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# KEY FACTORS FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

*a case study from a rural secondary school in Norway*

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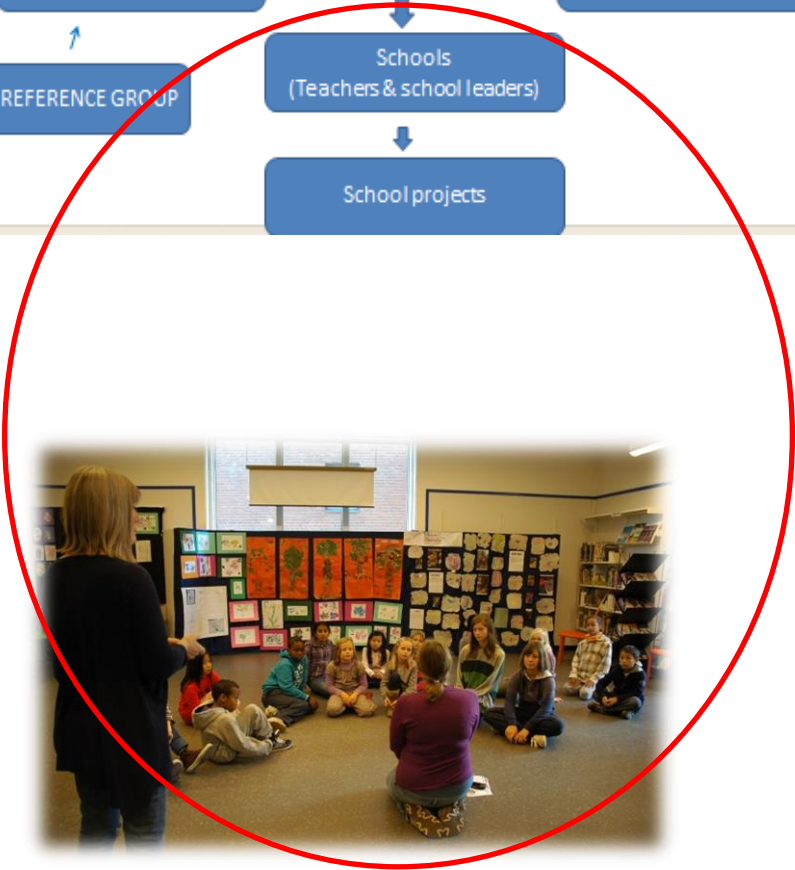
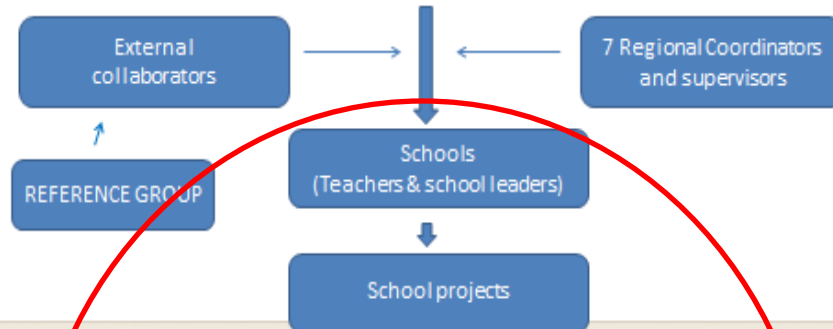
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# Content

- Background and research questions
- Context, data and method
- Results
- Summary and conclusion



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# The aim of the Sustainable backpack is

- to promote pupils and students understanding and awareness of sustainable development and global environmental challenges
- to give them competencies which can help them to find solutions to current and future environmental problems

# Research Questions

**RQ1:** Has the school succeeded with ESD in terms of giving the students awareness, knowledge and skills for acting for sustainable development?

**RQ2:** What are the factors that can be identified as central to ESD in this school?

# Context

Rural secondary school in Norway - participated in the Sustainable backpack for three years

The main topic for working with ESD at the school was on ecological, social and economic aspects of food that was locally produced.



# Economy



Student enterprises,  
Calculate the costs, Marketing

# Ecology



Local food,  
Organic food,  
Climate,  
Resources

## Locally produced food

Identity, Pride, Health,  
Joy, Outdoor Activities,  
common experiences

# Social



# Data

- interviews with eight students (age 15)
- interviews with five teachers
- interviews with the school-leader
- written reports describing the work at the school





# Method

- The interviews were conducted with three clusters, the teachers together, the school-leader alone and the students in two groups with four students in each.
- Two researchers (authors) conducted the interviews, and were both present.
- All interviews were audio-recorded and subsequently transcribed.
- The questions in the interviews was related to how the school worked with sustainable development (SD), teachers and students' experiences and perception of SD, in addition to students understanding of SD.

