The Mobile Learning Lab «MobiLab»

Concept and Evaluation

Michaela Maurer, Marco Longhitano, Charlotte Schneider, Sandra Nachtigal, Cecilia Mosimann & Julia Arnold

ZNTD – Centre for Science and Technology Education
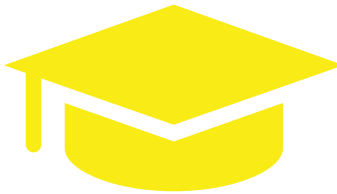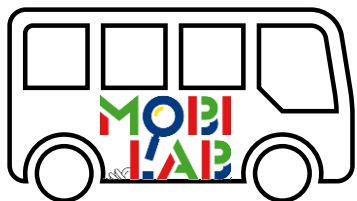School of Education FHNW

22. April 2024

Team

Cecilia Mosimann Hunziker

Michaela Maurer

Sandra Nachtigal

Charlotte Schneider

Julia Arnold

Marco Longhitano

Marianne Dill

assistants

MobiLab – offering…

visit…
school and extra-
curricular activities

education and training

evaluation

Concept of MobiLab experiments

> 150 experiments
> 100 visits each year
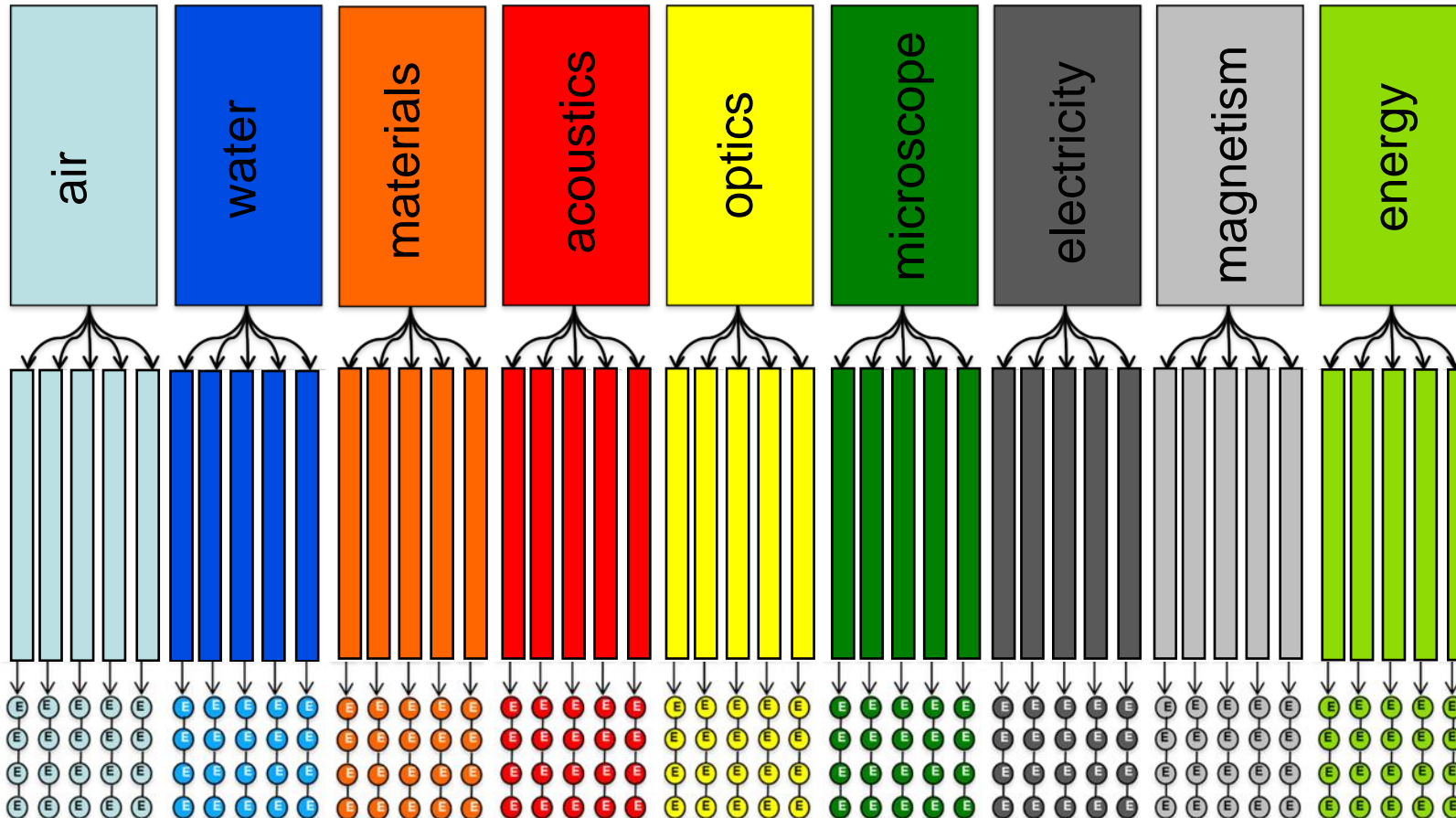
topics

