

# NiSE webinar

# Connie Svabo

Centre for Research in Science Education and Communication, FNUG, University of Southern Denmark

# Visual Methods

Taking a look at experiences of STEM Education

**Visual methods** provide opportunities to work in multifaceted ways with *human experience*, including emotional and sensory dimensions.

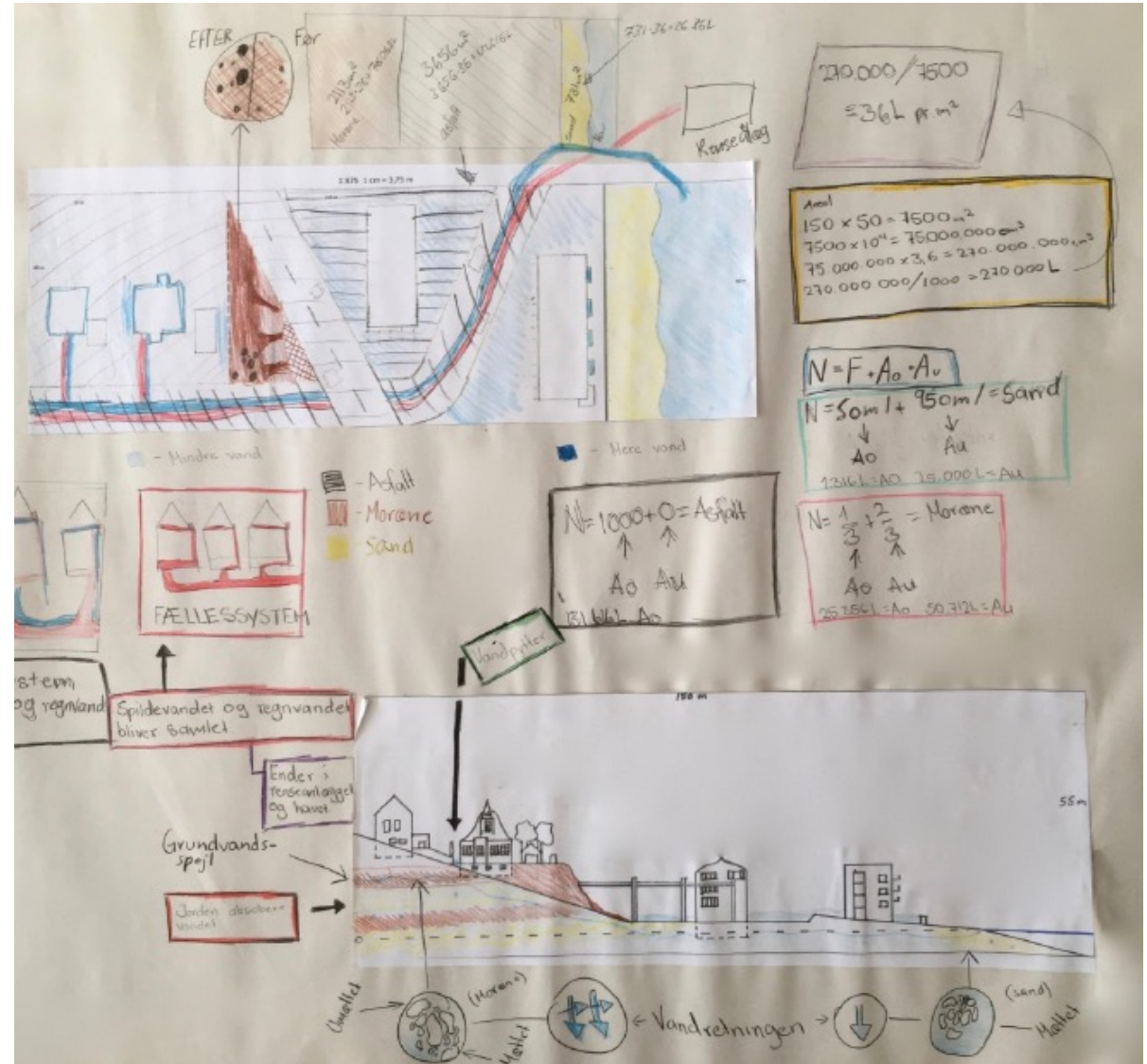
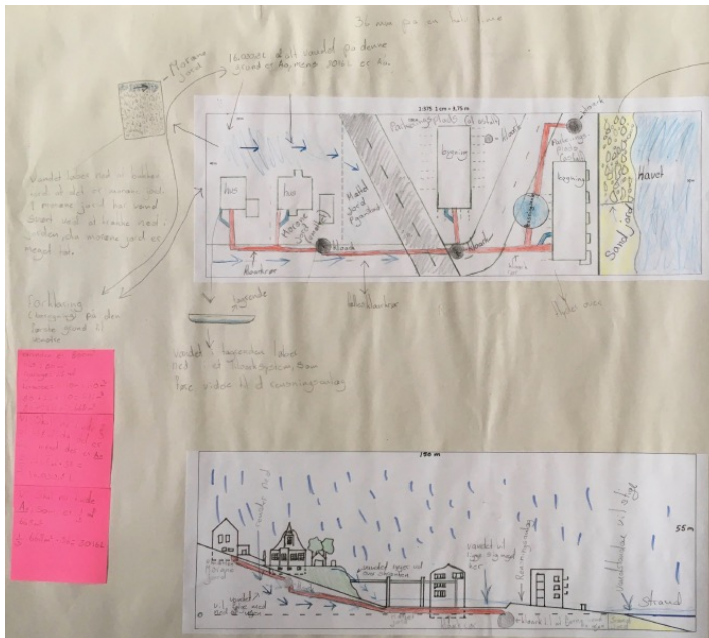