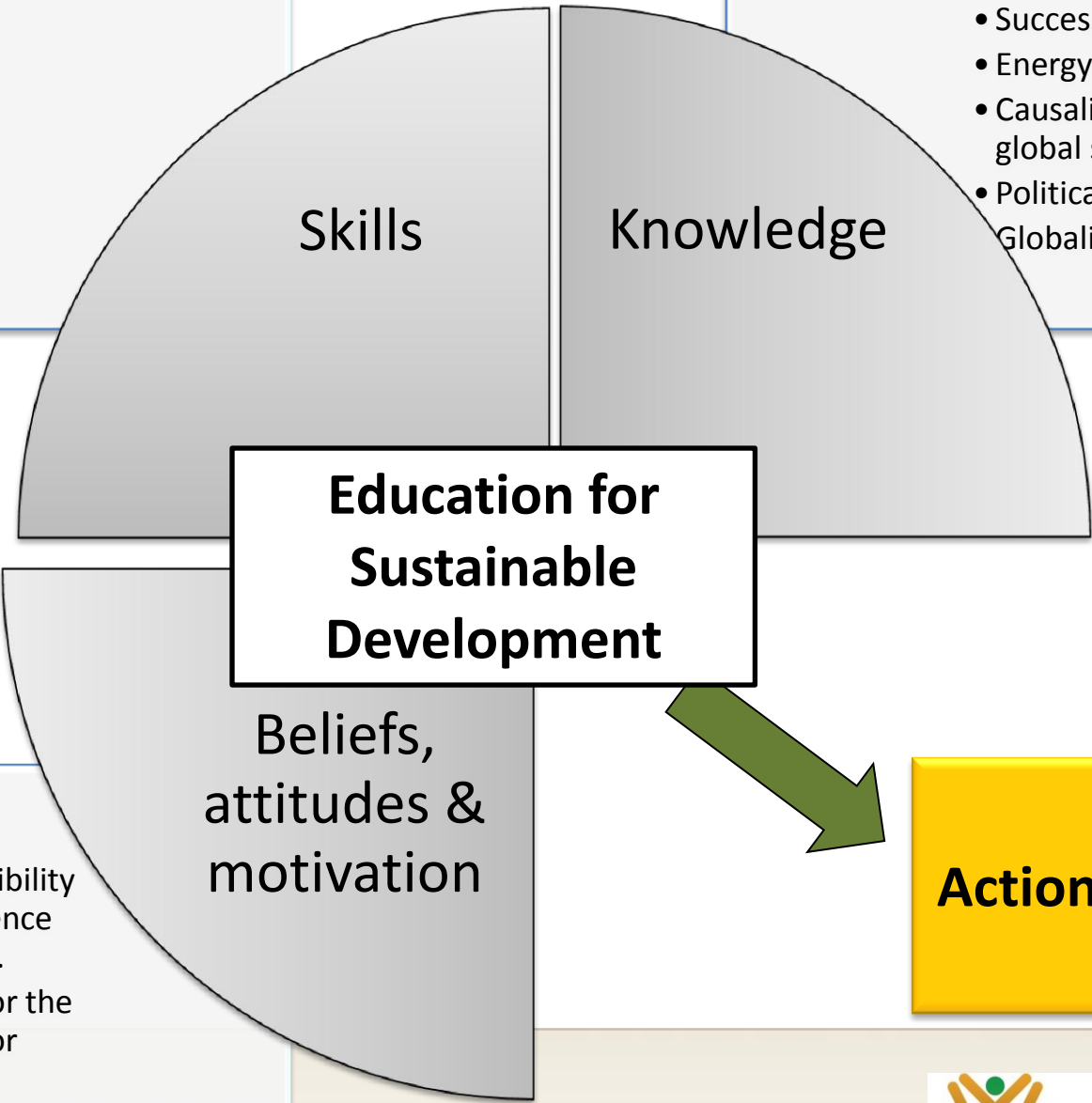
## RQ1:

Has the school succeeded with ESD in terms of giving the students awareness, knowledge and skills for acting for sustainable development?



