



## Book of Abstracts

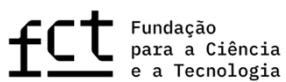
19th International Conference on Motivation and Emotion

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# ICM 2026

## Book of Abstracts

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## Keynote 1



### Eleftheria N. Gonida

Professor of Educational Psychology and  
Human Development  
**Aristotle University of Thessaloniki,**  
Greece

### *The role of parents in students' motivation and engagement: Theory, evidence and implications for practice*

As key predictors of learning outcomes and academic achievement, students' motivation and engagement are shaped not only by the classroom but also by the home environment. This invited talk will examine the role of parents in fostering students' motivation and engagement, integrating contemporary theory with empirical evidence and practical implications for parents and educators. Special focus will be given to parental involvement in students' homework, exploring how parents' motivational beliefs and emotions predict the quality of their involvement and interactions with their child during homework, as well as how these parental behaviors relate to students' motivation and academic outcomes. This research contributes to educational and developmental psychology by: (i) identifying the mechanisms through which parental beliefs translate into everyday learning interactions at home that are associated with children's adaptive or maladaptive motivation and engagement over time; and (ii) understanding the bidirectional association between parents and children, and the parent-child motivational dynamics across school grades.

## Symposium 1: From Lab to Classroom: Electrodermal Activity in Multimodal Research on Emotion

**Organizer:** Anja Henke, University of Potsdam, Germany

**Chair:** Anja Henke, University of Potsdam, Germany

**Discussant:**

### Abstract

Emotions are multicomponent phenomena. One component, namely physiological responses, are gaining increasing interest in research on educational contexts. A well-established approach to measuring affective activation, or affective arousal, is electrodermal activity (EDA). EDA can be measured by a sensor and electrodes on the skin (often on the palms of the non-dominant hand). However, how EDA can be utilized to maximize its benefit for research remains unclear for now. Whereas more research has been conducted within in lab contexts, EDA has been used less in real classrooms. Although research in real classrooms offers ecological validity, it relates to challenges that possibly reducing validity of EDA measurements. The present symposium aims to foster discussion on how multimodal educational research on emotion can utilize EDA measurements. Therefore, the present symposium brings together multimodal studies utilizing EDA within varied settings and using a variety of methodological approaches. The symposium thereby also aims to open perspectives on why utilizing EDA within multimodal studies on affective learning processes can be beneficial and uncover otherwise hidden mechanisms. The four presentations offer diverse angles on how EDA can be utilized to research emotion in learning contexts. All studies employ a multimodal approach and bring together different methodological approaches, learning settings (university lab setting, medical training simulation, group learning setting in a classroom-like lab, individual learning setting in school), and levels of education (school children, preservice teachers, medical trainees) to cover a greater range of learning scenarios and inspire discourse.

### ***Disengaged by Mathematics? Exploring Pre-service Elementary-School Teachers' Reactions to Math***

**Presenting Author:** Franziska Eckerskorn, LMU Munich, Germany

**Co-author(s):** Anne Frenzel, LMU München, Germany; Miriam Wünsch, Ludwig-Maximilians-Universität München, Germany; Reinhard Pekrun, University of Essex, United Kingdom; Léon Brings, Bielefeld University, Germany; Michael Kleine, Bielefeld University, Germany

### Abstract

This study employed a situated approach to evaluate how female pre-service elementary school teachers' mathematics self-concept impacts their emotional and physiological responses when confronted with mathematics tasks. We assessed participants' (N = 70, Mage = 20.6 years) self-concept before inviting them into the laboratory, where they had to solve arithmetic pattern tasks. We recorded their psychophysiological arousal via skin conductance response (SCR), heart rate(HR), and heart rate variability (HRV), and assessed their situated emotionalexperience using self-report during task performance. We hypothesized linear associations between self-concept and subjective emotional valence (more pleasant with higher self-concept), and curvilinear associations between self-concept and psychophysiological arousal (higher arousal with both low and high self-concept). As predicted, higher self-concept was associated with elevated pleasant and reduced unpleasant emotional experience, even when controlling for task performance. For SCR, we found evidence for the proposed curvilinear relationship between self-concept and physiological arousal, while HR was unrelated to self-concept, and HRV

showed a predominantly negative linear relationship with self-concept. Our findings imply pleasant engagement (positive emotion, high arousal) when mathematics self-concept is high, and aversive disengagement (negative emotion, dampened arousal) when mathematics self-concept is low, during a relatively low-stakes mathematics task exposure. Our findings highlight the predictive role of self-concept for situated emotional experiences and imply that university teacher education should provide emotionally pleasant, success-promising situations for pre-service elementary school teachers to (re-)build a healthy mathematics self-concept to thrive as students, and later, become effective educators.

### ***Opportunities for Immediate and Near-future Educational Applications of Electrodermal Activation***

**Presenting Author:** Jason Harley, McGill University, Canada

#### **Abstract**

Not knowing how healthcare trainees are experiencing and managing their emotions can mask deficits in their knowledge on how to deal with difficult feelings in high-stakes and under-resourced environments. Physiological sensors represent a promising avenue to examine healthcare trainees' emotions. Unfortunately, such research is scarce. Worse: educational applications of such findings are under-developed. This presentation helps address this gap and advances understanding of how different approaches to measuring and analyzing EDA can be translated into immediate and near-future educational applications. Research was informed by the Control-value Theory of Achievement Emotions. Study 1 included 29 medical trainees undergoing team-based healthcare simulation training. Study 2 included 20 nursing students learning how to manage a patient with an acute anxiety attack in a virtual emergency room. Findings from Study 1 revealed the presence of physiological synchrony across all teams which was associated with effective team leader performance and statistically significant increases in EDA between different phases of the healthcare simulation. In Study 2 we found that nursing students' EDA was statistically significantly higher after compared to before their experienced challenging/bothersome events with a virtual simulation. Findings reveal applications of EDA to assess shared emotional arousal experiences, illustrate changing physiological patterns as a simulated case becomes more complex, and underscore the psychological impact of bothersome and challenging events while learning. Discussion highlights the potential of EDA to be used now and in the future by trainees and educators during simulation debriefing and by educational technology developers conducting quality assurance testing on virtual reality tools.

### ***Think alike, feel alike? Emotional synchrony and regulation in collaborative learning***

**Presenting Author:** Tiina Törmänen, University of Oulu, Finland

**Co-author(s):** Niklas Heikkala, University of Oulu, Finland; Hanna Järvenoja, University of Oulu, Finland

#### **Abstract**

In collaborative learning, group members may converge in their emotional experiences, developing shared emotions and engaging in coordinated efforts to manage challenges through co- and socially shared emotion regulation. While prior research highlights the importance of socio-emotional aspects in collaborative learning, less is known about how individual appraisals of these aspects align within groups and how such convergence or divergence shapes emotional dynamics. This study examines how students' appraisals of socio-emotional aspects of collaboration relate to emotional synchrony and emotion regulation during a collaborative science task. Ninety-five secondary school students worked in 31 small groups. Social interactions were videotaped to observe emotion regulation through verbal exchanges, and electrodermal activity was recorded to assess physiological emotional synchrony. Individual appraisals were collected using a contextualized version of SAGA instrument before and after

the task. Groups were classified as having convergent or divergent appraisals, and these patterns were analyzed in relation to shared physiological arousal events and observed emotion regulation. Results indicate that divergent appraisals can lead to out-of-synchrony emotional responses (i.e., different emotional reactions to the same events) and increase the need for socially shared emotion regulation to restore a favorable socio-emotional climate. By linking individual appraisals to group-level emotional dynamics, the study provides a more comprehensive view of emotion formation and regulation in small groups. In the presentation, the potential and limitations of using EDA will be critically examined, particularly its applicability for capturing emotions and emotion regulation in collaborative learning contexts.