key questions

experiments

Zentrum Naturwissenschafts- und Technikdidaktik | Sandra Nachtigal| MobiLab 8
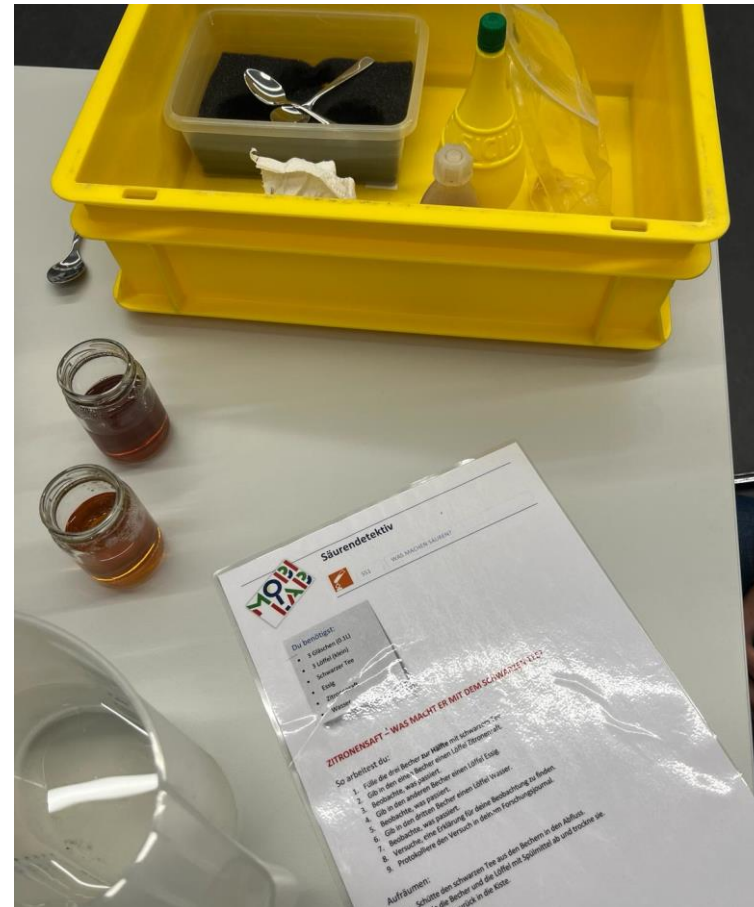
School

School

introduction (20 minutes)

Is black just black?

1) What have we done?