- Critical thinking
- System thinking
- Collaboration
- Communication
- Problem solving
- Creativity

- Ecosystems
- Succession
- Energy flow
- Causalities between local and global systems
- Political systems
- Globalization



- Belief in one's possibility and ability to influence one's surroundings.
- Hope and visions for the future motivated for action towards environmental issues

**Action competencies**

# Students' awareness of sustainable development

Are you with grocery shopping for food? Has participation in the project affected how you think about food in the store?

What do you consider as benefits and disadvantages eating locally produced food? (taste, availability, money, health, etc.)



# Students' knowlegde of sustainable development

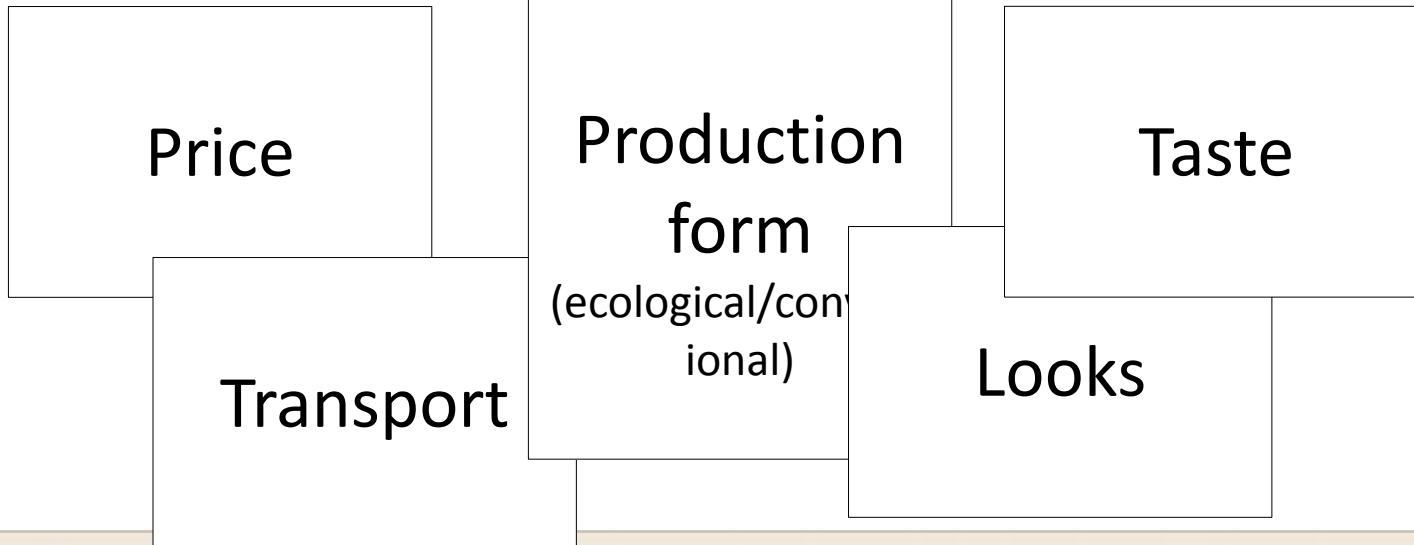
Can you tell me what sustainable development means?  
What's it about?



Have you learned about sustainable development in the  
project of the Sustainable backpack? In what way, give  
examples.

# Students' skills for sustainable development

Consider the criteria on the following labels . What criteria are important if you had to choose a food product - please justify your answer.



# RESULTS



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# Practical skills

M: Can you tell us about the food for the dinner tonight, what you have acquired yourself, what is bought and what you believe was locally-produced and so on.

Pupil 1: Reindeer-meat, we were hunting our-self...

Pupil 2: At least we had a hunter with us, and was shooting...or he shot it afterwards

Pupil 3: berries are picked by us, we bought the potatoes

Pupil 1: But the potatoes are from our village.

Pupil 2: Yes, probably

Pupil 1: they are!



# Critical thinking

Pupil: And animal welfare and production conditions, somehow, if you know the animals are suffering, then, you do not want to buy the food. And then it really so that such production conditions, that both animals and people who work there have good conditions.