### ***A Multimodal Perspective on Situated Emotions and Affective Arousal in Technology-Enhanced Learning***

**Presenting Author:** Anja Henke, University of Potsdam, Germany

**Co-author(s):** Jason Harley, McGill University, Canada; Negar Matin, McGill University, Canada; Johann Chevalère, Laboratoire de Psychologie Sociale et Cognitive (LAPSCO), France; Verena V. Hafner, HU Berlin, Germany; Niels Pinkwart, HU Berlin, Germany; Rebecca Lazarides, University of Potsdam, Germany

#### **Abstract**

The present study examines interrelated dynamics of affective activation, concurrent activity-related emotions, and learning behavior while learning with an adaptive learning technology as well retrospective topic-related emotions before and domain knowledge after learning. Using multiple sources of data including electrodermal activity, we apply assumptions of control-value theory. More precisely, we measured electrodermal activity (affective activation), utilized experience sampling (concurrent activity-related emotions), analyzed logfile data (learning behavior: scaffolding prompt compliance), employed emotion self-reports (retrospective topic-related emotions), and a standardized knowledge test (domain knowledge). The study uses data of  $N = 83$  secondary school students ( $M_{age} = 15.52$ ,  $SD = 1.90$ ; 56.6 % female) and specified a series two-level dynamic structural equation models including autoregressive, cross-lagged, and cross-level effects. Within students (time level), concurrent activity-related emotions and prompt compliance were self-predictive. Between students (person level), time-aggregated levels of affective activation negatively related to domain knowledge after learning suggesting depletion of cognitive resources by affective activation. Cross-level effects showed that retrospective topic related boredom and confusion increased stability of concurrent activity-related boredom and confusion respectively and thereby suggesting these as possible affective activation drivers. The results suggest that higher overall affective activation during learning impedes knowledge acquisition, pointing towards the relevance of physiological aspects of emotional experiences. Further, results suggest that once established, an emotion will persist during learning. Particularly initial and consequent persistent boredom can be detrimental to following learning processes.

## Symposium 2: Advances in Achievement Goal Complex Research: Where Are We at and Where do We Go from Here?

**Organizer:** Gregory Arief D Liem, National Institute of Education/Nanyang Technological University, Singapore; Corwin Senko, SUNY New Paltz, United States

**Chair:** Gregory Arief D Liem, National Institute of Education/Nanyang Technological University, Singapore; Corwin Senko, SUNY New Paltz, United States

**Discussant:** Marko Lüftenegger, University of Vienna, Austria

### Abstract

The goal complex framework integrates achievement goals (“what” individuals strive for) with the reason for pursuing those goals (“why” they strive). This symposium’s four papers will reveal recent conceptual, methodological, and empirical advances in this framework and identify future directions. Paper 1 uses a within-person, game-to-game design among competitive soccer players. It shows that pursuing mastery-approach goals for autonomous versus controlling reasons differentially shapes challenge and threat appraisals. Paper 2 adopts a person-centered approach among Thai undergraduates to identify distinct motivational profiles underlying performance-approach goals. It demonstrates how autonomous and controlling reasons can coexist, sometimes at psychological cost. Paper 3 provides qualitative analysis of teachers’ professional learning goals. It introduces “wanting to” versus “needing to” as phenomenologically distinct reasons for pursuing an achievement goal. Paper 4 applies goal systems theory to university students’ goal complexes. It shows that the number and overlap of reasons for pursuing mastery and performance goals matter, both for one’s commitment to the goals and one’s prospects for successfully pursuing both goals together. These complementary papers demonstrate that goal complexes operate dynamically across contexts (e.g., education, sport) and cultures (Belgium, Germany, Thailand, the United States). They also use diverse methodological approaches (e.g., person-centered and thematic analyses), explore novel goal pursuit reasons, and emphasize systems-level perspectives. A discussant will integrate these contributions and articulate key directions for the next phase of goal complex research. Collectively, the symposium advances a more dynamic and nuanced understanding of what people strive for and why they strive jointly shape goal pursuit.

### ***Game-to-Game Dynamics: Reasons behind Mastery-Approach Goals and Appraisals in Soccer Performance***

**Presenting Author:** Sofie Morbée, Ghent University, Belgium

**Co-author(s):** Jochen Delrue, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Leen Haerens, Ghent University, Belgium; Athanasios Mouratidis, National and Kapodistrian University of Athens, Greece

### Abstract

The goal complex model proposes that achievement goals are best understood by integrating what athletes strive for with why they pursue those goals. Using a game-to-game design in soccer, this study tested whether autonomous (volitional) versus controlled (pressured) reasons for pursuing mastery-approach (MAp) goals relate to pre-game appraisals of challenge and threat, and whether these appraisals predict coach-rated performance. We investigate these relations at both the between-player and within-player levels, allowing us to capture not only

how different athletes typically regulate mastery-approach goals and appraise competitive situations, but also how these motivational dynamics fluctuate from game to game within the same athlete. The final analytic sample comprised 467 game reports nested within 127 male players ( $M = 26.31$ ,  $SD = 5.51$ ). Multilevel structural equation modeling revealed that, at both levels, autonomous reasons for MAP goal pursuit related positively to challenge appraisals, whereas controlled reasons related positively to threat appraisals. Challenge appraisals were not associated with coach-rated performance at either level. Threat appraisals related negatively to performance at the between-player level. These findings underscore that even when athletes pursue mastery aims, the quality of underlying regulation shapes anticipatory challenge/threat dynamics in competitive contexts, with persistent threat appraisals representing a potential risk factor for performance.

### ***Why Students Outperform Others: A Person-Centered Analysis of Performance-Approach Goal Reasons***

**Presenting Author:** Gregory Arief D Liem, National Institute of Education/Nanyang Technological University, Singapore

**Co-author(s):** Melvin Chan, National Institute of Education, Singapore; Corwin Senko, SUNY New Paltz, United States; Thanita Lerdpornkulrat, Srinakharinwirot University, Thailand; Chanut Poondej, Srinakharinwirot University, Thailand

#### **Abstract**

The achievement goal complex framework proposes that achievement goals and the reasons for pursuing them jointly shape students' motivated behavior and educational outcomes. Prior research has shown that performance-approach goals can yield mixed consequences, depending on whether they are pursued for autonomous or controlling reasons. However, most studies have relied on variable-centered approaches and Western samples, overlooking the coexistence of multiple motives and the sociocultural contexts in which goals are embedded. Adopting a person-centered approach, this study identified distinct motivational profiles underlying performance-approach goal pursuit among 659 Thai undergraduates. Using an expanded Self-Determination Theory-based taxonomy that incorporates personal, social, approach, and avoidance motives, latent profile analysis revealed four profiles: Highly Motivated, Moderately Motivated, Minimally Motivated, and Autonomously Motivated. These profiles differed meaningfully in students' background characteristics (gender, prior achievement, faculty affiliation) and in a wide range of psychoeducational outcomes, including self-efficacy, interest, persistence, academic buoyancy, collaboration, anxiety, hopelessness, disengagement, and help avoidance. Overall, profiles characterized by stronger autonomous reasons—alone or combined with controlling reasons (Autonomously and Highly Motivated profiles)—were associated with more adaptive outcomes, whereas lower motivation profiles (Minimally and Moderately Motivated profiles) showed relatively less favorable functioning. Notably, the Highly Motivated profile combining high levels of autonomous and controlling reasons was linked to high engagement but also elevated anxiety, highlighting potential trade-offs. Findings underscore the importance of examining motivational configurations rather than isolated motives and illustrate how social and avoidance-related reasons may function differently in collectivist cultural contexts.

### ***A Qualitative Exploration of “Needing to” versus “Wanting to” Reasons in Mastery Goal Complexes***

**Presenting Author:** Martin Daumiller, Institute of Psychology, Germany

**Co-author(s):** Ruth Butler, Hebrew University of Jerusalem, Israel; Markus Dresel, University of Augsburg, Germany

#### **Abstract**

This study examines the complex motivational dynamics underlying teachers’ mastery goal pursuit in professional learning by investigating “wanting to” and “needing to” reasons underlying mastery goals. Drawing on the concept of goal complexes, which integrates the what (goals) and the why (reasons) of achievement motivation, we conducted semi-structured interviews with 24 German school teachers from diverse school types and career stages. Participants described their professional learning goals and rated to what extent they pursued each because they wanted to or needed to do so. Two independent raters categorized the goals ( $\kappa = .74$ ) using an established system differentiating task and learning mastery goals, each with approach and avoidance distinctions. Learning approach and task approach goals were most frequently mentioned, though learning and task avoidance goals also emerged. Across all goal types, both “wanting to” and “needing to” reasons were evident but varied in strength: approach goals were more strongly associated with “wanting to,” whereas avoidance goals were predominantly driven by “needing to.” Teachers’ qualitative accounts revealed that “wanting to” reasons reflected volitional, interest-driven engagement, while “needing to” reasons encompassed both external obligations and internalized professional responsibilities. Together, these findings provide ecological evidence for the construct of mastery goal complexes and suggests “wanting to” versus “needing to” as an experience-near, psychologically meaningful distinction. Implications are discussed for refining theorizing on achievement goals and for designing professional learning.

