



Is your mind set? Conceptual and methodological extensions of mindset research

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E-CER Scope

Mindsets encompass beliefs about attributes or abilities, such as the malleability of abilities or their relevance to achievement. Mindsets form a 'meaning system' that plays a crucial role in learning by influencing motivation, emotions, learning behaviour, and goal-setting, which ultimately affect achievement. While previous research has primarily focused on mindsets related to intelligence, there is growing interest in examining domain- or subject-specific mindsets due to their predictive power for domain-specific behaviours. Although mindsets are generally stable, interventions can alter them, providing opportunities to cultivate adaptive mindsets. However, the relationship between mindsets and learning outcomes varies across domains, populations, and cultures. Additionally, evidence suggests that mindset interventions may be particularly effective for academically at-risk students. However, little is currently known about the development of mindsets.

The E-CER aims to integrate these diverse perspectives to develop a comprehensive framework for conceptualising, analysing, and promoting different mindsets across various populations. The initiative seeks to advance our understanding of mindsets by creating new assessment tools, designing tailored mindset interventions, examining the development of mindsets, and developing resources to support the implementation of mindset-oriented practices for students, parents, and teachers.

First, we will engage in in-depth discussions to synthesise and analyse current mindset research, with the goal of further developing mindset theory in relation to different domains, age groups, contexts, perspectives, and outcomes.

Secondly, we will focus on discussing and developing mindset assessment instruments for various abilities. Particular attention will be given to tools that do not rely solely on self-report measures, including innovative methods such as neurophysiological or behavioural approaches. We aim to offer recommendations for a multi-method approach to the comprehensive assessment of mindsets.



Thirdly, we will work on developing mindset interventions, collaborating to enhance their effectiveness and contribute to the creation of new interventions and materials. Our aim is to generate relevant information to facilitate the development of tailored interventions.

To address these challenges, the E-CER brings together mindset researchers from across Europe, drawing on their expertise in teacher education, social and motivational psychology, cognitive and learning sciences, developmental psychology, cross-cultural research, instrument development, and interaction research. This initiative marks the beginning of a European network of researchers dedicated to mindset research.

E-CER Members

1. Silke Hertel

Silke Hertel is a Professor of Personal Competencies in School Contexts at Heidelberg University, Germany. Her research is centered on the development and support of self-regulated learning, parental co-regulation, teachers' professional competencies, the design of adaptive learning environments, and mindsets. She teaches in both the Bachelor's and Master's programs in Education Science and in the Teacher Education program at the Institute of Education Science. Alongside Yves Karlen, she has co-edited the special issue titled 'The Power of Implicit Theories for Learning in Different Educational Contexts,' published in both *Frontiers in Education* and *Frontiers in Psychology* and developed scales to assess mindsets about self-regulated learning.

2. Yves Karlen

Yves Karlen is a Professor of Upper Secondary Education with a Special Focus on Research in Teaching and Learning at the University of Zurich. His research centres on examining the self-regulated learning (SRL) competencies of both teachers and students, developing digital diagnostic tools for SRL, and investigating how mindsets influence learning and teaching. He is particularly interested in supporting schools and teachers in developing their professional competencies and practices through research-practice partnerships. The goal is to empower teachers to help students become self-regulated, confident lifelong learners.

3. Lisa Bardach

Lisa Bardach is a Professor of Educational Psychology in the Department of Psychology at the University of Giessen. Lisa Bardach's research focuses on individual differences (e.g., motivation, personality, self-regulation, and cognitive abilities) and their interplay and role in individuals' learning and development. Considering that children and adolescents are growing up in increasingly culturally diverse and often unequal worlds, she is also interested in questions relating to how schools approach cultural diversity and how they can address social inequities. Further, she conducts research on digital learning and develops interventions based on digital technologies to support children's and adolescents' positive school-related development.