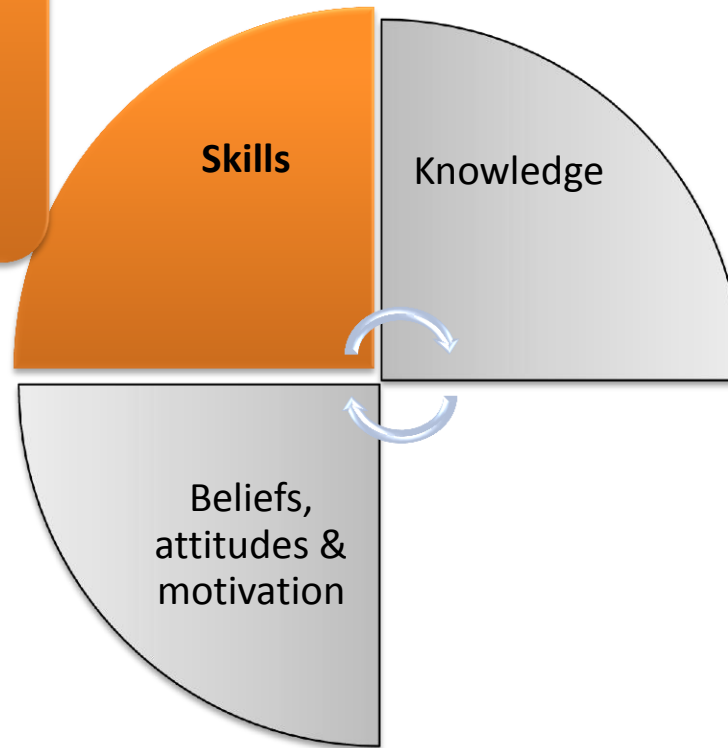
# System thinking

M: But what is the argument, why should we buy food produced in Norway?

Pupil 1: To take care of it like I said earlier, if there is a business selling fish and fish we buy abroad, we do not support what Norway has to offer. Then, if we always buy from other countries, then its no good for the Norwegian companies. And it's no good for Norway, so in the end it will impact us all.

Pupil 2: If we only buy food from abroad, for example, so there will not be any sustainable development of the economy of Norway. So then... many will loose their jobs and ... It's good for the world community, but it is not good for Norway. That is why we have customs, there's a reason.

- Critical thinking
- System thinking
- Collaboration
- Communication
- Problem solving
- Creativity



# Ecosystems & environmental knowledge

M: But you talk a lot about locally produced food, why is that so important?

Pupil 1: To not pollute the environment, for example, that it should have food from far away so it has to be transported by car or boat or so, and then pollute the environment. And then there are no pesticides...or was it was not the, the...

Pupil 2: Organic

Pupil 1: yes, organic, it is much more natural. Much cleaner and yes ...

# Ecosystems & environmental knowledge

M: This year you've been hiking in the mountains. What have you've learned from that? Other than picking berries?

Pupil: About organic food and stuff. How to obtain food in the wild...

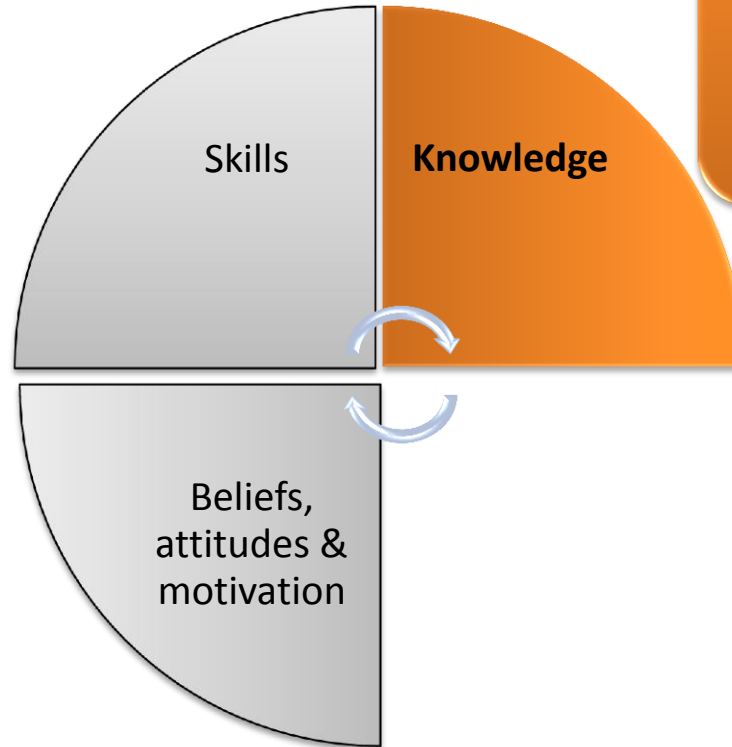
M: Yes...anything else?

Pupil: How important it is to preserve nature, it is very important.

Pupil: We have learned a lot about sustainable development when we have been making the dinner for tonight. And that the food should be locally-produced.