### ***Do the Number of Reasons for Pursuing an Achievement Goal Matter? A Goal Complex Systems Model***

**Presenting Author:** Corwin Senko, SUNY New Paltz, United States

**Co-author(s):** Lucia Speranza, SUNY New Paltz, United States

#### **Abstract**

The goal complex model proposes that people can pursue an achievement goal (i.e., performance or mastery) for many reasons and that the goal’s effects depend partly on those underlying reasons. So far, though, studies have contrasted single opposing reasons (e.g., autonomous vs. controlling, or social utility vs. social desirability). Yet people might pursue an achievement goal for multiple reasons, not just one. Studies must now examine whether the number and diversity of goal pursuit reasons matters too. The present research does so by applying goal systems theory to goal complexes. It tested two novel hypotheses: first, that people are more committed to an achievement goal when they have more reasons for pursuing it (i.e., “multifinality”), and second, that they perceive performance goals and mastery goals as more compatible when their reasons for pursuing the two goals converge (i.e., “equifinality”). Both hypotheses were confirmed in an online study with university students ( $N = 335$ ). Additionally, in support of a “multiple goals” perspective, most students pursued both the mastery goal and a performance goal, considered these two goals compatible, and were more committed to each goal than were participants who pursued only one of the goals. The findings offer new insights into goal complexes as well as the long-standing debate about whether performance and mastery goals can work well together.

## Symposium 3: Teacher messages – effects of teachers’ motivational messages on student outcomes

**Organizer:** Rebecca Lazarides, University of Potsdam, Germany

**Chair:** David Putwain, Liverpool John Moores University, United Kingdom

**Discussant:** Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

### Abstract

Teacher motivational messages are of high relevance for motivational-affective and cognitive processes of students. However, it is not yet clear through which mechanisms teachers’ messages affect student outcomes. This symposium brings together multiple studies from international groups (USA, Germany and Spain), investigating the interplay of motivational messages with characteristics of the learning environment (Studies 1 + 2), and assessment methods, predictors and consequences of teachers’ value messages (Studies 3 and 4). Paper 1 indicates a dynamic interplay of teachers’ engaging messages and perceived relatedness in class. High relatedness without accompanying messages predicted lower engagement and achievement. Relational closeness becomes insufficient when not combined with clear motivational guidance. Paper 2 reveals that teachers with high efficacy maintained high levels of positive motivational messages regardless of stress levels. Conversely, lower-efficacy teachers appeared to increase positive messages only when compelled by environmental stress. These findings highlight the potential protective role of teaching-efficacy. Paper 3 uses LLM-based classifications of teacher value messages and indicate substantial variation in the type of messages that teachers use, with cost- and utility-related statements occurring most frequently. Relations to teacher enthusiasm are explored. Paper 4 shows that teachers used value messages less frequently in classes with a higher proportion of students with lower SES. The relationship between class SES and students’ values was mediated by teachers’ value messages use. The findings support the assumption that interindividual differences in STVs arise due to socialisation practices. Our expert discussant (Switzerland) will draw out recommendations for further research, policy and practice.

### ***What You Say Matters More: Engaging Messages Versus Relatedness in Predicting Outcomes***

**Presenting Author:** Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain

**Co-author(s):** Fernando Núñez-Regueiro, Université Grenoble Alpes, France; Juan L. Núñez, University of Las Palmas de Gran Canaria - Faculty of Educational Sciences, Spain

### Abstract

Teachers’ engaging messages and teacher–student relatedness are both considered central motivational resources in secondary education, yet little is known about how they jointly shape students’ engagement and academic achievement. This study examined whether these two resources operate additively, interdependently, or compensatory, and whether their interplay depends on the motivational quality of teachers’ gain-framed messages. A sample of 1,361 Spanish secondary students reported perceived teacher relatedness, gain-autonomous and gain-controlled engaging messages, and behavioural engagement, while achievement was obtained from official school records. Using cubic response surface analysis, we modelled linear, quadratic, and cubic patterns of congruence and incongruence between relatedness and teacher messages. Results showed that gain-autonomous messages consistently compensated for low relatedness, whereas high relatedness without accompanying messages predicted lower engagement and achievement, revealing a maladaptive pattern. For gain-controlled messages, high message frequency buffered low relatedness for achievement but not reliably for engagement. Across outcomes, the only configuration that consistently undermined student functioning was strong relatedness

paired with very low message frequency. These findings highlight that while relational closeness is important, it becomes insufficient, and at times counterproductive, when not combined with clear motivational guidance. Engaging teacher communication, particularly autonomy-supportive messaging, emerges as a key predictor of students' academic engagement and performance.

### ***Instruction Under Pressure: Environmental Demands, Educator Stress, and Motivational Messaging***

**Presenting Author:** Nathaniel von der Embse, University of South Florida, United States

**Co-author(s):** Alexander Goyette, College of Education, University of South Florida, Tampa, United States

#### **Abstract**

In response to accountability pressures, teachers employ a variety of motivational messages when communicating with students about high-stakes testing, including those that emphasize consequences of failure and more positive oriented messages. However, little is known about what teacher characteristics and environmental stressors may drive the selection and frequency of these message types. Prior research has suggested that teacher stress has been predictive of maladaptive instructional behaviors such as fear appeals. However, less is known about how environmental stress influences the adoption of positive instructional practices, including how educators may seek to motivate their students, and the role of teacher self-efficacy within these relationships. This study employed Structural Equation Modeling to evaluate a moderated mediation model with 6,428 teachers. The model examined how educator test stress mediates the relationship between environmental demands, including environmental test stress, in relation to three distinct instructional messages: fear appeals, timing reminders, and positive motivational messages. The potential moderating role of teacher efficacy was evaluated. Results indicated that environmental test stress had positive indirect effects on all three practices via educator test stress. However, a significant moderation emerged for positive practices; that is, the indirect pathway was significant only for teachers with low-to-average instructional efficacy. Teachers with high efficacy maintained high levels of positive practices regardless of stress levels. Conversely, lower-efficacy teachers appeared to increase positive practices only when compelled by environmental stress, suggesting a reactive rather than proactive approach. These findings highlight the potential protective role of teaching-efficacy

### ***Teacher's use of value messages in mathematics lessons***

**Presenting Author:** Insa Reichow, Universität Potsdam, Germany

**Co-author(s):** Olivia Metzner, University of Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany

#### **Abstract**

Teachers' motivational beliefs are central to shaping students' motivation, yet the mechanisms through which these beliefs are conveyed remain understudied. Situated expectancy-value theory (SEVT) suggests that teachers' messages about the value of the learning content serve as a socialization behaviour through which teachers' motivation transmits to students. The analysis of lesson transcripts allows the analysis of teacher use of motivational messages but is highly resource-intensive. This study examines (a) whether a fine-tuned open-source large language model (Gemma 2 27B) can be applied to accurately and reliably classify different types of teachers' value messages, (b) the frequency of such message types and (c) whether the model can be externally validated by testing relations to theoretically related constructs. We used lesson transcripts from 50 German-speaking mathematics teachers. LLM-based classifications are validated against manual codings of three independent pre-trained raters. In a next step, relations are tested between the LLM scores and teacher enthusiasm. Preliminary

findings indicate substantial variation in the type of messages that teachers use, with cost- and utility-related statements occurring most frequently. The presented research contributes to current work by introducing a new classification system for value messages and by elaborating its validation process.