2) What did we observe? *pipette*

3) How do we explain the phenomenon? Why?
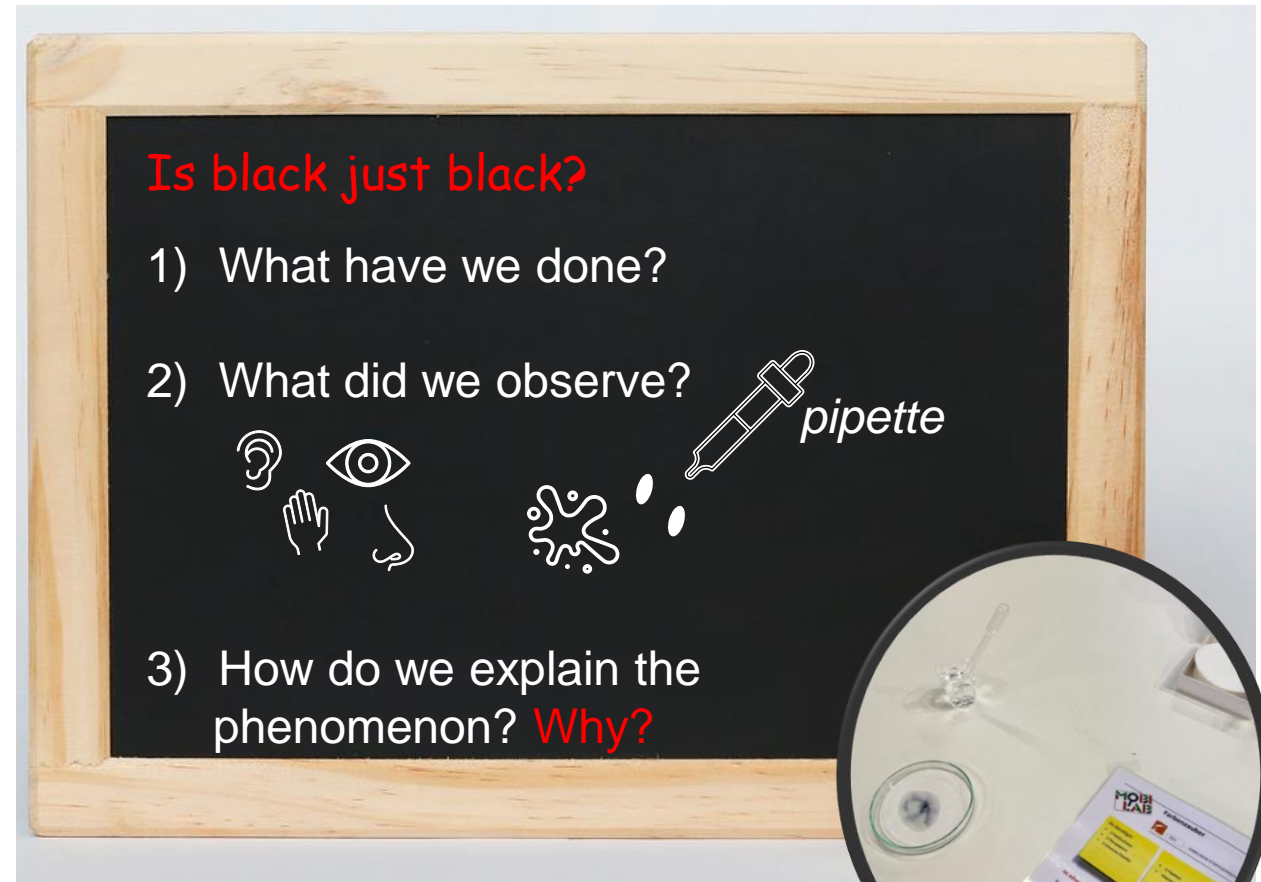
conference (30 minutes)
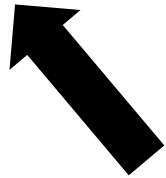
journal entry
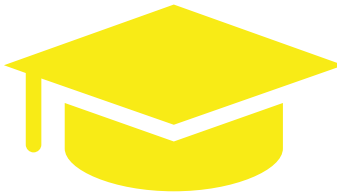
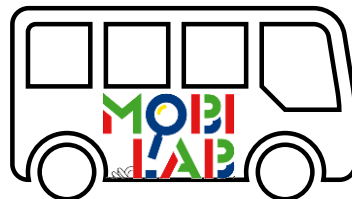**experimentation in teams (150 minutes)**
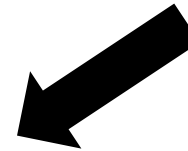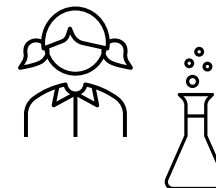
Outreach

