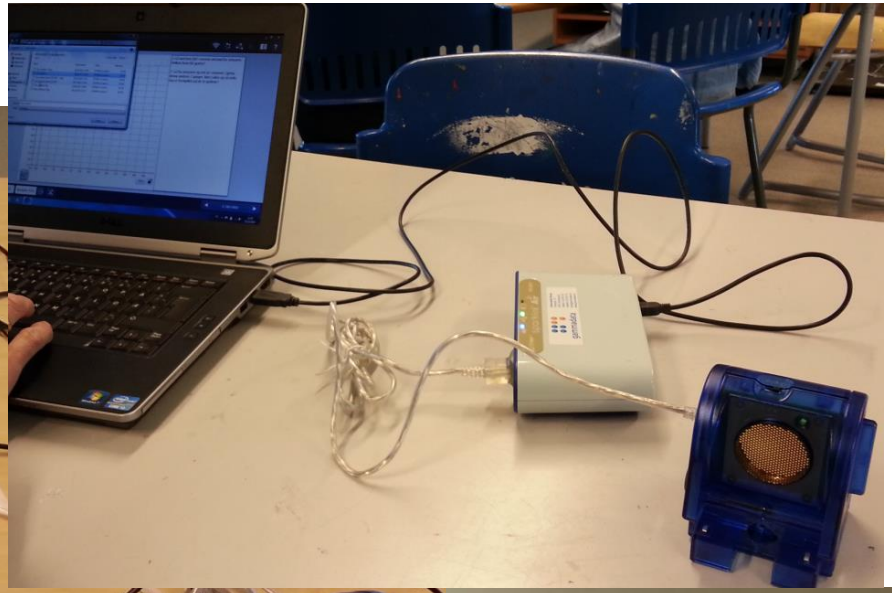
- Om PD – lesson studies
- Formativ vurdering
- Bruk av ulike teknologi til formativ vurdering i matematikk og naturfag

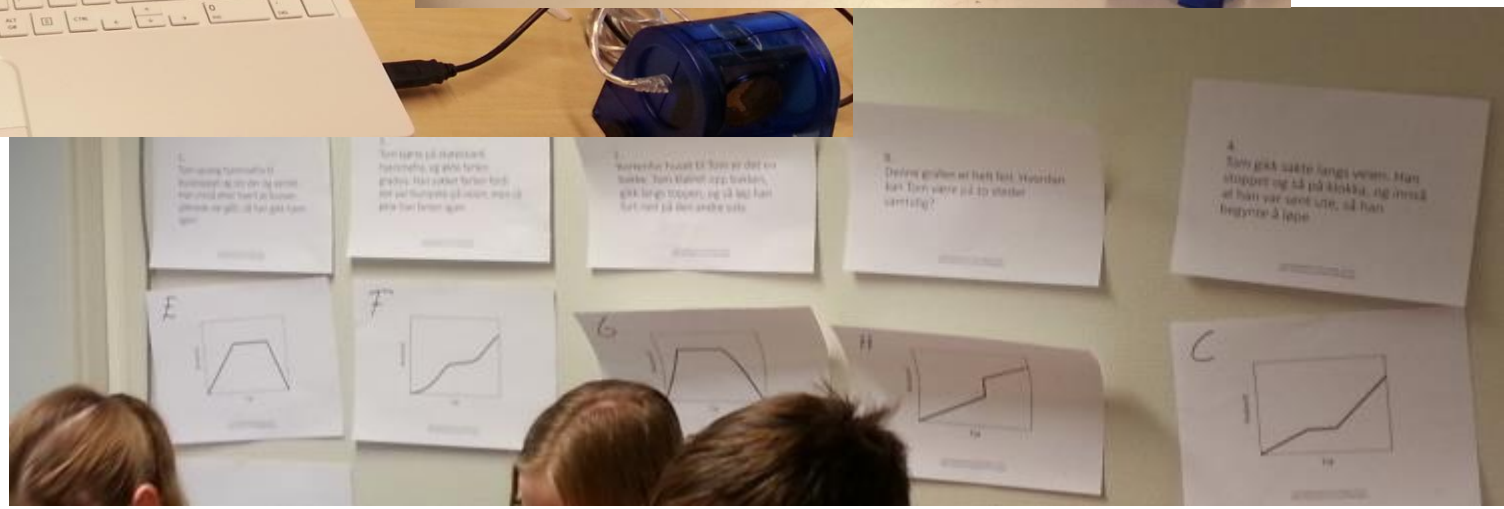
Case-studier

1. «Bakteriespredning»

2. «Gå en graf»