### ***Not For Them? Science Teachers Use Fewer Value Messages with Students of Lower Socioeconomic status***

**Presenting Author:** Wendy Symes, University of Münster, Germany

**Co-author(s):** David Putwain, Liverpool John Moores University, United Kingdom; Andrea Mallaburn, School of Education, Liverpool John Moores University, United Kingdom

#### **Abstract**

Students of lower socioeconomic status (SES) have been shown to report lower subjective task values (STVs) than students of higher SES. The aim of this study was to explore whether this could be the result of teachers using fewer value messages in classes with lower average SES. Our sample included 1591 secondary school students who self-reported how often their science teachers used value messages (teacher value messages – TVMs), followed by their science STVs four months later. TVMs were used less frequently in classes with a higher proportion of students with lower SES. Furthermore, the relationship between class SES and STVs was mediated by TVM use. Our findings provide support for situated expectancy value theory (SEVT), which assumes that interindividual differences in STVs arise due to socialisation practices. Teachers should be encouraged to use more TVMs with students of lower SES.

## **Symposium 4: Studying Autonomy Support in Education: Experimental, Longitudinal, and AI-Based Approaches**

**Organizer:** Olivia Metzner, University of Potsdam, Germany

**Chair:** Olivia Metzner, University of Potsdam, Germany

**Discussant:** Thomas K. F. Chiu, The Chinese University of Hong Kong, Hong Kong

#### **Abstract**

Teachers' autonomy-supportive practices are key to students' motivation and learning. Building on the strong tradition of self-determination theory research, this symposium brings together four international studies from Australia, Germany, and the USA that employ novel, complementary methods to examine whether, how, and under which conditions autonomy-supportive educational settings shape students' motivational and social experiences. Paper 1 experimentally shows that providing U.S. science students with choices regarding character, content, and modality increases state curiosity beyond general curiosity, sense of autonomy, and interest in the topic. However, offering choices did not significantly affect learning outcomes (e.g., task performance), highlighting the specificity of autonomy-supportive effects on motivational states. Paper 2 uses data from a longitudinal randomized intervention study with Australian teachers and students. Findings reveal that teachers' participation in autonomy-supportive teaching training increased students' agentic engagement, which subsequently predicted higher autonomy need satisfaction. Paper 3 uses German classrooms transcripts and applies a large language model to classify teachers' autonomy-supportive messages. Initial analyses indicate that teachers most frequently used responsiveness to students' questions, informational praise, and messages nurturing interest. Relations between the categories and autonomy support as reported by students and teachers will be examined. Paper 4 uses data from Australian students and employs longitudinal cross-lagged panel modeling, revealing that perceived

bullying predicted subsequent perceived victimization; however, the reverse pathway—from perceived victimization to subsequent bullying—is not significant. Autonomy-supportive teaching does not moderate this relation. Our discussant (Hong Kong) will synthesize the findings and offer recommendations for future research, policy, and educational practice.

### ***Meaningful choice supports curiosity and autonomy during science learning***

**Presenting Author:** Natalie Hutchins, University of Virginia, United States

**Co-author(s):** Helena Goldbaum, University of Virginia, United States; Ellie Hanson, Clark University, United States; Jamie Jirout, University of Virginia, United States

#### **Abstract**

Curiosity is a powerful driver of science learning, fueling questioning, exploration, and conceptual change. Identifying ways to support curiosity in the classroom is essential. Autonomy support, such as providing choice, relates to motivation generally (Ryan and Deci, 2017) and can promote curiosity (Inayat & Ali, 2020). Little research has examined how choice influences children's curiosity in science contexts. To test the role of choice in promoting children's curiosity in a science activity, children (ages 7-8; N=130) were randomly assigned to choose or be told what they would learn about. Choices (character, content, modality) were matched in information and length and reflected classroom- feasible options. Pre-task measures included trait curiosity and need for autonomy; post-task measures included state curiosity, interest, sense of autonomy, intent to learn more, and learning. Choice led to higher state curiosity ( $p=.016$ ), even after controlling for general curiosity before the task ( $p=.004$ ), as well as higher sense of autonomy ( $p < .001$ ) and interest in the topic ( $p=.008$ ), but no difference in intent to learn ( $p=.240$ ) or learning ( $p=.583$ ). A significant, full mediation effect showed an indirect path from choice to curiosity through sense of autonomy ( $p < .001$ ). Findings highlight meaningful choice as a mechanism to increase children's state curiosity and interest in science activities. By increasing sense of autonomy, choice can activate curiosity in the moment, reinforcing the role of autonomy in learning (Ryan & Deci, 2017) and supporting engagement with complex content while laying the groundwork for sustained motivation in STEM.

### ***Autonomy-Supportive Teaching Promotes Student Agency and Autonomy***

**Presenting Author:** Johnmarshall Reeve, Australian Catholic University, Australia

**Co-author(s):** Sung Hyeon Cheon, Korea University, Republic of Korea

#### **Abstract**

According to self-determination theory, autonomy-supportive teaching enhances students' autonomy need satisfaction and agentic engagement. The purpose of the present study was to test a multilevel hypothesized mediation model in which teacher participation in an autonomy-supportive teaching intervention would promote mid-semester gains in students' agentic engagement, which would then promote end-semester gains in students' autonomy need satisfaction. The research design was a multilevel randomized control trial with longitudinally assessed dependent measures. Twenty-one PE teachers (17 males, 4 females) who taught 52 classes were randomly assigned to participate (or not) in an autonomy-supportive teaching intervention, while their 1,569 secondary students (726 males, 843 females) reported their agentic engagement and autonomy need satisfaction at the beginning, middle, and end of an 18-week semester. A doubly-latent multilevel structural equation modeling analysis showed that the hypothesized model fit the data well. At the whole class (L2) level, manipulated autonomy-supportive teaching increased mid-semester agentic engagement which increased last-semester autonomy satisfaction. These findings reveal the motivational origins (autonomy-supportive teaching) and benefits (autonomy need satisfaction) of enhanced agentic engagement.

## ***Leveraging Large Language Models to Analyze Teachers' Autonomy-Supportive Messages in the Classroom***

**Presenting Author:** Olivia Metzner, University of Potsdam, Germany

**Co-author(s):** Insa Reichow, Universität Potsdam, Germany; Rebecca Lazarides, University of Potsdam, Germany

### **Abstract**

Autonomy-supportive teaching is strongly linked to students' motivation and achievement, yet it is most often assessed using self-report, that can be vulnerable to social desirability biases. In addition, observer reports provide rich insights into teachers' autonomy-supportive practices but can be time intensive, resource demanding, and difficult to scale. This study examines whether large language models (LLMs) can accurately and validly classify teachers' autonomy-supportive messages in authentic classroom settings. Grounded in self-determination theory (SDT), we compare zero-shot, few-shot, and fine-tuned LLM approaches in their ability to classify autonomy-supportive teacher messages and examine how model-generated classifications relate to student- and teacher-reported autonomy support. The data consists of transcripts from 50 German mathematics teachers who taught 138 lessons drawn from the international TALIS Video Study. Three human raters classify 16 types of autonomy-supportive messages. The performance of zero-shot, few-shot, and fine-tuned LLMs is evaluated against human annotations. Initial results from human ratings indicate that teachers most frequently use autonomy-supportive messages reflecting responsiveness to students' questions and comments, informational praise, and the nurturing of interest, enjoyment, and curiosity. In contrast, messages promoting co-choice over content, pace, or social forms occur infrequently. By integrating artificial intelligence with established motivational theory, this study demonstrates the potential of LLMs to support the efficient and scalable analyses of classroom discourse. Ongoing analyses will further examine associations between LLM-based classifications and teachers' and students' self-reported autonomy support. Overall, the findings highlight new methodological opportunities for advancing research on autonomy-supportive teaching and teacher–student interactions.

## ***Does the Autonomy-Supportive Teaching Really Matter? Moderation Effects on the Bullying Cycle***

**Presenting Author:** Hye-Ryen Jang, Institute for Positive Psychology and Education, Australian Catholic University, Australia

**Co-author(s):** Johnmarshall Reeve, Australian Catholic University, Australia; Sung Hyeon Cheon, Korea University, Republic of Korea; Hyun Jun Shin, Australian Catholic University, Australia

### **Abstract**

The purpose of the present study was to investigate the effectiveness of an autonomy-supportive teaching climate in reducing bullying and victimization. First, we hypothesized a bullying–victimization cycle, which posits a strong positive correlation between bullying and victimization, suggesting mutually reinforcing dynamics. Second, we hypothesized that an autonomy supportive teaching would weaken this cycle. Participants were 835 secondary school students (56% female; 87.8% middle school) in South Korea, who reported their perceptions of teacher autonomy support and their bullying and victimization experiences in PE classes. Data were collected across three waves: at the beginning, middle, and end of the first semester. The CLPM results revealed that perceived bullying predicted subsequent perceived victimization; however, the reverse pathway - from perceived victimization to subsequent bullying - was not significant. We then tested whether students' perceptions of autonomy-supportive teaching moderated the association between bullying and victimization. Preliminary results indicated that autonomy-supportive teaching did not moderate this relationship. These findings highlight the importance of

preventing bullying early in the semester and suggest the need for further investigation into the psychological mechanisms through which supportive teaching may influence bullying and victimization.

