

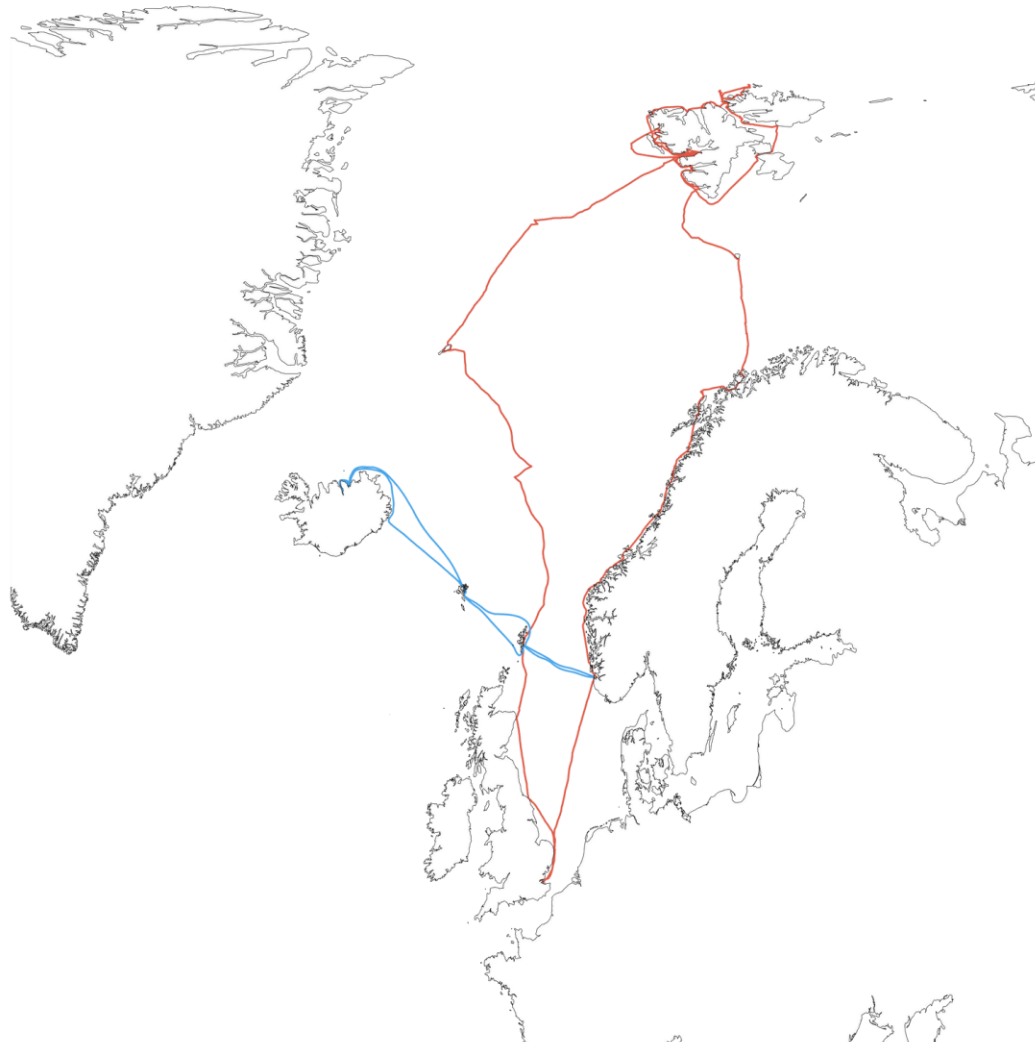
ARCTIC SENSE: USING VIRTUAL REALITY IN MARINE EDUCATION

Rasmussen, MH, Stoller, A, Grove, T, Ydesen, K, Káradóttir, E, Mesiti, S and Heide, A

Background:

- The project was funded by Nordplus Horizontal in the period: 2021-2024
- Three schools (Denmark, Norway and Iceland) and a museum in each country: Ocenarium (Denmark), Andenes Whale Center (Norway), Húsavík Whale Museum (Iceland)

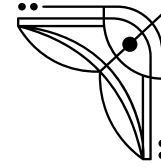
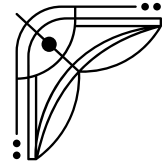
Phase 1: Expeditions: Summers 2019 and 2021



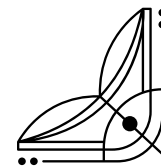
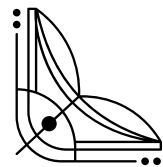
In blue you will see the Arctic Whale 2019 expedition route and in red the Arctic Sense 2021 expedition route with Barba (barba.no). Video material was filmed using 360 degrees camera