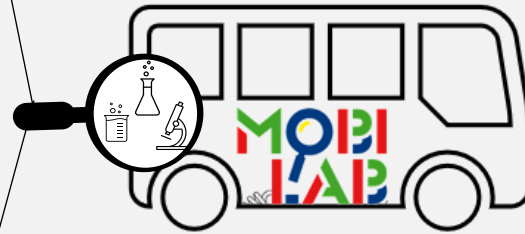# MobiLab – offering…

visit…
school and extra-
curricular activities

education and training

evaluation

Design FEFL-seminar
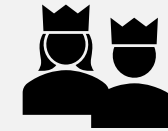
Team A
experts' "sound"
novices "save the coins"

Eberle & Çağlar
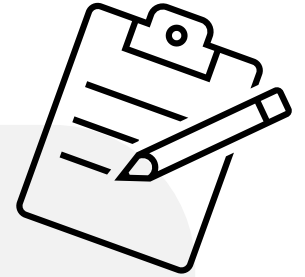
Team B
experts' "save the coin"
novices "sound"

Roth, Ménat & Grether

Dancing seeds: Can you see the sound?

Eberle & Çağlar (2024)

Eberle & Çağlar (2024)
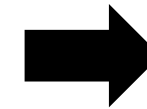
students start to change the experiment

– Are the instructions of the experiment intelligible?
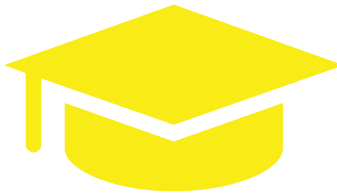
– Any suggestions for improvement?
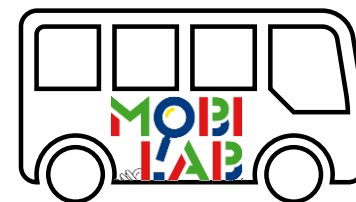
MobiLab – offering…

visit…
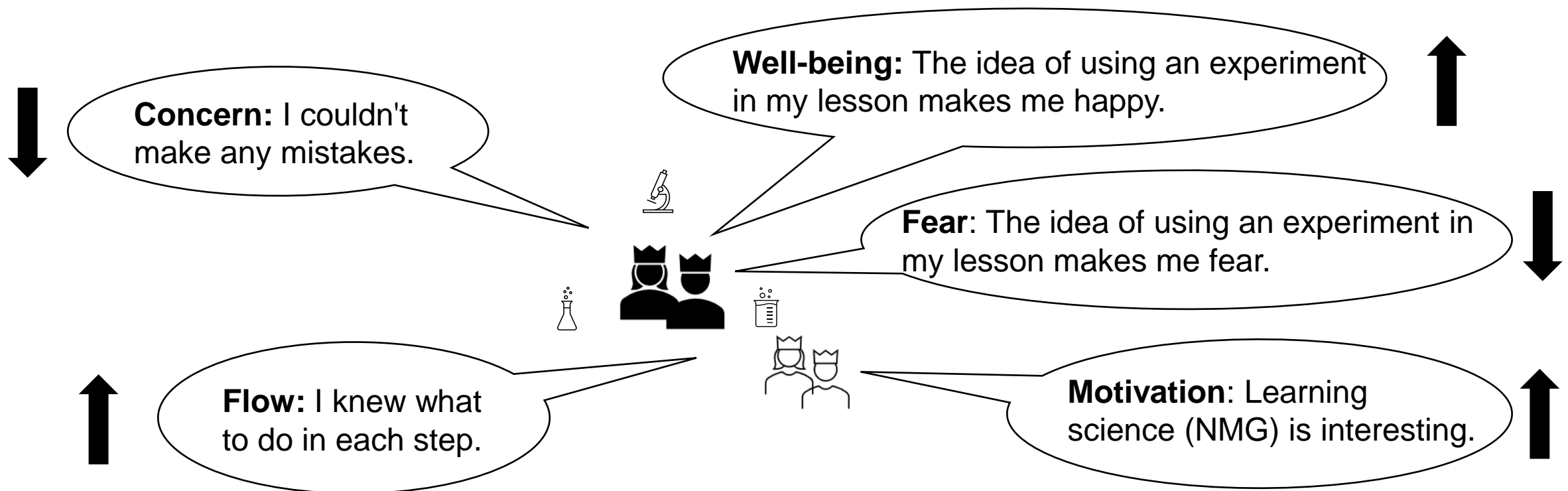school and extra-
curricular activities