Pupil: Locally-produced and organic food, I think that is what is the main point.

# Results



- Ecosystems
- Succession
- Energy flow
- Causalities between local and global systems
- Political systems
- Globalization



# awareness

E: Are you thinking such things when you are with and all food at home .

Pupil 1: A few times

Pupil 2: jaaa

Pupil 1: I buy such Røros milk instead of buying regular milk.

Pupil 1: I'm aware of how much ingredients we actually have around us, we can get it form the village and region.

Pupil 2: mm

Pupil 3: And also, it does not cost that much really to make a meal ' cause we do not buy anything, or go to the store.

Pupil 2: true, we can do much by ourselves.

Pupil 3: Mmmm

# abilities to influence

M: And then, if I send you to the grocery store, what is it that is most important and what's less important when you buy a food product (meat)?

Pupil: Taste, is more important than price in a way really I would rather buy a little more expensive than first prize because I think often it is better. I feel it is safer in a way.

And although I would think animal welfare, but we get to know very much about the meat or animals... If the animals has been well taken care of.

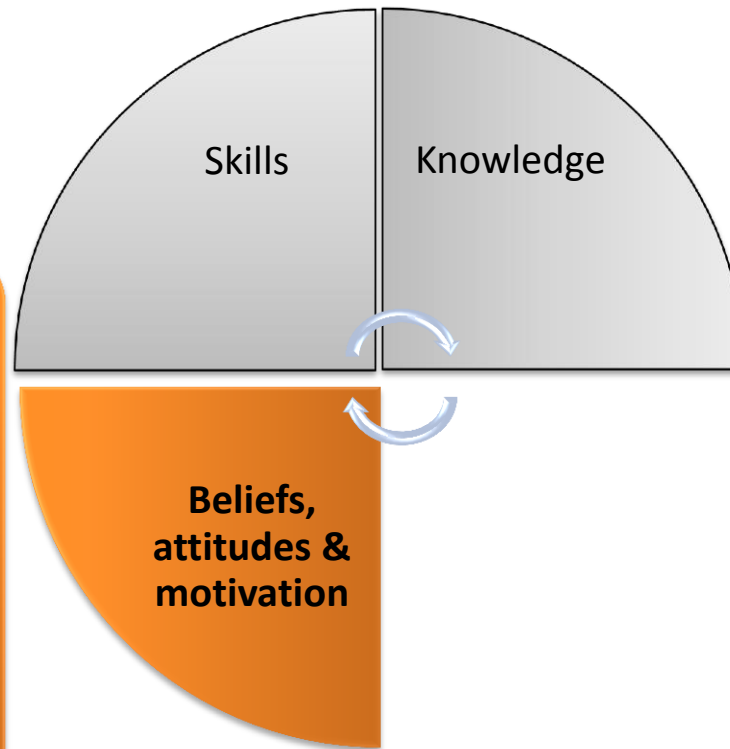


# Motivation & care for nature

Pupil: I want to take care of nature and not pollute it.  
Hmmm also to use it wisely

Pupil: I like living her because of the nature, and the mountains, lots to do

# Results



- Belief in one's possibility and ability to influence one's surroundings.
- Hope and visions for the future motivated for action towards environmental issues

- Critical thinking
- System thinking
- Collaboration
- Communication
- Problem solving
- Creativity

- Ecosystems
- Succession
- Energy flow
- Causalities between local and global systems
- Political systems
- Globalization

Skills

Knowledge

**Education for Sustainable Development**

Beliefs, attitudes & motivation

- Belief in one's possibility and ability to influence one's surroundings.
- Hope and visions for the future motivated for action towards environmental issues

**Action competencies**



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## RQ2:

What are the factors that can be identified as central to ESD in this school?



# Quality Criteria for ESD-Schools

- 1. Quality criteria regarding the quality of teaching and learning processes**
- 2. Quality criteria regarding the school policy and organisation**
- 3. Quality criteria regarding the school's external relations**

Breiting, Soren; Mayer, Michela; Mogensen, Finn  
"Quality Criteria for ESD-Schools" Guidelines to  
enhance the quality of Education for Sustainable  
Development

# Teachers' **understanding** of education for sustainable development

Describe how you have worked with sustainable development in the project of the Sustainable backpack?

How important has multi- or interdisciplinary teaching, inquiry-based teaching and collaboration with external actors been, when teaching SD?



# Teachers' **understanding** of education for sustainable development

What are the key factor that has been important in terms of improving your students understanding and competencies in sustainable development?