## Symposium 5: Affective and Motivational Dynamics of Self-Regulated Learning in Authentic Educational Settings

**Organizer:** Jakob Schwerter, Hector Research Institute of Education Sciences and Psychology (HIB), University of Tübingen, Germany; Luise von Keyserlingk, University of Tuebingen, Germany

**Chair:** Jakob Schwerter, Hector Research Institute of Education Sciences and Psychology (HIB), University of Tübingen, Germany; Luise von Keyserlingk, University of Tuebingen, Germany

**Discussant:** Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel

### Abstract

University students often study under uncertain conditions regarding task difficulty, time costs, and the payoff of effort, which put motivational processes in a central role for self-regulated learning (SRL; Winne & Hadwin, 1998). This symposium integrates intensive longitudinal and digital trace data with contemporary SRL and motivational perspectives (e.g., situated expectancy–value theory; Eccles & Wigfield, 2020; the MASRL framework; Efklides & Schwartz, 2024) examining how motivational beliefs and momentary affective states relate to students’ learning behavior in authentic higher education contexts. Across four contributions, we collectively link self-reported motivation, emotion, and engagement to observed learning behaviors, and examine supports designed to promote engagement. Contribution 1 used experience-sampling data across multiple institutions and showed strong behavioral inertia in students’ study routines. Positive affect was reciprocally related to reengagement, with higher positive affect predicting renewed study activity. Contribution 2 showed that expectancy–value beliefs and achievement goals were differentially related to planned control strategies, observed learning behaviors, and exam performance, with attainment value and expectancies supporting more sustained engagement. Contribution 3 demonstrated that prior knowledge and expectancy–value components were associated with students’ process and product goals, distinct semester-long practice trajectories, and goal attainment. Contribution 4 provided experimental evidence that digital SRL skill training and relevance writing produced a differentiated pattern of benefits, improving some aspects of engagement and performance while revealing tradeoffs in students’ goals and task perceptions. Together, these studies refine our understanding of how motivational beliefs, emotions, and instructional supports shape learning behavior in authentic higher education settings.

### *Studying in the Wild: Affective Dynamics of Self-Regulated Learning and Break-Taking*

**Presenting Author:** Niklas Wenzel, School of Health Professions Education (SHE) - Maastricht University, Netherlands

**Co-author(s):** Felicitas Biber, Maastricht University, Netherlands; Wisnu Wiradhany, Faculty of Psychology, Atma Jaya Catholic University of Indonesia, West Jakarta, Indonesia; Anique de Bruin, Maastricht University, Netherlands

### Abstract

Learning during independent study requires students not only to self-regulate their learning, but also to regulate their break-taking. Building on the Metacognitive and Affective Model of Self-Regulated Learning (MASRL), we conceptualize task-related affect (e.g., interest, fatigue, boredom) as a key bottom-up signal that may both prompt

breaks and be shaped by ongoing study and break behavior. To examine these dynamics in authentic self-regulated learning contexts we used experience sampling (ESM) with 120 university students who completed six surveys per day across 14 days. At each prompt, students reported current positive and negative affect, and detailed study/non-study activities, including whether non-study activities were intended as deliberate breaks. Using Bayesian mixed-effects models, we analyzed the interplay between behavioral states (studying, breaking, non-studying) and affective states. Preliminary results indicate strong behavioral inertia: students were less likely to initiate studying than to remain in their current state, and once studying, they tended to continue. Importantly, higher within-person positive affect predicted studying at the next time point, suggesting that affective shifts may help overcome the key hurdle of study initiation. Detailed follow-up analyses are still ongoing and will be presented at the ICM.

### ***The Interplay of Motivation, Digital Learning Behaviors, and Academic Achievement***

**Presenting Author:** Fanyi Zeng, Universität Tübingen, Germany

**Co-author(s):** Jakob Schwerter, Hector Research Institute of Education Sciences and Psychology (HIB), University of Tübingen, Germany; Jutta Heckhausen, University of California Irvine, United States; Jeff Greene, University of North Carolina at Chapel Hill, United States; Matthew Bernacki, University of North Carolina at Chapel Hill, United States; Luise von Keyserlingk, University of Tuebingen, Germany

#### **Abstract**

Understanding students' motivation and identifying adaptive learning behaviors are critical for improving performance and promoting persistence of STEM students. Drawing on Situated Expectancy-Value Theory, Achievement Goal Theory, and Motivational Theory of Life-Span Development, we aim to examine the interplay of achievement motivation, planned control strategies, such as goal engagement and goal disengagement, digital learning behaviors, and academic performance. Participants were 1085 computer science undergraduates from two German universities, who completed questionnaires on achievement motivation and planned control strategies at semester onset. We tracked digital learning behaviors (practice task engagement, slide clicks, forum clicks) throughout the semester and obtained final exam scores. Our SEM results show that, as expected, motivation predicted digital learning behaviors, which predicted final exam performance. Learning-oriented students reported higher goal engagement, and they exhibited adaptive learning behaviors that lead to better performance. Students perceiving greater course values invested more time on tasks but received lower scores, which might indicate struggles or inefficiencies. Our study demonstrates that achievement motivation influences performance directly and indirectly through planned control strategies and digital learning behaviors, and that the combination of motivation and learning behaviors is important for academic achievement.

### ***Motivation into Action: Examination of Motivation, Goals, Practice, and Achievement***

**Presenting Author:** Jakob Schwerter, Hector Research Institute of Education Sciences and Psychology (HIB), University of Tübingen, Germany

**Co-author(s):** Hannah Deininger, University of Tübingen, Germany; Luise von Keyserlingk, University of Tuebingen, Germany; Garvin Brod, DIPF | Leibniz Institute for Research and Information in Education, Germany; Fani Laueremann, University of Bonn, Germany; Matthew Bernacki, University of North Carolina at Chapel Hill, United States

#### **Abstract**

Although digital learning environments can support practice, student engagement often declines over the course of a semester. Using the Metacognitive and Affective Model of Self-Regulated Learning (MASRL), we examined how students' motivational beliefs and prior knowledge influenced engagement and achievement in an introductory

mathematics course. In MASRL terms, motivational beliefs (self-concept and task values) and prior knowledge (a course-specific pretest and prior high school math achievement) are conceptualized as person-level characteristics that shape expectations of success and perceptions of task importance and costs, influencing engagement and performance over time. Data were collected from three cohorts of first-year business administration students ( $N = 1,791$ ) and we combined survey measures of prior knowledge and motivational beliefs with weekly practice logs. End-of-semester outcomes included exam performance and goal attainment. Regressions showed that prior knowledge and motivational beliefs were differentially related to learning behavior. Higher prior math achievement and stronger attainment values were associated with more frequent, earlier, and effective engagement with online exercises, whereas higher utility value was linked to later participation. Growth models showed that engagement declined on average; however, students who valued performing well demonstrated more sustained practice. Prior knowledge, self-concept, and attainment value were positively related to exam performance and goal attainment. Indicators of average practice behavior strongly predicted achievement and partially accounted for associations between motivational beliefs and prior knowledge with performance. The findings indicate that motivational beliefs shape how students approach learning opportunities, but academic success depends on whether these beliefs translate into sustained engagement across the semester.