education and training

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Design and Methods

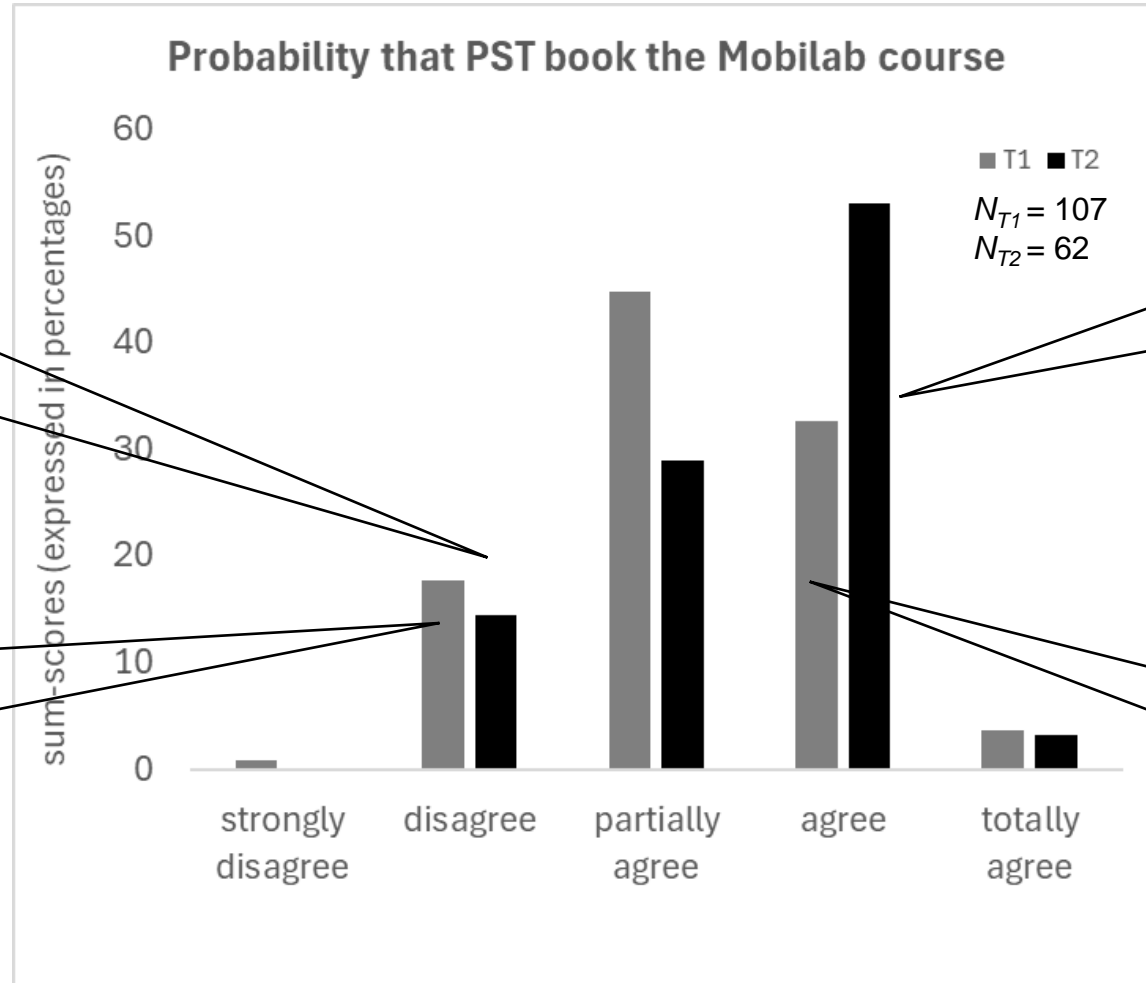What does the