Phase 2: Development of teaching material to be used with VR- goggles



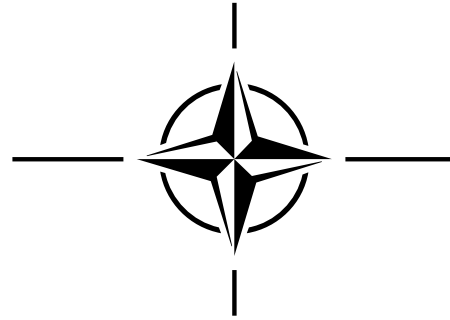
JOURNAL BELONGING TO:



Phase 2: Development of teaching material to be used with VR- googles



VIRTUAL REALITY FOR OCEAN EDUCATION
(ViROE)



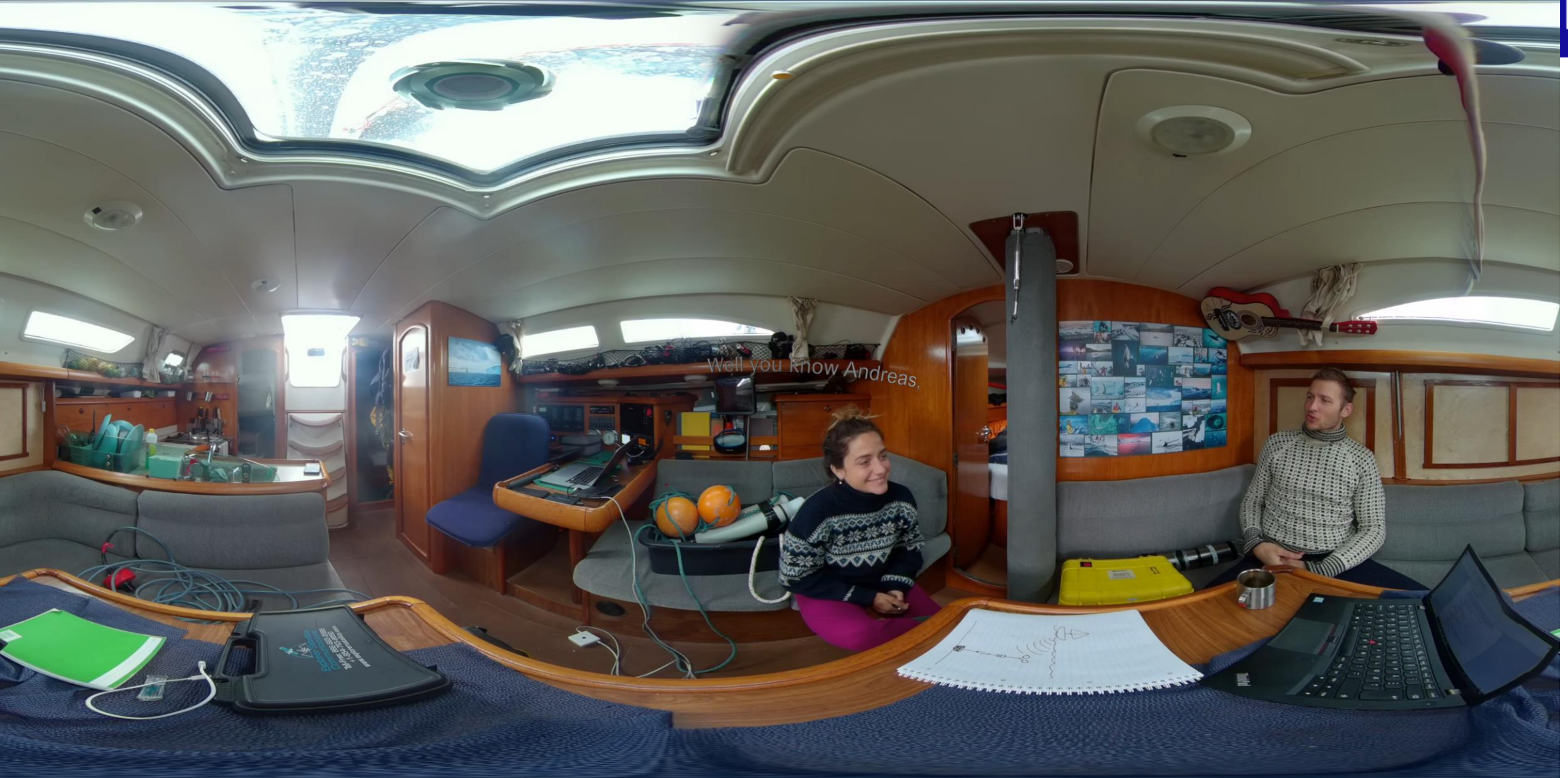
Voyages across the North Atlantic
for ocean conservation