### ***Benefits and Potential Tradeoffs when Supporting Undergraduates' Motivation and Learning Skills***

**Presenting Author:** Matthew Bernacki, University of North Carolina at Chapel Hill, United States

**Co-author(s):** Jenifer Utz, University of Nevada Las Vegas, United States; Christy Strong, University of Nevada Las Vegas, United States; Kathryn Rafferty, University of Nevada Las Vegas, United States; Judith Harackiewicz, University of Wisconsin-Madison, United States

#### **Abstract**

Interventions that prompt learners to reflect and write about the relevance of biology topics have been found to benefit learners self- and task-beliefs and occasionally contribute to academic achievement in STEM education coursework at universities. Interventions to develop learners' self-regulated learning skillfulness are more nascent but have promise for improving academic achievement. We examined combinations of such intervention approaches and observed a complex pattern of benefits. Completing skill training modules produce practical benefits compared to spending additional time learning biology topics. Supplementing such activities with reflective writing activities on different topics produced different benefits to learners' achievement goals, self-beliefs, and perceptions of their coursework, where reflecting on biology was beneficial for achievement goals. Extended research on intervention combinations and learners' responsiveness to them can inform personalized approaches to learning interventions that may produce multiple benefits to motivations and skills for engagement in STEM learning.

## Symposium 6: Emotion Regulation and Emotional Labor in (Pre-Service) Teachers: Context matters

**Organizer:** Gerda Hagenauer, University of Salzburg, Austria; Lara Fuchs, University of Salzburg, Austria

**Chair:** Gerda Hagenauer, University of Salzburg, Austria; Lara Fuchs, University of Salzburg, Austria

**Discussant:** Irena Burić, University of Zadar, Croatia

### Abstract

Teachers work under professional display rules that prescribe which emotions may be expressed and how, requiring them to regulate their emotions and perform emotional labor. Emotion regulation strategies are central to managing stress and comprise more adaptive strategies, such as reappraisal, and generally more maladaptive strategies, such as suppression. This symposium brings together contributions that examine emotional labor and emotion regulation among pre-service and in-service teachers with a strong context- and emotion-specific focus. Previous studies have mostly examined emotional labor in relation to broad affective constructs or teaching in general. This symposium goes one step further by explicitly emphasizing the context- and emotion-specific perspective. In contribution 1, the theoretical framework of emotional labor is used to investigate how emotion-specific labor strategies relate to burnout among teachers. The results indicate that different emotion-specific strategies have distinct associations with burnout. Contribution 2 examines teaching in culturally diverse classes, showing that emotional labor is contextually bound and shaped by display and feeling rules in these culturally diverse classrooms. The third contribution focuses on the first year of teacher education, a highly sensitive context as dropout is a common issue in teacher education, testing how emotion regulation strategies develop during this year and how they relate to stress and study satisfaction. Taken together, the contributions highlight that both emotional labor and emotion regulation vary depending on context, emotion type, and professional stage, underlining the importance of examining these processes in a nuanced, context- and emotion-sensitive manner.

### ***Teachers' Emotions as Drivers of Burnout: Discrete Emotions and Emotional Labor***

**Presenting Author:** Emily Pohl, Ludwig-Maximilians-Universität (LMU), Germany

**Co-author(s):** Lia Daniels, University of Alberta, Canada; Ulrike Nett, Augsburg University, Germany; Anne C. Frenzel, Ludwig-Maximilians-Universität (LMU), Germany

### Abstract

Teacher emotions and their regulation are central to teachers' psychological well-being. Specifically, emotional labor (e.g., hiding negative emotions to abide with display rules) predicts teacher burnout. Notably, existing emotional labor research has largely neglected discrete trait emotions as burnout predictors, and to operationalize emotional labor with respect to specific emotions (i.e., faking joy, hiding anger). In the present contribution, we propose that teachers' discrete trait emotions and their emotion-specific labor strategy use jointly predict teacher burnout. To test this, teachers from Canada and Germany ( $N=375$ ,  $M_{age}=38.44$ , 52% male) reported their emotional exhaustion and depersonalization, the frequency and intensity of their teaching-related anger, anxiety, shame, and joy and their emotion-specific labor strategy use (hiding and faking). Preregistered regression analyses showed that frequent and intense anger ( $=.38, p<.001$ ), anxiety ( $=.60, p<.001$ ), and shame ( $=.28, p<.001$ ) positively and joy ( $=-.49, p<.001$ ) negatively predict emotional exhaustion, controlling for gender and teaching experience. A similar pattern emerged for depersonalization. Above and beyond those effects, the findings supported that hiding anger ( $=.23$ ,

$p < .001$ ) and faking joy ( $= .12$ ,  $p = .008$ ) positively predict emotional exhaustion, with comparable effects for depersonalization. Beyond main effects, anger and hiding anger interacted to predict depersonalization ( $= .11$ ,  $p = .015$ ), indicating that hiding anger is more strongly associated with depersonalization among teachers who experience higher levels of anger. Our findings underscore the central role of discrete emotions in teacher burnout and that emotional labor can exacerbate the effects of frequency and intensity of negative emotions.

### ***Teachers' Emotional Labor in Culturally Diverse Classrooms***

**Presenting Author:** Lara Fuchs, University of Salzburg, Austria

**Co-author(s):** Gerda Hagenauer, University of Salzburg, Austria; Andreas Gegenfurtner, University of Augsburg, Germany

#### **Abstract**

Teaching involves emotional labor as has been addressed by numerous studies. However, teaching encompasses diverse activities and contexts, which shape how emotional labor may manifest in the classroom. A key context is teaching in culturally diverse classrooms (CDC), as migration increases classroom diversity. The present study therefore explores, drawing on emotional labor theory, how emotional labor unfolds in CDC and the role of feeling rules in this context. Feeling rules are understood as expectations regarding which emotions teachers should feel, extending beyond display rules that mainly govern emotional expression. Both feeling and display rules shape emotional labor enacted through surface acting, deep acting, and modulated acting. Given limited research on emotional labor in CDC, an exploratory qualitative design was adopted to gain profound insights into teachers' subjective experiences and everyday classroom practices. Semi-structured in-depth interviews with 23 Austrian middle school teachers were analyzed utilizing qualitative content analysis. The findings indicate that surface acting as well as modulated acting occurs regularly as teachers frequently suppress negative emotions such as anger or sadness to avoid retraumatizing students. However, they also employ deep acting strategies, for example by employing perspective-taking informed by students' cultural background in emotional expression. Furthermore, teachers reported avoiding faking emotions, as CDC students are perceived as highly sensitive to emotional inauthenticity. Regarding feeling rules, teachers mentioned navigating conflicting feeling rules, balancing societal expectations with personal values favoring calm, positive emotional displays. The findings broaden emotional labor theory by highlighting the cultural dimensions of emotional labor when teaching in CDC.

### ***Emotion Regulation, Stress Perception, and Study Satisfaction in Pre-Service Teachers***

**Presenting Author:** Frances Hoferichter, University of Greifswald, Germany

**Co-author(s):** Konstanze Schoeps, Universtiat de València, Spain; Diana Raufelder, University Greifswald, Germany

#### **Abstract**

The first year of teacher education is marked by substantial emotional and academic demands that require effective emotion regulation strategies (ERS). Drawing on Lazarus' transactional stress model (Lazarus & Folkman, 1987), this study examines how adaptive (reappraisal) and maladaptive (suppression) ERS co-develop with perceived stress and study satisfaction among pre-service teachers. Using a three-wave longitudinal design, data from 618 students were analyzed with a Random Intercept Cross-Lagged Panel Model (RI-CLPM) to disentangle stable between-person differences from within-person fluctuations. Results reveal robust between-person associations indicating that students with higher overall reappraisal show lower stress and higher study satisfaction. On the within-person level, adaptive ERS at mid-year predicted increased study satisfaction at the end of the academic year, whereas perceived stress had a negative effect. Autoregressive effects emerged only toward the end of the

first year, suggesting that emotion regulation habits stabilize over time. These findings underscore the importance of strengthening adaptive ERS early in teacher training to promote well-being, effective stress management, and sustained study satisfaction.

## Paper Session 1: Teacher Emotions, Emotional Exhaustion, and Occupational Well-Being

### Exploring Teachers' Regulation of Anger and Emotional Exhaustion from Two Diary Studies

**Presenting author:** Hui Wang, The Education University of Hong Kong, Hong Kong

**Co-author(s):** Ying CHEN, The Education University of Hong Kong, Hong Kong

#### Abstract

Experiencing and managing anger can be challenging for teachers, leading to emotional exhaustion. The interplay between teacher anger, emotional labor of anger, and emotional exhaustion remains underexplored, particularly with respect to how daily patterns of anger regulation contribute to ongoing emotional challenges. This multi-study research explores cross-cultural differences in how teachers' daily emotional labor of anger and emotional exhaustion shape their experiences of anger. A total of 548 Canadian teachers and 98 Chinese teachers joined these studies. The results suggested that among Canadian teachers, a greater tendency to hide anger during daily teaching was associated with increased emotional exhaustion. However, among Chinese teachers, the genuine expression of anger in daily teaching predicted their daily emotional exhaustion. Among both groups, emotional exhaustion mediated the relationship between earlier and later experiences of anger. Greater attention should be focused on improving teachers' emotional well-being by developing effective interventions to equip teachers with adaptive strategies for managing anger, moving beyond simple suppression or expression.