pre-service teachers motivate using the MobiLab and what are the barriers?
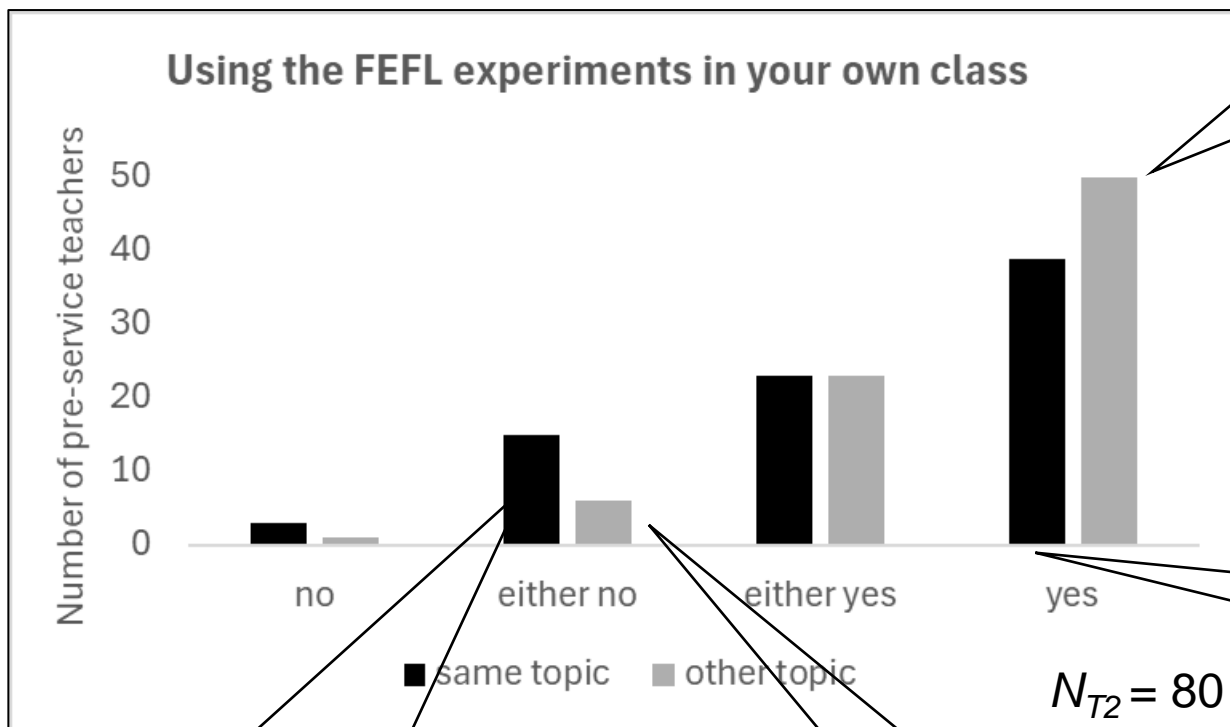
Concern: I couldn't make any mistakes.