4. Miriam Compagnoni

Dr. Miriam Compagnoni is a growth-minded Senior Researcher and Lecturer at the University of Zurich. Her research centers on the interaction of mindsets, self-concepts, and self-regulation, spanning from early childhood to teacher education. At present, she is particularly

interested in exploring teachers' mindsets regarding professional competencies and socio-emotional skills. With a commitment to bridging theory and practice, she actively contributes to educational practices by designing a mindset intervention with Prof. Dr. Yves Karlen to reduce stereotypical career choices for girls. She teaches in both the Bachelor's and Master's programs in Education Science at the University of Zurich, as well as in the Art Education program at the Zurich University of the Arts, focusing on the transformative power of mindsets.

5. Luísa Faria

Luísa Faria is a Professor of Psychology at the Faculty of Psychology and Education Sciences of the University of Porto (FPCEUP), Portugal, and lectures in the areas of Motivation and Emotions. She was the director of the FPCEUP between 2018 and 2022. She has been involved in Research & Development Projects on students' personal conceptions of intelligence, emotional intelligence, and academic achievement (assessment and development). She is particularly interested in studying the differential development of implicit theories of intelligence and emotional intelligence during adolescence and their relations with academic achievement. The aim is to propose guidelines and practices to promote students' implicit theories and achievement.

6. Veronica Job

Veronika Job is Professor of Motivation Psychology at the University of Vienna. Much of her research is focused on determinants, processes, and outcomes of goal-striving, self-regulation, and effort mobilization. Veronika Job linked ego-depletion research with the lay theory approach by showing that the way people think about acts of self-control (as consuming from a limited vs. as a non-limited resource) affects their self-regulation ability and their personal goal striving. Her work contributes to a revised, critical view of the resource model of self-control.

7. Fidelia Law

Dr. Fidelia Law is a Lecturer at the University of Bristol in the United Kingdom. She teaches in both the Bachelor's and Master's in Psychology of Education programs at the School of Education. Her research broadly tackles issues related to inequality in education. She uses quantitative, qualitative, and mixed-method research to explore the development of gender stereotypes, motivation, and engagement in STEM disciplines (science, technology, engineering, and mathematics). She collaborates closely with informal STEM practitioners at informal sites such as science centers and museums. Her involvement in implementing growth mindset interventions in informal learning environments demonstrates a commitment to research-practice partnerships, ensuring that research effectively bridges the gap between theory and real-world applications.

8. Marko Lüftenegger

Marko Lüftenegger is Associate Professor of Developmental and Educational Psychology in School Age at the University of Vienna, Austria. His main research focus is to identify malleable characteristics in educational settings as these contribute to beneficial development of motivational, cognitive, and socio-emotional student outcomes. He also develops and evaluate trainings and programs. In this more applied research, both theoretical knowledge and empirical knowledge are used to develop evidence-based

programs for teachers, students and parents. He has edited a special issue on 'Implicit theories: International Perspectives from Multiple Domains,' published in the Zeitschrift für Psychologie.

9. Kirsi Tirri

Kirsi Tirri is Professor of Education at the Department of Education, University of Helsinki. She is also a visiting Professor at St. John's University, New York. Her research interests include school pedagogy, moral and religious education, gifted education, teacher education, and cross-cultural studies. She leads the multidisciplinary research project on students', teachers', and parents' mindsets "Changing Mindsets about Learning: Connecting Psychological, Educational, and Neuroscientific Evidence (CoPErNicus)". She has published 14 monographs and numerous journal articles in international journals and book chapters. She has supervised 32 doctoral dissertations and mentored many postdoctoral researchers who are now professors and researchers in education.

10. Helene Zeeb

Helene Zeeb is a postdoctoral researcher at the University of Erfurt. Her research focuses on motivational beliefs, including beliefs about ability. She takes different perspectives, such as: Do teachers notice students' unhelpful beliefs and how can they change them? What beliefs do teachers hold themselves? How should effective interventions be designed and who will benefit from them? In her current mindset research, Helene is developing tools that go beyond the typical questionnaire to capture the effects of mindset interventions.