### When work demands lead to burnout: The moderating role of teaching self-efficacy

**Presenting author:** Iva Miličević, University of Zadar, Croatia

**Co-author(s):** Petra Đurić, University of Zadar, Croatia; Irena Burić, University of Zadar, Croatia

#### Abstract

This study investigated whether teaching self-efficacy (TSE) moderates the relationship between job demands (i.e., high workload, job insecurity, and illegitimate tasks) and burnout (i.e., exhaustion, mental distance, cognitive and emotional impairment) among large sample of teachers. Based on the Job Demands–Resources (JD-R) theory, it was hypothesized that TSE would buffer the negative effects of job demands. A total of 4,305 Croatian teachers participated, reporting on job demands, TSE, and burnout. Moderation analyses revealed that, while most models did not show a significant moderating effect of TSE, an exception was found in the relationship between job insecurity and mental distance, where TSE reduced the negative association. Statistically significant conditional effects were also observed for all associations between job demands and burnout at the low, mean, and high level of TSE. The study failed to support the JD-R theory's predictions, suggesting that other personal or contextual factors may be more influential in supporting teachers' occupational well-being. These results highlight the need for further research to identify additional factors that can help prevent burnout and improve teachers' occupational well-being.

## Teacher Emotions, Emotional Labor, and Interaction Quality in Elementary Schools

**Presenting author:** Ezgi Guney, TED University, Türkiye; Yesim Capa Aydin, Middle East Technical University, Türkiye

### Abstract

The present study examined the relationship between elementary school teachers' emotions, emotional labor strategies, and the quality of teacher-student interactions. The participants were 32 second-grade elementary school teachers working in public schools in Ankara, Turkey. The Teacher Emotions Scale (TES), Emotional Labor Scale, and the Classroom Assessment Scoring System (CLASS K-3) were utilized as data collection instruments. Unlike studies utilizing only self-reports, interaction quality was measured through standardized classroom observations, which lasted approximately 80 minutes per teacher. Descriptive analyses revealed that teachers generally experienced high levels of enjoyment ( $M = 3.80$ ) and low levels of anxiety ( $M = 1.34$ ) and anger ( $M = 1.43$ ). Interaction quality was highest in Emotional Support ( $M = 5.89$ ) and Classroom Organization ( $M = 5.85$ ), while it was lowest in Instructional Support ( $M = 4.38$ ). Canonical correlation analyses were carried out for the three domains of CLASS K-3 (Emotional Support, Classroom Organization, and Instructional Support). The results showed that there was a significant and strong relationship ( $R_c = .768$ ,  $p < .05^*$ ) between teacher affective characteristics (Set 1) and the Emotional Support domain (Set 2). Specifically, it was found that low anxiety, low anger, low surface acting, and high enjoyment were strongly related to higher levels of positive climate and regard for student perspectives, and lower levels of negative climate in the classroom. There was no significant association found between teacher affective characteristics and the Classroom Organization and Instructional Support domains. **Keywords:** Teacher emotions, Emotional labor, Interaction quality, Quantitative methods, CLASS K-3

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## Teachers' stress mindset in school – piloting a randomized controlled design intervention

**Presenting author:** Anna-Liisa Jõgi, Tallinn University, Estonia

**Co-author(s):** Anneli Jartsev, Tallinn University, Estonia; Aire Raidvee, University of Tartu, Estonia

### Abstract

Teaching is widely recognized as a highly stressful profession, with many stressors inherent to the school environment and therefore difficult or impossible to eliminate. Research suggests that individuals' stress mindset—the extent to which stress is perceived as enhancing or debilitating—plays a key role in how stress is experienced and managed. This study aimed to develop and pilot a brief, web-based animated intervention to promote a stress-is-enhancing mindset among teachers and to examine its effects on stress mindset, perceived stress, coping, and teaching-related stress. The intervention lasted seven weeks and consisted of weekly short videos grounded in a “wise intervention” framework, combined with guided reflection. Using a randomized controlled design, 71 teachers from four schools were assigned to either an intervention group or an active control group. Of these, 54 participants started the intervention and only 29 retained till the end. Participants completed pre- and post-questionnaires assessing stress mindset, perceived stress, coping, and teaching-related stress. Data were analyzed using independent samples t-tests and  $2 \times 2$  repeated-measures ANOVAs. Results indicated time  $\times$  group interaction effects for stress mindset. Teachers in the intervention group reported an increase in stress-is-enhancing mindset and a decrease in stress-is-debilitating mindset, whereas no changes were observed in the control group. No significant changes were found for perceived stress, coping, or teaching-related stress. These findings suggest that a brief, accessible online intervention can effectively shift teachers' stress mindset. Future research should test the intervention with larger samples and address challenges related to participant retention.

## Paper Session 2: Achievement Goal Orientations Across Contexts and Time

### Antecedents of Achievement Goals Revisited: Student and Teacher Perspectives

**Presenting author:** Jan Beck, University of Münster, Germany

#### Abstract

Students' motives reliably explain the adoption of achievement goals—motivational processes that teachers should ideally recognize to support students effectively. Yet, it remains unclear whether teachers possess accurate metamotivational knowledge in general, that is, the degree to that teachers' beliefs about how motivation functions are accurate. Furthermore, there is a lack whether teachers' idiosyncratic metamotivational knowledge helps align their judgments with students' self-reports. To address these questions, 931 secondary school students reported their hope of success (HS), competence expectancy (CE), fear of failure (FF), mastery goals (MG), performance-approach goals (PAPG), and performance-avoidance goals (PAVG). Their 57 teachers rated students from one class each (Md = 21 students) on the same variables. Structural equation modeling (SEM) showed similar relations between students' motives and their achievement goals to previous studies. A multigroup SEM demonstrated structural invariance across students and teachers, indicating accurate metamotivational knowledge at the population level. However, mixed-effects models showed low-to-moderate student-teacher agreement for each variable (HS, CE, FF, MG, PAPG, PAVG) that, in addition, was not significantly related to teachers' idiosyncratic metamotivational knowledge. Overall, findings present a mixed picture. Teachers' structural motive-goal relations mirror those of students, yet their judgments show little alignment with individual students' self-reports, and their idiosyncratic metamotivational knowledge does not improve this alignment. Ways to promote the transfer of metamotivational knowledge into teachers' motivational assessment practice will be discussed at the conference.

### Korean Students' Academic and Social Achievement Goal Profiles: Links to Emotions and Parental Goals

**Presenting author:** Boreum Kim, Ball State University, United States

**Co-author(s):** Gregory Arief D Liem, National Institute of Education, Singapore; Melvin Chan, National Institute of Education, Singapore

#### Abstract

Students' academic and social lives are central to learning, yet little is known about how academic and social achievement goals jointly shape students' achievement emotions and how their perceived parental goals predict these students' endorsement of achievement goals across these domains. This study examined Korean high school students' profiles of academic and social achievement goals and their associations with achievement emotions and perceived parental goals. A total of 1,200 Korean 10th and 11th graders completed measures of 3 × 2 academic achievement goals, social achievement goals, achievement emotions, and perceived parental goals in both domains. Latent profile analysis identified five goal profiles: Low Academic–Modest Social, Modest Academic–Modest Social, Fair Academic–Fair Social Mastery-Approach, Moderate Academic–Fair Social, and High Academic–Moderate Social. Students in the Fair Academic–Fair Social Mastery-Approach profile displayed the most adaptive emotional pattern, characterized by higher positive emotions and lower negative emotions. The High Academic–Moderate Social profile reported high positive emotions but also elevated anxiety and shame. In contrast, the two modest or low profiles experienced less positive and more negative emotions. Perceived parental goals in the

academic domain predicted students' profile memberships in a theoretically meaningful way. Together, these findings showed that Korean students' achievement goals appeared in distinct patterns across academic and social domains; both academic and social goals jointly shaped students' emotional experiences; and perceived parental academic goals played a salient role in profile membership.

