



Research directions I'm interested
in that touch themes of DMRCP

Eva Müller-Hill (Rostock)

Core stances that I adopt

- basically **constructivist** understanding of learning (of mathematics)
- **cultural** perspective on mathematical practices
- **socio-empirically informed** perspective
- paradigm of **qualitative** empirical research

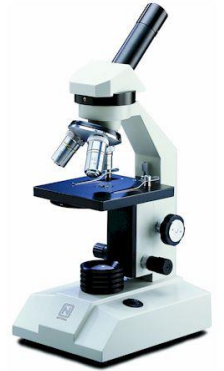
Themes I am currently working on



- **Mathematical explanation, argumentation and proof**, particularly in contexts of teaching and learning mathematics
- **Problem-solving in mathematics**, also particularly in contexts of teaching and learning mathematics

(Empirical) methods I am currently working with

- Half-structured interviews
- Thinking aloud-studies
- Case studies
- Videography (of working processes, of classroom lessons, ...)
- Interactionist analysis
- Semiotic analysis
- Design-research studies (on designing teacher education modules, e.g., on proof and argumentation)
- Mixed-methods



Possible research directions

- **philosophical** issues, e.g.:
 - grounding conceptions of explanation and justification.
 - grounding models of scientific discovery.
- **semiotic** issues, e.g.:
 - role of language and signs, particularly diagrammatic reasoning.
 - possible relations to cognitive science.
- **psychological, sociological and “cultural”** issues, e.g.
 - beliefs and attitudes.
 - activity-theoretical and anthropological didactical perspectives.
 - norms and values.



Mathematical
explanation,
argumentation and
proof

Problem-solving
in mathematics