

PRIMARY OBJECTIVES

The objective of the project is to improve skills in science and innovation among students in multicultural primary schools thereby motivating them to opt for a natural science, secondary school program and a career in science.

- Focus on multicultural schools in Odense
- 5 participating schools
- Students who started in 6th grade in 2010, and their (science)teachers
- Follows the students until they leave primary school in 9th grade in June 2014

WHAT ELSE?

- Involvement of local community (other educational institutions, private/public enterprise)
- Teacher training (innovation, action learning)
- Networks for teacher and leaders

HOW?

- More than 250 students
- One week of *Science only*
- Participation in local science event (students as presenters)
- A new problem every year (by a local enterprise)



THE PROBLEMS

Vi har for meget varme - hvad gør vi?

Nyborg Forsyning & Service A/S (NFS) leverer varme til Nyborg kommunes borgere. NFS har ikke sit eget kraft-varmeverk og samarbejder derfor med virksomheden Kommunekemi A/S (KK), der behandler farligt affald på sit forbrændingsanlæg. Fra forbrændingen har Kommunekemi en masse overskudsenergi i form af vanddamp.

Overskudsenergien kan bruges til at drive turbiner, der producerer el eller til opvarmning af vand, der leveres til NFS.

NFS og KK har stor gavn af hinanden, men også nogle udfordringer, som de ønsker at finde en løsning på:

Om sommeren bruger Nyborgs borgere ikke så meget varme som om vinteren og hvad skal KK så gøre med overskudsvarmen? De kan producere mere el, men overvejer om der ikke kunne være bedre udnyttelsesmuligheder i årets varme perioder.

NFS og KK ønsker fordele og ulemper undersøgt ved følgende to løsninger:

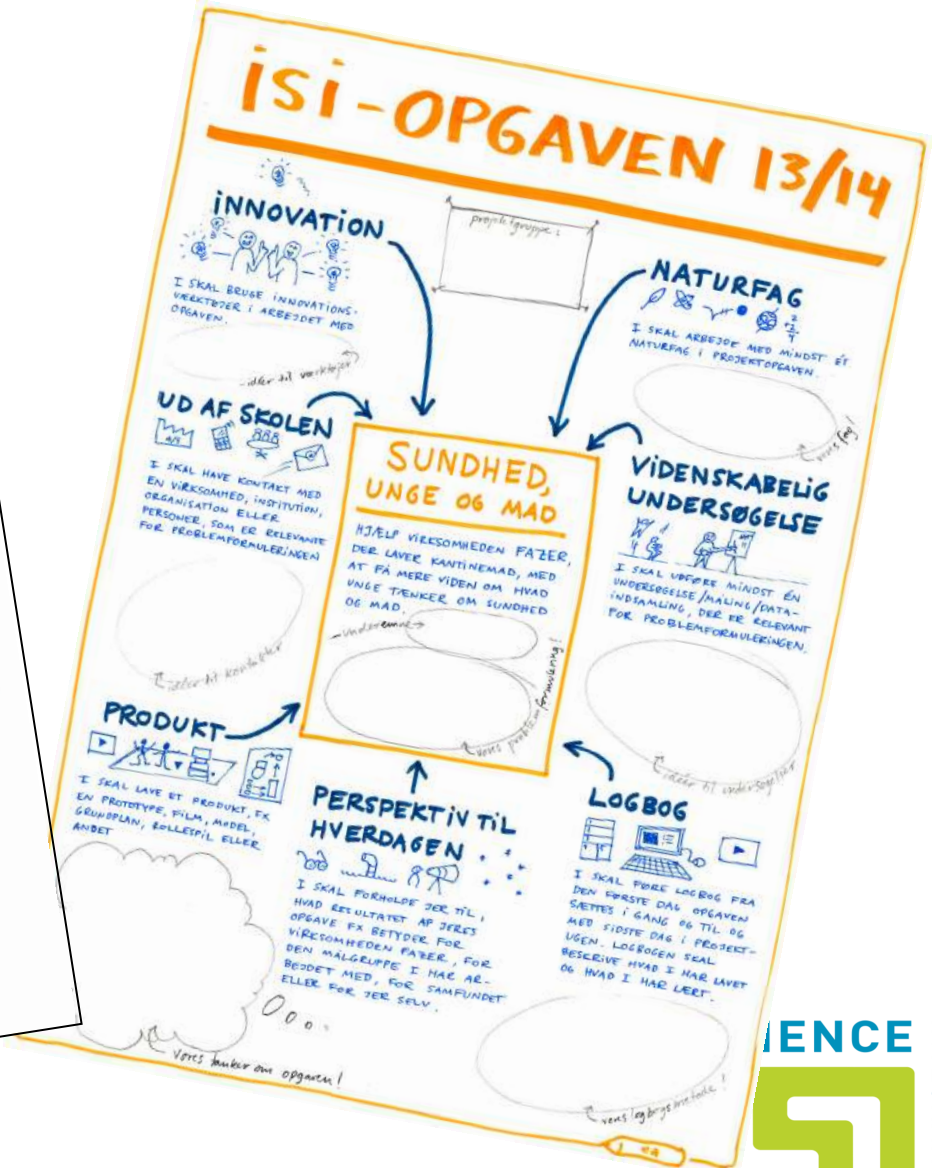
- 1) Kan I finde en metode til at lagre energien, så NFS kan bruge den, når borgerne i Nyborg vil skrue op for radiatorerne om vinteren?
- 2) Kan KK bruge energien til et helt andet formål om sommeren, når Nyborgs borgere vil slukke for radiatorerne?