We are joining the Barba team on two expeditions:

ARCTIC WHALE
NORWAY - FAROES - ICELAND

ARCTIC SENSE
NORWAY - SVALBARD - JAN MAYEN - ENGLAND

Example of how to do whale research:



Example of different species of whales and whale biology



Climate change:



Phase 3: Trials

Húsavík Whale Museum, Iceland summer 2022



Phase 3: Trials

- Borgarhólsskoli in Húsavík, Iceland, October 2022
- 1 day with 2 x 30 school kids



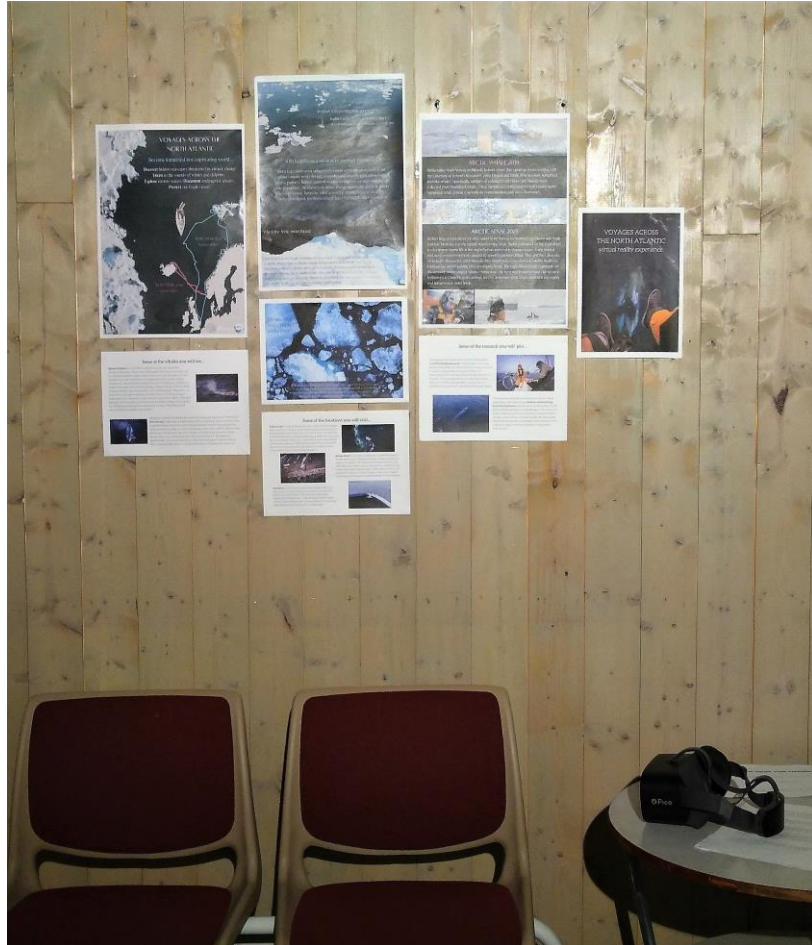
Phase 3: Trials

- Borgarhólsskoli in Húsavík, Iceland, October 2022
- 1 day with 2 x 30 school kids



