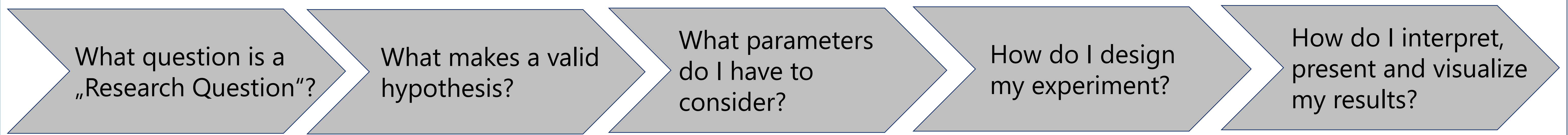


Do YOU understand science? Using Citizen Science to raise scientific literacy

Eva Feldbacher^{1,2}, Gabriele Weigelhofer^{1,2}, Carmen Sippl³, Gregor Jöstl³, and Michaela Panzenböck⁴
¹WasserCluster Lunz (WCL); ²Institute for Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences, Vienna (BOKU IHG); ³University College of Teacher Education Lower Austria (PH NÖ)
⁴Austrian Competence Center for Didactics of Biology, University of Vienna (AECB)

HOW DOES SCIENCE WORK?

Explaining the scientific process in natural sciences by involving school students in the whole research process



School students' examples:

Do vegetated riparian buffer strips lead to lower microbial respiration in the stream?

Stream sediments in sections with riparian buffers show lower microbial respiration than sections without riparian buffers.

Measured variables: CO₂ Production, O₂ consumption, temperature, OM, nutrients

Planning of field sampling and lab work: equipment, methods, protocols, ...

Abbildung 31 Respirationrate im Fladnitzbach bei 30°C (Mittelwert + Standardabweichung; n=5; n=0.05)

CITIZEN SCIENCE PROJECT EXAMPLES – Collaborating with school classes and/or single students

PowerStreams & Wasser schafft

How is land use affecting the self-purification capacity of streams?

Joint retention experiments & other field work

Citizen Science Award 2017

ProAqua

Can bio-reactors be used to remove nitrate in drainage water?

Joint experimental set-up & lab work

Efficiency and detrimental side effects of denitrifying bioreactors for nitrate reduction in drainage water
 Gabriele Weigelhofer^{1,2}, Thomas Hein^{1,2}

Ribust

Can vegetated riparian buffer strips reduce nutrient input into streams?

Joint field work, experimental set-up, and lab work

+ more to come...

...resulting in:

- ❖ 31 pre-scientific theses and 5 SCI publications
- ❖ Participants' learning outcomes: increased understanding of the scientific process, knowledge gain in discipline, more interest and enthusiasm for science
- ❖ Living network for research-education cooperation

PARNTERSHIP PROJECT "INSE": Interdisciplinary network for science education Lower Austria Joining efforts to sustainably raise scientific literacy