Energi er meget værdifuldt, så både NFS og KK ønsker også at forstå de økonomiske konsekvenser ved de 2 forskellige løsninger.

Samtidig er det et krav, at løsningerne er miljøvenlige, da begge virksomheder har sat høje krav til sig selv om at belaste miljøet mindst muligt.



Kommunekemi A/S



THE PROBLEMS

- Developing innovation skills
- Local enterprises (Welfare Tech, Kommunekemi, Fazer)
- Students working in groups (2-4)
- Making prototypes
- Presentations
- Daily meetings
- Science event



ASSESSMENT?

- Students writing blogs
- Presenting to other students
- Meetings with teachers
- Judges at science event (winners?)



BLOGS

tirsdag den 18. marts 2014

Dag 2 i projektugen

Hej lærere

Idag har vi fået styr på alt det til vores fremlæggele med elektronik osv. Vi har fået styr på vores powerpoint og på alle de ting som der skal gøres. Så har vi været i Rema1000 og interviewet nogen folk men der var kun pensionister så det gør vi videre på i morgen. Vi har også lavet en masse mad ud af pap som vi skal bruge til vores fremlæggelse. Samarbejdet går godt men tror vi allesammen synes det er lidt uoverskueligt lige nu.

Her er et billede fra da vi var i Rema1000 for at interviewe



Vi ser frem til endnu en god og arbejdsrig dag i morgen!

Indsendt af Kirsten Skovhøj kl. 12.20

1 kommentar:

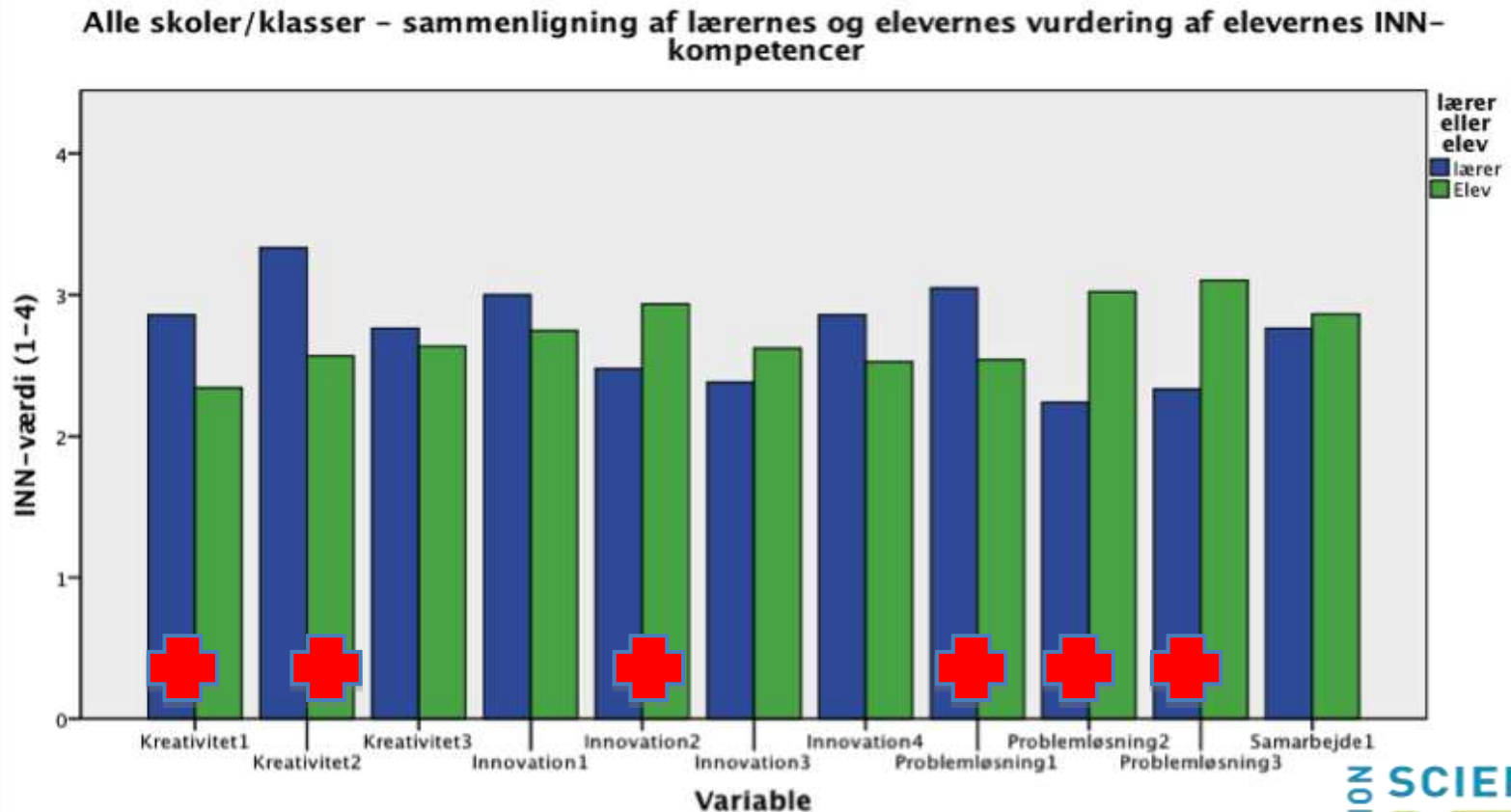
Ville i ikke hjælpe os?