# Four examples of working with **visual methods**

# Pupil drawings

in a design-based research project of mathematical **modeling** as interdisciplinary practice in lower secondary school.

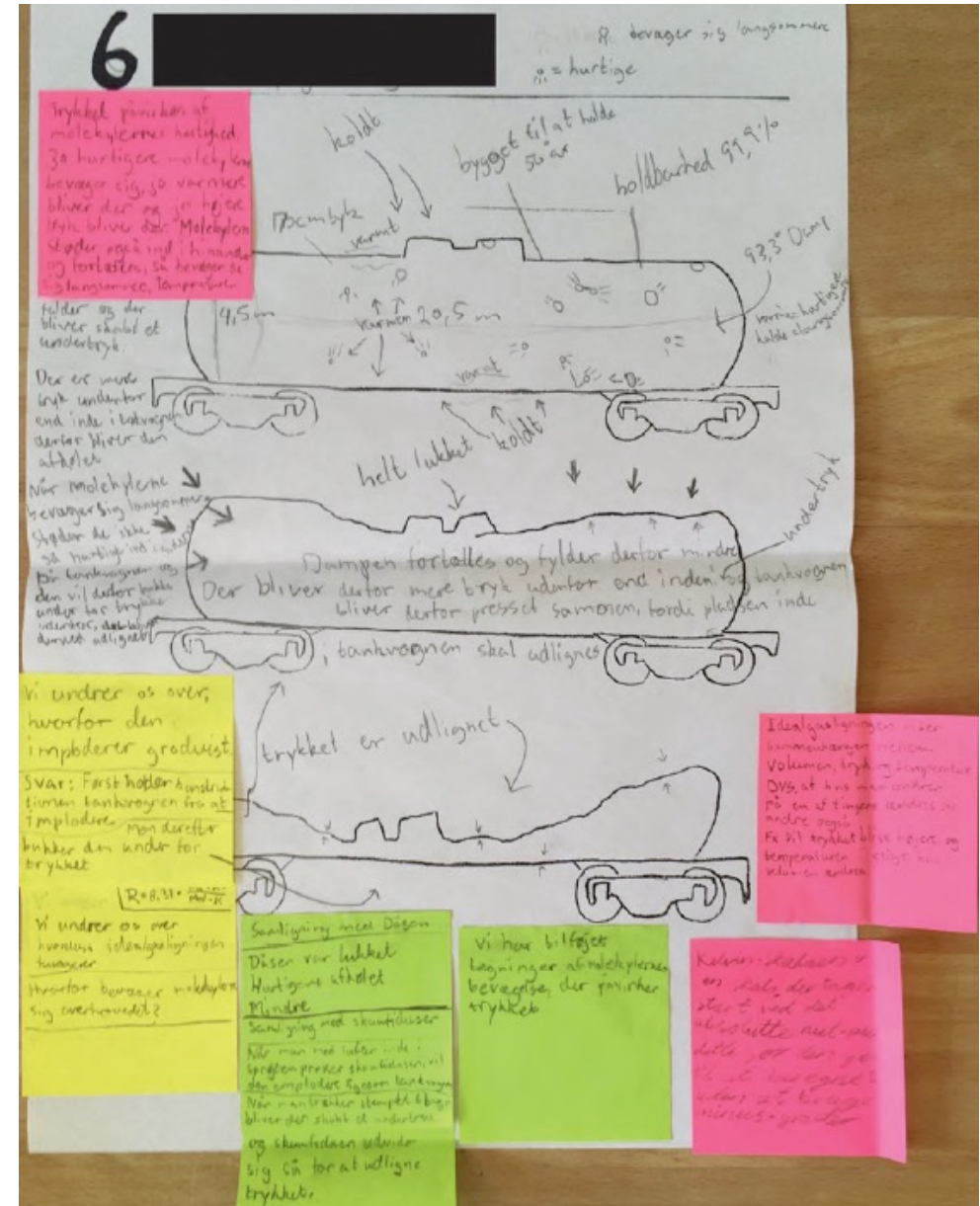
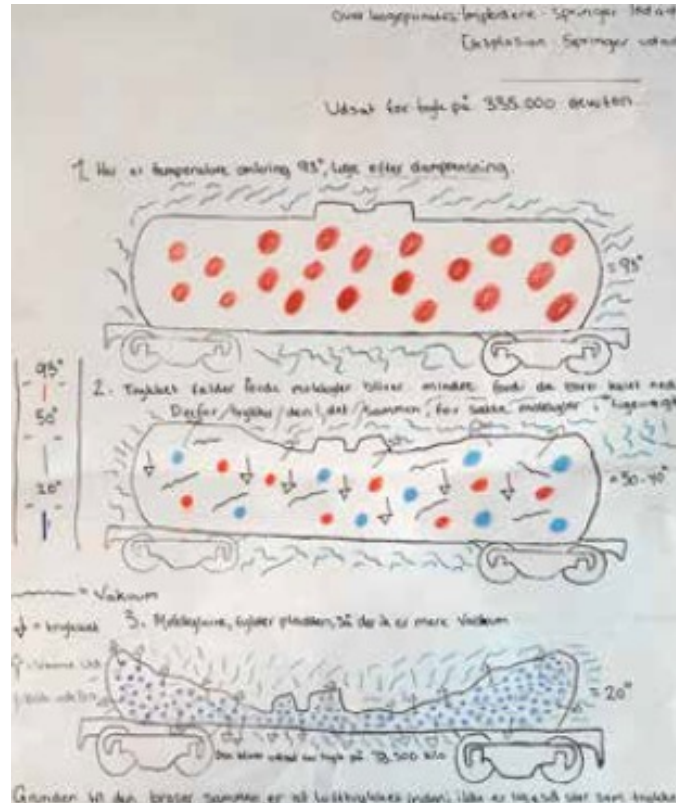
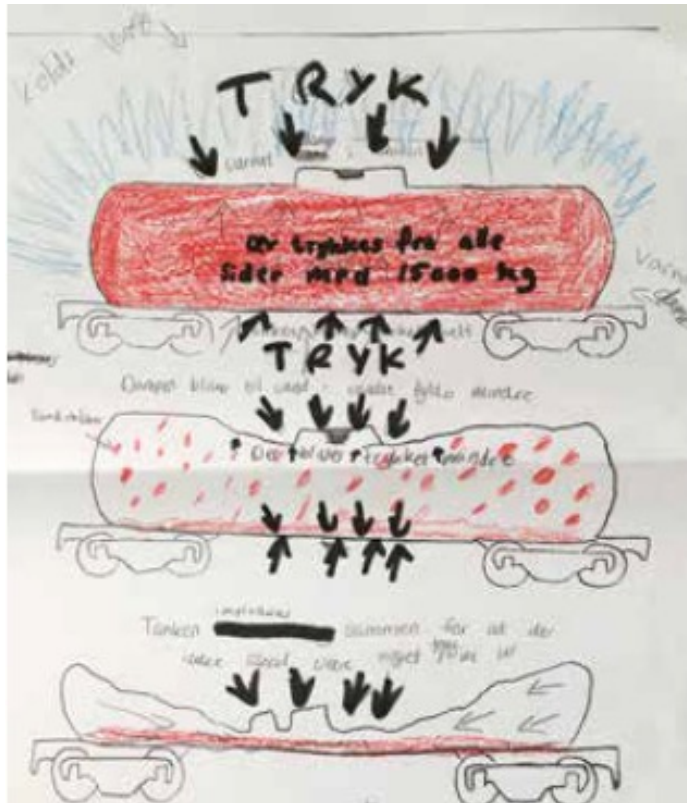
# Water seepage in different soil layers



