

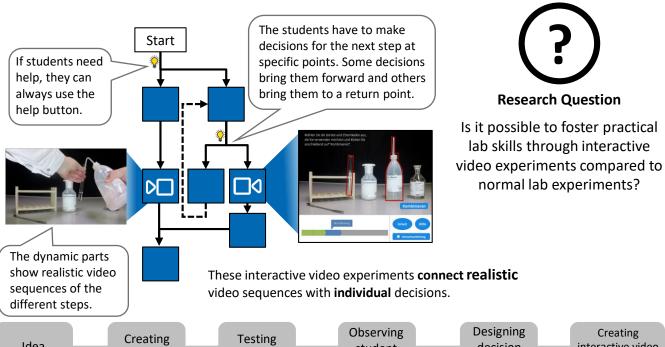
# Interactive Video Experiments as a Chance for Inclusive Learning





### Idea

- Aim: enable everyone to participate in the lab
- Target group: undergraduate students in a general chemistry lab
- **Solution:** interactive video experiments
- **Design principle:** interactivity, individuality and realism
- Videos based on: decision trees deduced from students' real lab decisions



## Study



#### Paper-Pencil Test I (N=600)

- Demographics
- Content knowledge
- **Practical abilities**
- Interest



**Normal lab** n=300

Lab Experiment:

Permanganometry

**TREATMENTS** 

PRE-MEASURE

Online lab

n=300

**Interactive** Experiment: Permanganometry



- Content knowledge
- **Practical abilities**
- Subjective evaluation

POST-MFASURE



### Paper-Pencil Test III (3 weeks later)

- Content knowledge
- Practical abilities



**FOLLOW-UP** 

Idea

prototype

useability

student behavior decision trees

interactive video experiments

Data collection **Analysing** data

Reporting results

Share



Soon available on our website:

www.uni-giessen.de/dc

- Permanganometry
- Identification of density of an isotonic saline solution
- Identification of water hardness
- Identification of the reaction rate constant of the saponification of ethyl acetate
- Disproportionation of chlorine
- Solvation of marble in diluted hydrochloric acid