

# Equipping students for the future: teachers and instruction

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## Abstract

The thematic field “Equipping Students for the Future” focuses on teacher professionalization to foster subject-specific and transversal (cross-curricular) competencies. We investigate how teachers design learning arrangements in which students actively develop domain knowledge (e.g., in mathematics, languages, or science), experience themselves as self-effective learners, and experience socio-emotional support. A special focus lies on the exploration of classroom climate in which students’ ideas are taken seriously and their efforts are met with recognition and support by their teachers. In this way, subject-specific instruction is closely linked to future-relevant competencies such as critical thinking, social responsibility, and digital skills.

## Background & Key Theories

- Transversal competencies gain importance, but are developed most effectively in demanding subject-specific activities (e.g., problem solving, modeling, argumentation, social interaction, communication, writing).
- Students need to experience themselves as active, self-effective learners who make content-related decisions and explain their thinking.
- Teachers’ beliefs about subject abilities shape feedback, a positive error culture, and recognition of students with different learning trajectories and different family background.
- Recognition-rich and autonomy-supportive instruction combines cognitive activation with emotional support and recognition of students’ contributions.

## Overarching Research Questions

1. How can teachers be prepared to design subject-specific learning arrangements in which students work autonomously, experience strong self-efficacy and emotional support?
2. How can subject teaching be organized so that transversal (cross-curricular) competencies are addressed in connection to subject-related content rather than from separate training?
3. How do teachers’ beliefs and practices influence students’ motivation, emotions, and participation in different subjects?

## Prominent Methodological Approaches

- Experimental and quasi-experimental studies with teachers, student teachers and students.
- Correlational studies with teachers, student teachers and students
- Classroom-based intervention studies in subject-specific learning arrangements.
- Design based experiments in which learning environments are iteratively developed, implemented, and refined together with teachers and students.
- Video-based and computer-based analyses of teaching and learning processes.
- School-based intervention studies

## Social Relevance

The research area is characterized to address societal-relevant issues such as educational equity, cultural responsiveness, resilience promotion, digitally supported learning, democracy orientation, civic education, socio-emotional education, and education for sustainability.

Together with schools and out-of-school practice partners, it is aimed to explore how teachers can be prepared to promote future-relevant competencies in students.

## Examples of Related Research Projects and Networks

- RuhrNetwork for Functional Digital Media-Use in Children and Adolescents- MERCUR cooperation project
- Cooperation partners: RUB: Heyder (Educational Psychology), Brailovskaia (Clinical Psychology), UDE: Liebherr, Antons (General Psychology); <https://www.uni-due.de/functional-media-use-network/index.php>
- Causal Effects of Teachers’ Mindsets on Student Motivation and Emotion – DFG research grant (Heyder)
- Interdisciplinary Centre of Excellence for Multi-professional School Development in the Local Community (UDE: van Ackeren, Göbel, Roll, Stöbe-Blossey; RUB: Bellenberg), Startchancen – Chancen Verbund (BMBFSFJ)
- LerningCrew Ruhr - LerncrewRuhr (UDE: Göbel, TUD: Hußmann; RUB: Rothstein) (BMBFSFJ; RuhrFutur)



## Future Perspectives

- Joint research colloquia (e.g., quarterly) in which ongoing projects, concepts, and empirical findings are discussed and further developed.
- Interactive strategy workshops to develop joint research perspectives and potential DFG collaborative grant proposals.
- Cross-campus supervision of theses

## Key Literature

Heyder, A., Weidinger, A. F., Cimpian, A., & Steinmayr, R. (2020). Teachers’ belief that math requires innate ability predicts lower intrinsic motivation among low-achieving students. *Learning and Instruction*, 65, 101220. <https://doi.org/10.1016/j.learninstruc.2019.101220>

Göbel, K., Schmelter, L., Neuber, K., & Struck, L. (2024). Appreciation of multilingual teaching activities by secondary school students in Germany: findings from a quasi-experimental intervention study on teaching French. *Journal of Multilingual and Multicultural Development*, 1–22. <https://doi.org/10.1080/01434632.2024.2355273>

Göbel, K. & Preusche, Z. M. (2019). Emotional school engagement among minority youth: The relevance of cultural identity, perceived discrimination, and perceived support. *Intercultural Education*, 31 (3). <https://doi.org/10.1080/14675986.2019.1616263>.

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