# Teachers' **understanding** of education for sustainable development

Would you call this school for a sustainable school? Justify

What advice would you give to teachers at other schools who want to work with sustainable development?





# RESULTS



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# School leader...

Teacher 1: It is important that the school leader supports the enthusiasts to actually go ahead with good ideas.

Teacher 2: Otherwise there will be nothing of it, quite simple

**2. Quality criteria regarding the school policy and organisation**

Teacher 3: Yes, it must be grounded by the school leader.

Teacher 1: Thus, when you get support from the leaders, they will also be the driving force.

# ...& colleges and teaching

Teacher 1: We are very good at «give and take».

Teacher 2: Flexibility. That is very important.

Teacher 3: The most important, you know, is that one must have the courage to let go. Must dare to have a bit of “ice in your stomach”. Dared to wait and see, so

## 1. Quality criteria regarding the quality of teaching and learning processes

So the book, but a little in a slightly different way. Yes, because for the pupils to perform in school, they have to be well-being, and then they need the motivation to learn.



# Multi- or interdisciplinary projects

M: In the project, do you see the other subjects and relate it to other lessons?

Teacher 1: There are many familiar themes, so there are several links.

Teacher 2: In relation to the climate.

Teacher 3: And natural resources.

## 1. Quality criteria regarding the quality of teaching and learning processes

Teacher 4: So, actually , I 've used it in Religion.

Teacher 2: And of course Social sciences. Population growth for example and food.

Teacher 4: And we try to put SD in a larger context of other subjects

Teacher 5: And it appears in Science as well,

# Local authority/the municipality

Teacher 1: We are (the school) involved in the municipality project. Tolga 's is an ecological municipality. So it is very central in our school and in the community.

Teacher 2: So the municipality back us up and work with us.

Teac **3. Quality criteria regarding the school's external relations**

School leader: We have a platform for growing and learning written by the administration of the municipality. The plan includes the teacher and how teaching should include the general part of the curriculum.

# Local community

Teacher 1: There are often one or two students who publish their reports in the local newspaper.

Teacher 2: So I feel a bit that it is both ways. The community uses us as well .

### 3. Quality criteria regarding the school's external relations

Teacher 1: The school is part of the local environment, so they know what they have in the surroundings.

School leader: Creating the pride and identity of a local community.

# Local collaborators

E: The school collaborate with many local actors. How do you experience that as a teacher?

Teacher 1: Oh , that's a relief.

Teacher 2: **3. Quality criteria regarding the school's external relations**

Teacher 3: And I feel it is a security in many ways!

A strong vision from  
the principal

Local collaborators in  
the community

**Central ESD  
factors**

Multi- or  
interdisciplinary  
projects

Local authority/the  
municipality





As a teacher and the school leader, I have experienced the project as an excellent opportunity to develop and implement an interdisciplinary project at the school. We have been able to elaborate and develop our knowledge and competences in a way we otherwise not would have prioritized.



The aim of the project has been to provide students with a greater understanding of sustainable development in an environmental, economic and social context. This spring, the County Minister, visited us. At that time the students were given the opportunity to present the project. Among other things the students shared that favorable academic results are due to [the project] not in spite of it.

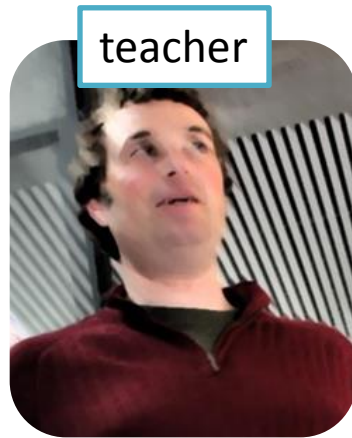


Through the Sustainable Backpack we have established collaborations with various external actors within our local community. It is important for us as a school to maintain these collaborations with external actors within community to develop new curricula within other topics.



# Summary

- The students have developed awareness, understanding and competencies for acting for sustainable development
- The school-leader with a clear vision and ideas on how to integrate sustainable development in ordinary teaching
- The teachers follow up this vision and implement ESD into their practice
- ESD work strongly rooted in how to make the rural community sustainable for the future and
- The students are well aware of this focus and all concerned on supporting their community.



# Conclusion

- ESD at the school should be rooted by the leadership at the school
- Teachers need support, encouragement and acknowledgement for integrating ESD in their practice
- Focusing on sustainable development in the local community can be engaging and motivating for students



# Challenges



Transferability of this school project to other schools

What about schools that dont have a small community?

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