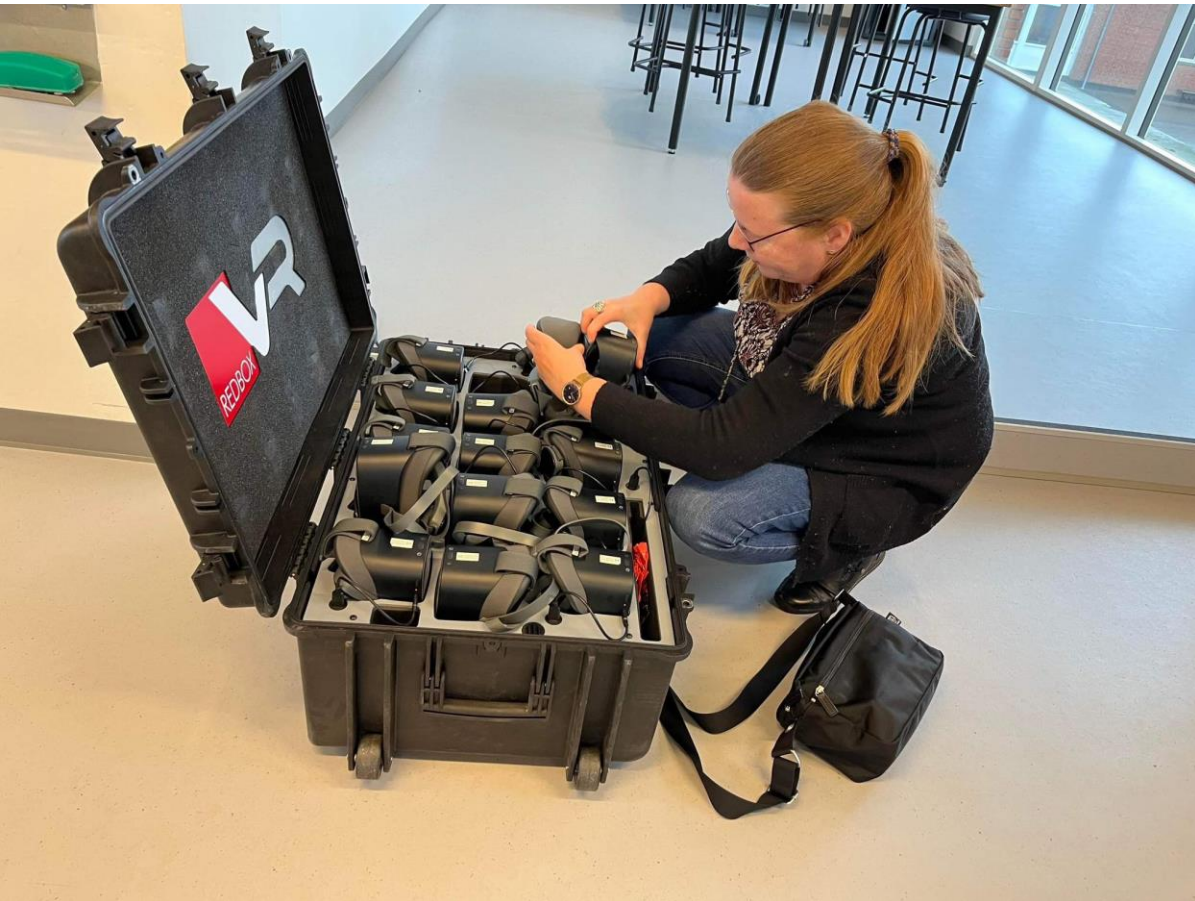
Phase 3: Trials

- Andenes Whale Museum (November 2022)
- 2 weeks with school in Norway (November 2022)



Phase 3: Trials

- Gedsted school, Denmark (January – April 2023)



Phase 3: Trials

- Ocenarium, Hirtshals, Denmark (summer 2023)



Phase 4: Evaluation



- Schools:
- Different durations: 1 day in Iceland (37 school kids), 2 weeks in Norway (120 school kids) og 2 months in a school class in Denmark (20 kids)
- Overall positive feedback
- Learning – most in Denmark – Iceland – experience for a day

Phase 4: Evaluation



- ViROE classroom program questionnaire / Iceland
- Please describe your experience completing the VR program. In this answer, please focus on your experience using the headsets and tablet. Did you have any technical problems with the headsets or tablet?
Yes, in the beginning, but then it worked fine
- Did the students have many problems using the headsets? Did you have any students that felt sick wearing the headsets?
yes, a few got sick, but then they stopped and had a break
- Did you find the educational material (videos and journals) relevant for the students and appropriate for their age?
- Yes
- Did the students appear engaged and/or enjoy the program?
- Yes, very much
- Do you believe this provided an experience for the students that would influence their future interest in science, nature, and/or conservation?
- No, but you never know 😊
- Would you be interested in using this program again for future classes?
- Yes
- How did you find the duration of the program? Over how many days did you complete the program?
- Would have needed longer time to go through the material
- Did the students have trouble understanding the videos and journal exercises in English?
- No
- Please share any other suggestions or changes you would make to the program below.

Phase 4: Evaluation



- Museums
- General positive feedback from all the tourists from the different museumss
- What we learned:
- It is best to have a person helping with the VR-goggles (In Iceland we made it simple, so the videos were playing in a loop)
- In Denmark to headset were destroyed by tourists

Phase 4: Evaluation



- **Please circle your answers below**

Did you find the exhibit interesting and/or engaging?

- yes no somewhat

- Did you learn new information you did not know previously?

- yes no somewhat

- Did you find it easy to use the VR headset?

- yes no somewhat

- Did the exhibit make you more interested in the ocean and the Arctic?

- yes no somewhat

- Did the exhibit cause you to want to make changes in your life to help protect the ocean?