Students models of water seepage in different soil layers (Auning, 2021).



# Tanker truck implosion



# Photo elicitation

as a way of **inquiring into the experience** of  
university Mathematics





Student A: Picture chosen to the word 'high school'

Student A: Picture chosen to the word 'university'

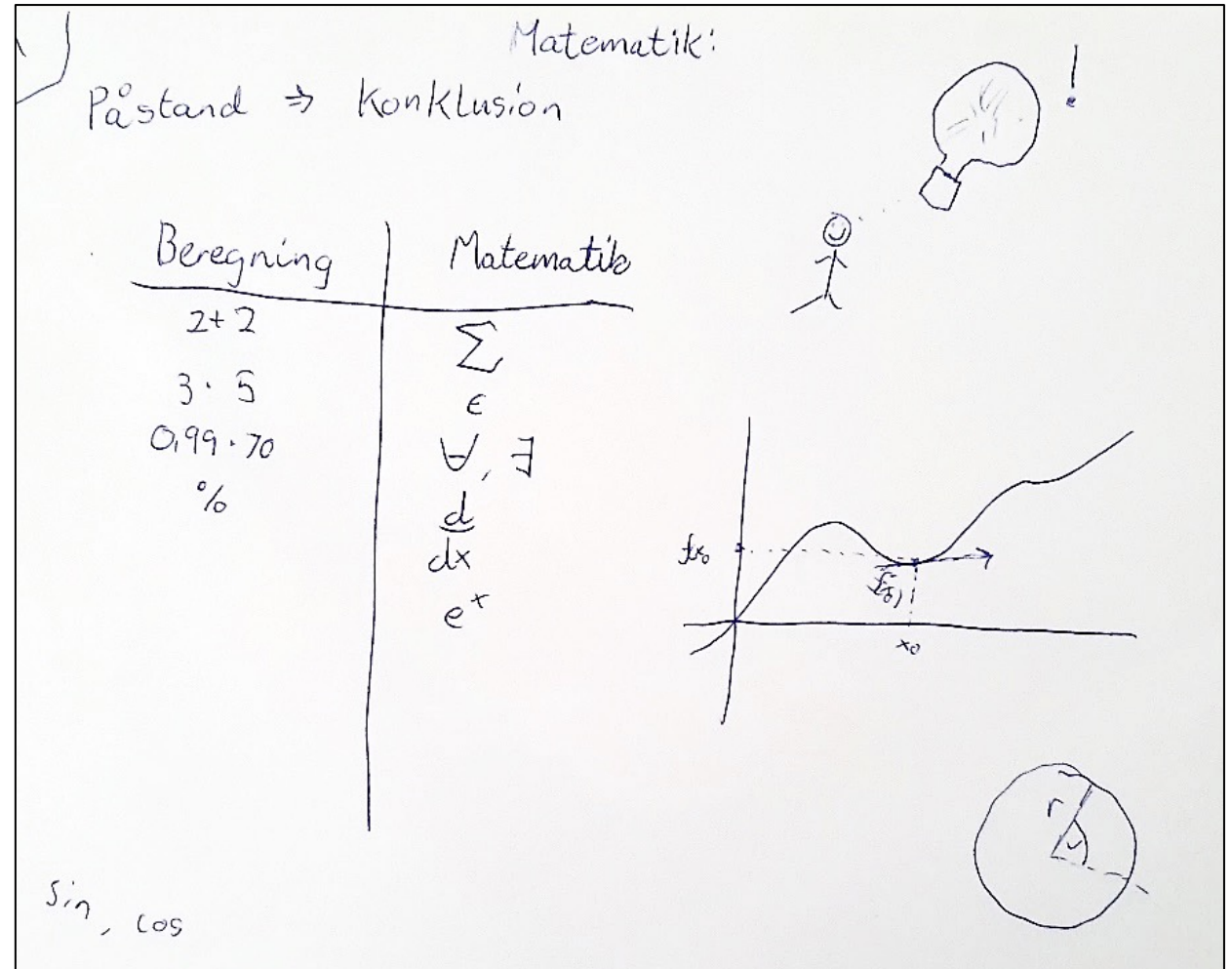




Student B: Picture chosen to the word 'mathematic'



Student B: Picture chosen to the word 'mathematic'



Student B: Drawing of 'what is mathematic for you?'

# Visual essay

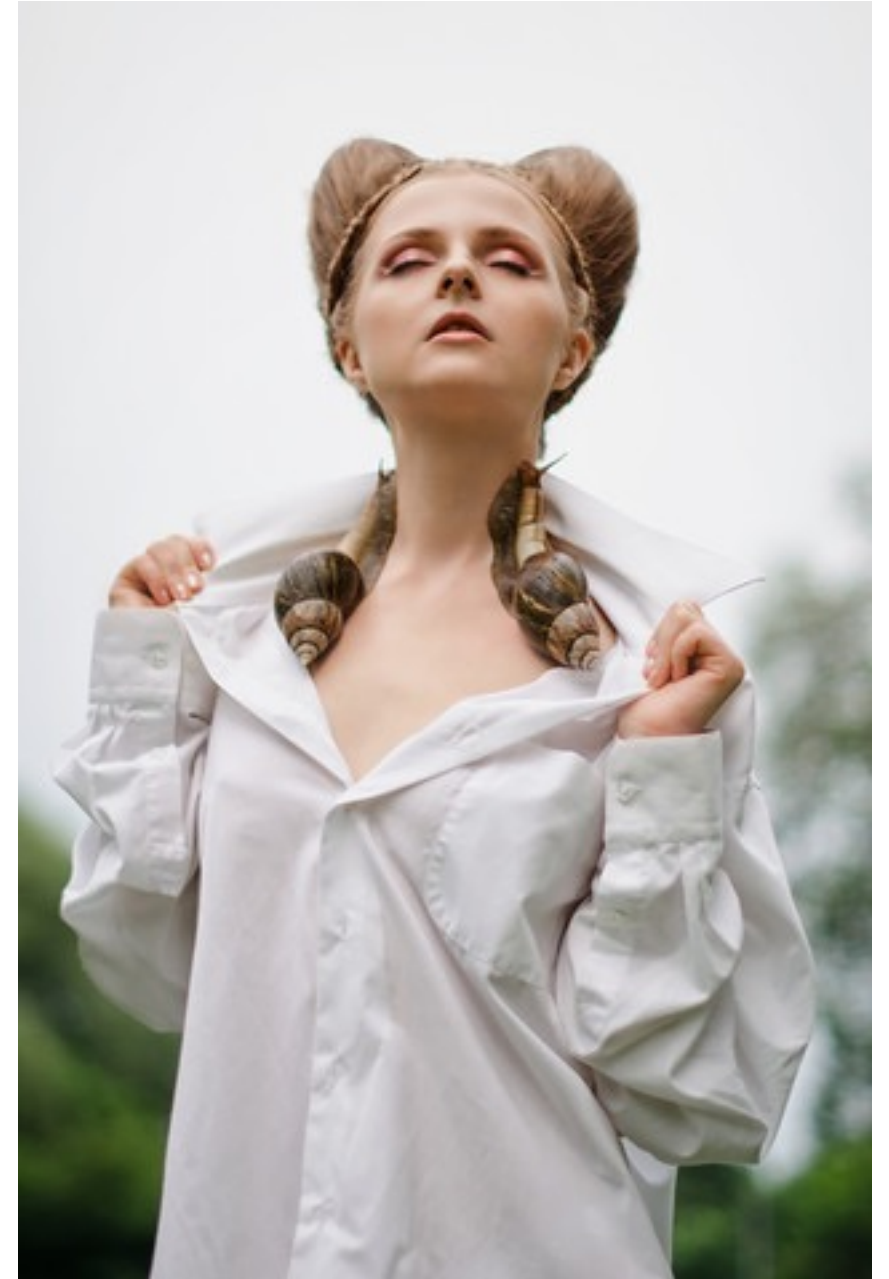
as a **hybrid genre** with the capacity of working with nature-culture ambiguity