Well-being: The idea of using an experiment in my lesson makes me happy.

Fear: The idea of using an experiment in my lesson makes me fear.

Flow: I knew what to do in each step.

Motivation: Learning science (NMG) is interesting.

Results

Annual Meeting of Swiss School Labs 2024   Maurer, Longhitano, Schneider, Nachtigal, Mosimann & Arnold   www.fhnw.ch/ph   13
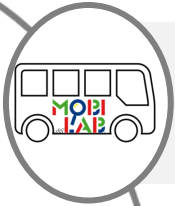
Results

What kind of emotion do you have, about embedding an experiment in your class?
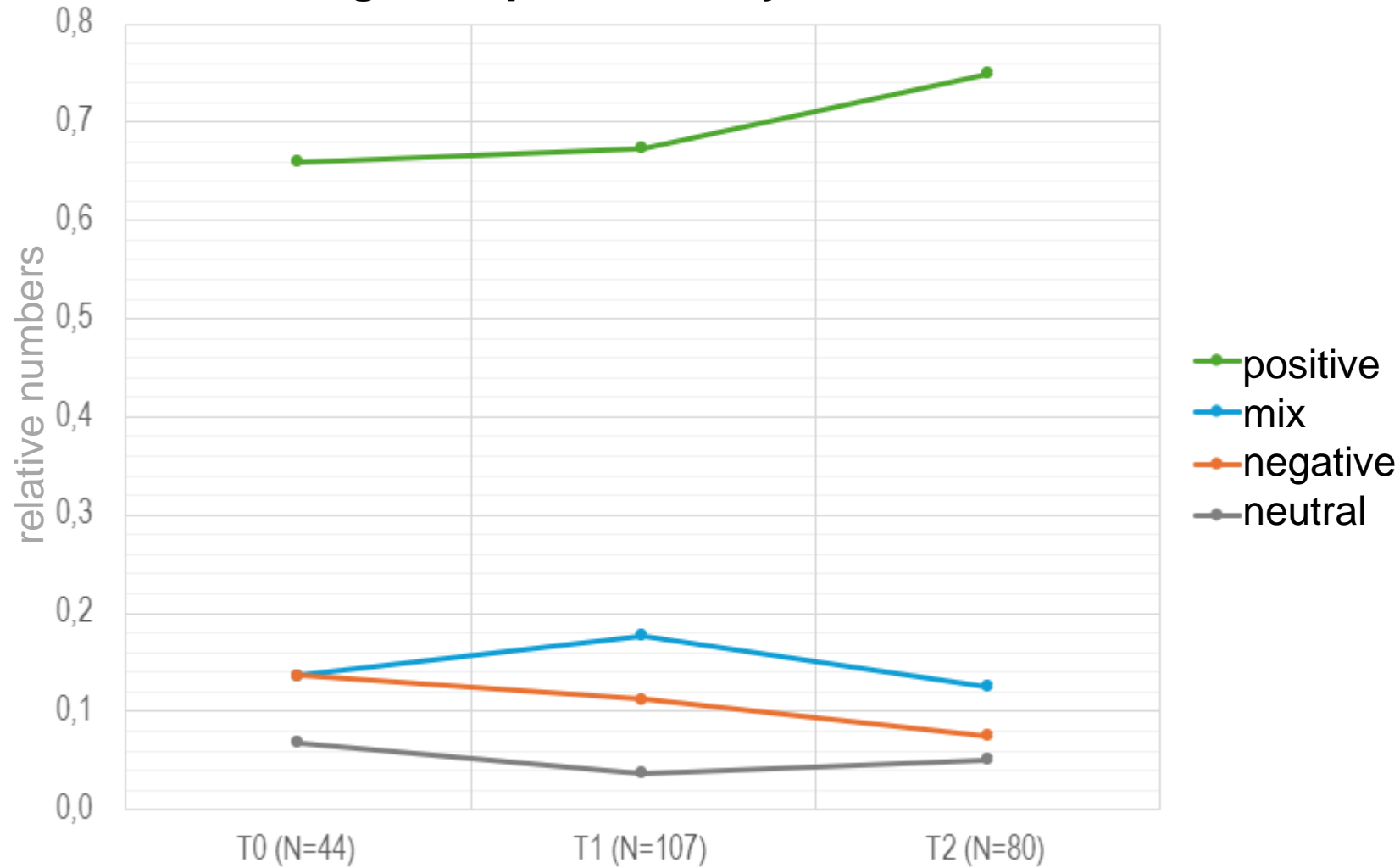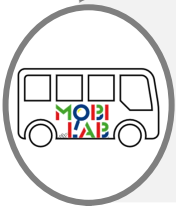
Future?

Discussion and Outlook

Motivation
Flow, well-being, interest (own and pupils), experience, stimulation

Barriers
 fear, time, cost, limitation of NMG, low self-self-assessment (experience), pupils with special educational needs

Relevance of (mobile) learning labs
confrontation with experiments to reduce fear, support for teachers

Thank you for your kind attention ☺