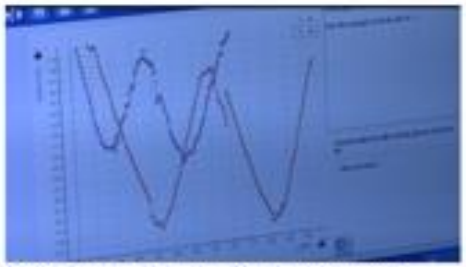
Case-studier med intervesjon/Design-redisign
Skolebesøk

Students making their own story to a graph

Teacher discussing pairs of graphs and situations v students

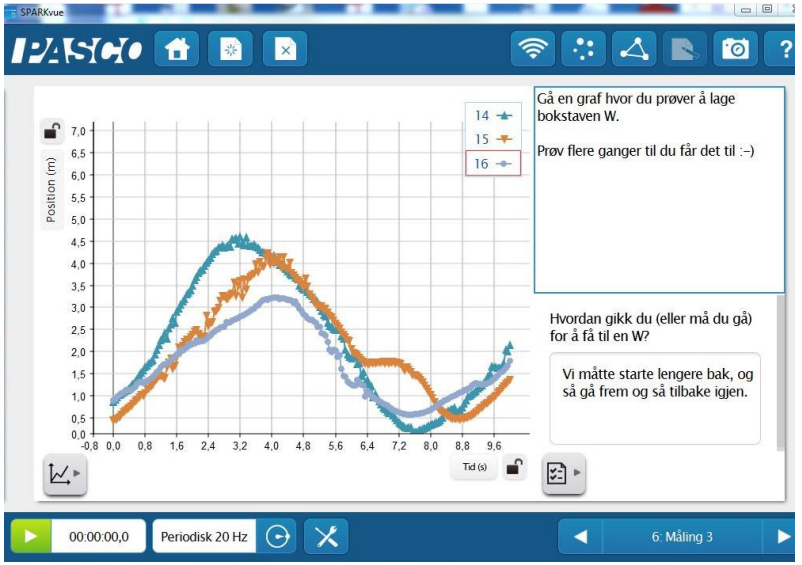
Echo sound set up

Students working with echo sound graph software



Screenshot of graphs from echosounder

Students presenting and explaining their results



Teknologi

- Analog (Sør-Afrika, + supplement andre land)
- SRS (Kahoot, Socrative, VersApp)
- Dataloggere (Ekkolodd – Gå en graf)
- Ulike program for grafbehandling (Desmos)

Spredning

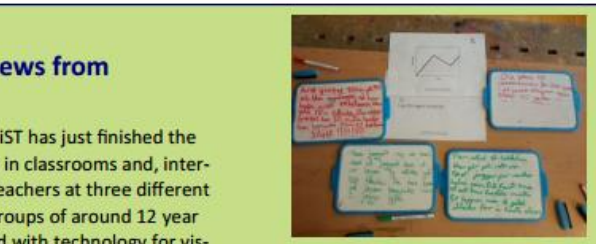
FaSMEd NEWSLETTER

Issue 8 **31st December 2015**

Welcome to our eigth issue of the FaSMEd newsletter. This issue includes news and updates from across the project

FaSMEd partner news from Norway

Our Norwegian partner, HiST has just finished the case studies, observations in classrooms and, interviews with students and teachers at three different schools. At two sessions groups of around 12 year old students experimented with technology for visualization of time-distance graphs. Four groups, each with 2 or 3 students, participated in a two part lesson. One part of the lesson was spent on a task about connecting graphical representations and stories. The other part of the lesson, the students tried out how to make graphs by walking in front of an echosounder connected to a computer. The computer would give a live display of graph in a time – position coordinate system.



For the "walking a graph" activity, we used data logger technology, a motion sensor based on ultrasonic pulses connected to a laptop, and an app with premade tasks was presented to the students. The tasks were a mix of practical tasks: "Walk a graph", and open-ended questions about interpretation of the graphs from the walks. All the results were saved and were used by the teacher for assessment and feedback to the students.

We observed enthusiasm as well as useful discussions and interpretations from both parts of the lesson. It seems that a combination of technology and paper tasks were extra valuable. Students having done the "walk a graph" activity, seemed to have a good understanding of the connection between a text describing a practical situation and how the corresponding graph would look.

Depending on age and ability, students may need close supervision when working with technological tools, in particular if these are not especially designed for school use. Obstacles we experienced included understanding the vocabulary and technical difficulties with the software. In our session we were able to overcome these problems by being a team of up to 6 researchers and teachers available for helping the students.

After the lessons, both the teacher Einar and the students expressed that they had really enjoyed this type of lesson, and that they had learned a lot from it.

From January 1st 2016 our college (HiST) will be part of the Norwegian University of Science and Technology – NTNU.

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