- yes no somewhat

- Optional questions

- Age:

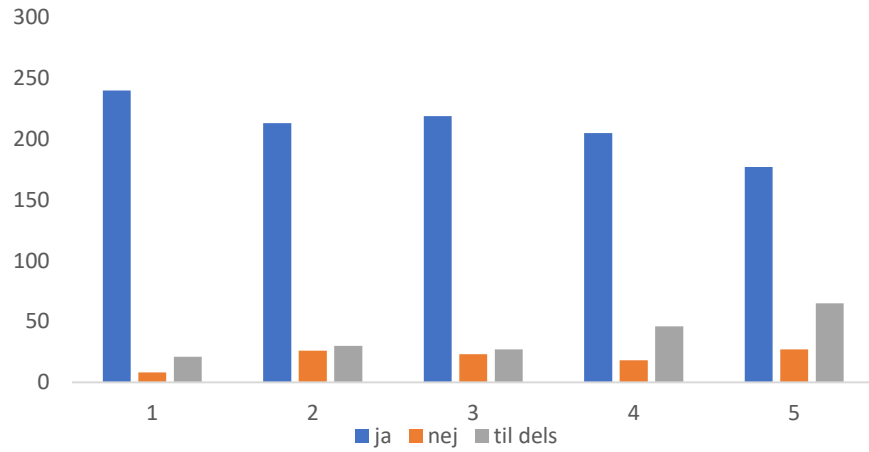
- Nationality:

- **Thank you for participating in the exhibit survey**

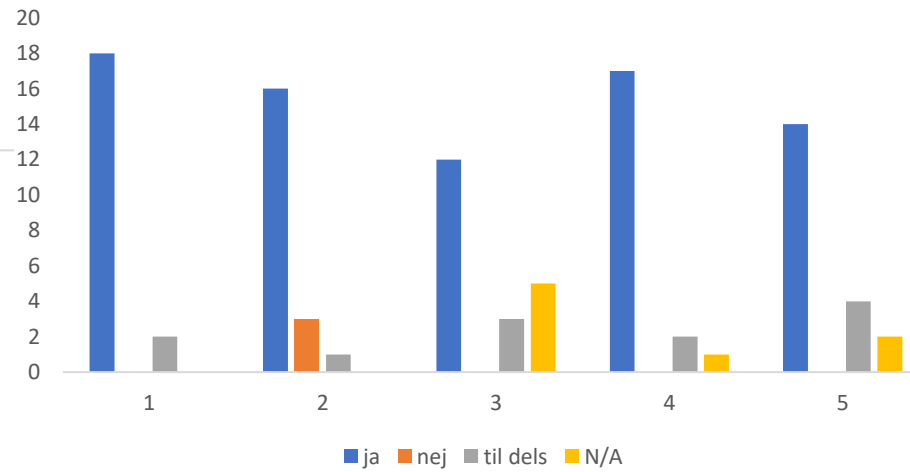
Phase 4: Evaluation



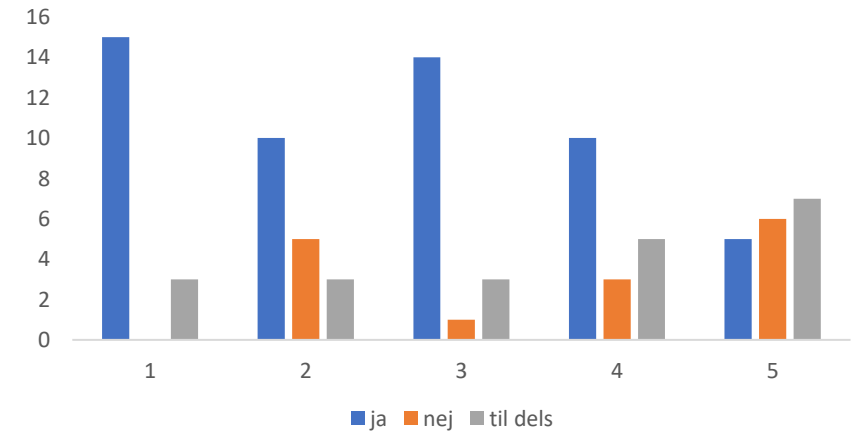
Husavik Whale Museum, Iceland



Andenes Whale Center, Norway



Ocenarium, Hirtshals, Denmark



Háskolalestinn i Húsavík Maj 2024

- 3 x school classes with VR-goggles
- Open house at Borgarhólskóli for parents in Húsavík



Future use of VR-goggles

- Háskolaungafolks – 2 days with 4 school classes in June in Reykjavik
- STEM Húsavík will have the VR-goggles at their STEM library
- Húsavík Whale Museum will use them again this year

Acknowledgement

- Thanks to Nordplus for the funding