Hej Lærer

- Uses different multimedia-tools
- The students own project
- Teachers able to follow the students ideas and thoughts all the way

EVALUATION?

- Difference between how students assess themselves and how teachers assess the students – why?



EVALUATION?

| Question # | Students | Teachers |
|-------------------|---|---|
| Creativity | | |
| 1 | I often find new ways of doing things. | Students often find new ways of doing things |
| 2 | I think it's great when I need to find new ways to do things | The students think it's exciting, when they need to find new ways to do things |
| 3 | When I learn something new, I find out how it fits in with what I have already learned. | When students learn something new, they find out how it fits in with what they have already learned |
| Innovation | | |
| 1 | I'm good at getting many ideas with others | Students are good at many ideas with others |
| 2 | I can see when others' ideas are better than mine. | Students can see when others' ideas are better than their own |
| 3 | I'm good at trying out what works before I choose the final idea | Students are good at trying out what works before choosing a final idea. |
| 4 | I am good at getting the best idea turned into something real | Students are good at getting the best ideas turned into something real |

EVALUATION?

| Question # | Students | Teachers |
|------------------------|---|--|
| Problem solving | | |
| 1 | I like to solve problems, I have not met before | Students like to solve problems they have not met before |
| 2 | When there is something I do not understand, I try to figure it out | Students try on their own to figure out the solution when there is something they do not understand. |
| 3 | When I learn something hard, I try to find out what it is, I do not understand. | Students try to find out which concepts they do not fully understand when learning something hard. |
| Collaboration | | |
| 1 | I can guide the work of a group so that we get what we need. | Students are willing to guide the work of a group. |
| 2 | I learn the most when I work with other students. | The students like to work together with other students. |
| 3 | I can work with most students in the class. | Students are able to assess the impact of their behavior and appearance has on others. |
| 4 | | Students are willing to take responsibility for a task or subtask. |

INTERVIEWS?

Students:

- *It has in a way been a liberation, but also stressful. Especially because all of a sudden you would have to think by yourself rather than when you are with the teacher.*
- *This makes it easier and more exciting. And it actually involves a real problem, it is almost like there is a customer.*
- *...and there is time for fun and to come up with cool ideas. I really like. I am certainly very inspired.*

Teachers:

- *They actually seem really committed. They also get to immerse themselves in an idea they get within a topic.*
- *There is better opportunity to get [the science concepts] articulated, as they might find it easier to do in the company of a group or with classmates, without there necessarily being a teacher that says "no, that's not what it is called" - for example: Can we put "it" in there. It is easier to say in a group than it is to raise their hand in class.*

PRIMARY OBJECTIVES

The objective of the project is to improve skills in science and innovation among students in multicultural primary schools thereby motivating them to opt for a natural science, secondary school program and a career in science.