# Visual essay: Staying with the **Nature-Culture** Trouble





Use  
**aesthetics**  
making  
special

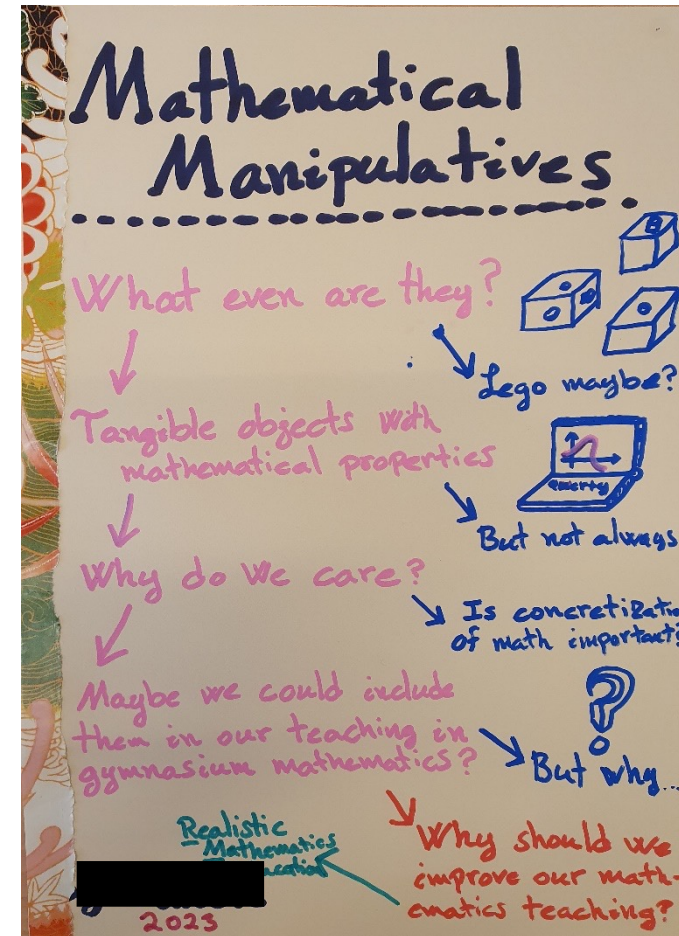
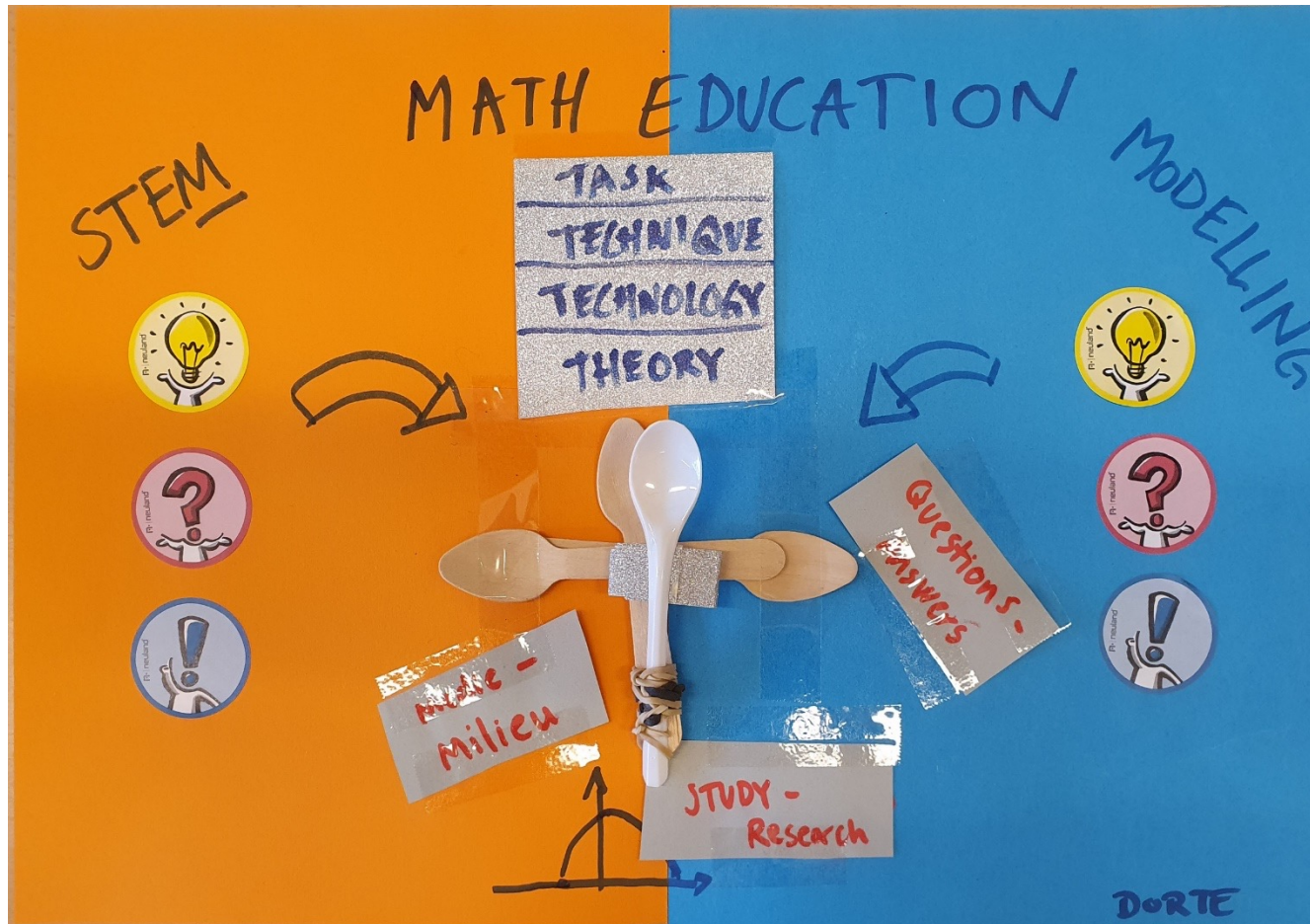




# Poster prototyping

for **communicating** and **sharing** emerging research projects in university Math and Science Education

# Prototyping posters for research projects



|                          |              |  |
|--------------------------|--------------|--|
|                          | Researcher   | Informant /participant                       |
| Existing visual material | Visual essay | Photo elicitation<br>e.g. Visual Explorer    |
| Newly produced           | Poster       | Pupil drawings<br>Student drawings<br>Poster |

# Visual methods in a paradigm of **qualitative research**

# References

Andersen, L. Aa. (2022). *Overgang fra gymnasie til universitet: Studerendes matematik-relaterede affektive felter*. Syddansk Universitet. Bachelorprojekt.

Auning, C. (2021). *Styrkelse af folkeskoleelevers modelleringskompetencer gennem et tværfagligt samarbejde mellem naturfag og matematik*.

Rasmussen, Kim. (2013). *Visuelle tilgange og metoder i tværfaglige pædagogiske studier. En antologi baseret på erfaringer og indblik fra forskning, udviklingsarbejde og undervisning*. Roskilde Universitetsforlag.

Rose, Gillian. *Visual Methodologies*

Svabo, C. & Borch, KB (2024). *Kommentar i MONA*

Colourbox images, posters by Dorte Moeskær Larsen and student