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### Destined to decline? Cohort trends in students' goal orientations between 2012 and 2023

**Presenting author:** Zoë Maj Sander, Heidelberg University, Germany

**Co-author(s):** Claudia Schöne, University of Giessen, Germany; Oliver Dickhaeuser, University of Mannheim, Germany; Joachim Stiensmeier-Pelster, University of Giessen, Germany; Birgit Spinath, Heidelberg University, Germany

#### Abstract

There is a widespread perception, particularly among teachers, that school-related learning motivation declines from one generation of students to the next. The present study followed up on earlier work that found negative trends in students' goal orientations between 2002 and 2012. To investigate whether the unfavorable cohort trends of students' goal orientations have continued over the past decade, we compared the second and third standardization samples of the Scales for the Assessment of Learning and Achievement Motivation (SELLMO; Spinath et al., 2002; 2012) (2012: N = 3,348, 2023: N = 1,510). While no differences were found regarding performance-avoidance goals, students in the 2023 sample exhibited a lower learning goal orientation, lower performance-approach goals, and higher work avoidance compared to the 2012 sample. Negative trends in goal orientations were mainly evident among secondary school students. These findings indicate a continuing negative trend in students' school-related goal orientations over more than two decades. Implications of the current findings for future research and practice are discussed.

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### When goal orientations cross paths with ethnic-racial identity: A longitudinal study

**Presenting author:** Mafalda Campos, EDUNOVA.ISPA - Interdisciplinary Research Centre in Education | ISPA - Instituto Universitário, Portugal

**Co-author(s):** Francisco Peixoto, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

#### Abstract

This study examined the cross-sectional and longitudinal associations between motivational orientations and ethnic-racial identity (ERI) among adolescents from diverse backgrounds in Portugal. A total of 616 students from middle and high school (50% female), participated in two data waves over approximately six months. Using structural equation modeling, we examined bidirectional associations between ERI dimensions (exploration, resolution, and affirmation) and goal orientations (task, self-enhancing, self-defeating, and avoidance). Motivational orientations showed distinct longitudinal links with ERI, avoidance orientation being negatively predicted by exploration and positively predicted by resolution. Furthermore, feeling good about one's ethnic group was positively predicted by task orientation. These relationships were mainly observed in the full sample and when testing the model for the native sample only, but not for the minority sample. Within the minority sample only, self-enhancing orientation at T2 was positively predicted by resolution at T1; and exploration at T2 was negatively predicted by task orientation at T1. Furthermore, belonging to a minority group was associated with higher exploration and resolution but lower affirmation. These findings highlight complex interrelations between motivation and ERI, suggesting that strong task orientations may foster more positive ERI processes, whereas

avoidance is linked to less adaptive profiles, with these patterns varying between native and minority youth. In this oral presentation, differences between native and minority you will be discussed, as well as correlations and the importance of SES variables. Limitations, contributions, and implications for promoting adaptive motivational and identity processes in culturally diverse school settings will also be discussed.

## Paper Session 3: Higher Education Motivation and Study Behaviours

### The burden of meaningless learning: How medical students make sense of feeling unmotivated

**Presenting author:** Siem Schipper, University Medical Center Groningen, Netherlands

**Co-author(s):** Wieke van der Goot, University Medical Center Groningen, Netherlands; Janniko Georgiadis, University Medical Center Groningen, Netherlands; Marco de Carvalho Filho, University Medical Center Groningen, Netherlands

#### Abstract

Student motivation is essential for learning, persistence, and well-being, yet medical educators continue to observe low engagement and declining motivation across the curriculum. While motivation research in medical education has identified key types and correlations of motivation, less is known about how students themselves make sense of feeling unmotivated in everyday educational practice. Understanding how students interpret and construct meaning around feeling unmotivated within their (social and cultural) educational contexts, and how this shapes their actions and attitudes toward medical school, can provide new insights to inform the design of educational practices that are more attuned to students' experiences. Accordingly, our research question was: How do pre-clinical medical students make sense of feeling unmotivated? Sixteen pre-clinical medical students participated in an exploratory, qualitative study using rich pictures to depict an experience in which they felt unmotivated, followed by in-depth interviews. Data were analyzed using inductive reflexive thematic analysis within a constructivist paradigm. Four interrelated themes captured students' sense-making processes: (1) It's useless, where boredom and confusion were interpreted as signals of irrelevance; (2) No one cares, reflecting perceived indifference from teachers, peers, or the institution; (3) It is too much, describing how emotional burden and lack of guidance amplified students' feelings of overwhelm; and (4) Transactional attitude, a cynical response in which students only engaged to meet requirements. These findings show that emotions are central drivers of motivational sense-making. Students' interpretations were shaped through social interactions and institutional structures, highlighting motivation as a socially and emotionally constructed process.

### Academic procrastination at the beginning of studies: What role do motivation and personality play?

**Presenting author:** Melissa Kulp, University of Muenster, Germany

**Co-author(s):** Lena Kegel, University of Münster, Germany; Carola Grunschel, University of Muenster, Germany

#### Abstract

The beginning of studies can be an uncertain and challenging time during which students may experience both excitement and declining motivation. We therefore aimed to shed light on the development of academic procrastination already during the first weeks of students' first semester to detect possible adverse dynamics at an early stage. Academic procrastination includes both behavioral and emotional components in terms of delay and subjective discomfort. We examined whether both components increase in the first weeks of studies and how

academic self-concept, conscientiousness, and neuroticism as important motivational and personality determinants relate to delay and subjective discomfort across these weeks. Overall, N = 164 first-year psychology and medical students (83% female; MAge = 20.24 years) reported their weekly delay and subjective discomfort across four weeks at the beginning of studies. Random-intercepts linear mixed effects models revealed a small increase in delay but no change in subjective discomfort. Conscientiousness was negatively related to both components of procrastination, whereas neuroticism was not significantly related to either delay or subjective discomfort. Students' academic self-concept was negatively associated with their subjective discomfort. Our results underscore the role of conscientiousness for both procrastination components. Academic self-concept might be an important factor to understand subjective discomfort. Thus, our study suggests that it is worthwhile to consider academic procrastination already in the first weeks of studies to support students' study behavior right from the start. Future studies should extend our findings by considering a longer period of time and more diverse samples.

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## Proactive Study Behaviours as Protective Factors for Students' Well-being and Academic Achievement

**Presenting author:** Janja Sušić, Faculty of Teacher Education, University of Zagreb, Croatia

**Co-author(s):** Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Antonija Vrdoljak, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Nina Pavlin-Bernardic, Faculty of Humanities and Social Sciences, Croatia

### Abstract

In light of growing mental health struggles among students, the Study Demands-Resources (SD-R) theory offers a useful framework for examining student well-being. Adapted from the occupational field, the SD-R theory highlights that students (like employees) are active in their higher education surroundings, actively optimizing the levels of demands and resources they face, which is a behaviour known as study crafting (SC). Besides SC, students can also incorporate playful study design (PSD) to create optimal study environments and encourage a gain spiral of their well-being. Therefore, this study aimed to examine the protective role of SC and PSD on students' academic well-being by investigating their relationships with student engagement, burnout in higher education, and academic achievement. A total of 366 university students participated in an online study and filled out self-report questionnaires for our main constructs. Two separate structural equation models examining indirect effects were tested, in line with the gain and loss spiral of SD-R. Results of a multivariate model showed that SC and PSD were positively associated with student engagement, while only SC was negatively associated with student burnout. Student engagement was positively and burnout negatively associated with academic achievement. In both models, significant indirect effects of SC on achievement were found through student engagement and burnout. A significant indirect effect of PSD on achievement via student engagement was also found. The findings contribute to further validation of SD-R framework and its central constructs, and highlight the protective role of student' proactive behaviour on their well-being and achievement.

## Effects of Implementation Intentions on Distributed Practice in Higher Education

**Presenting author:** Louise David, Maastricht University, Netherlands

**Co-author(s):** Felicitas Biber, Maastricht University, Netherlands; Rik Crutzen, Maastricht University, Netherlands; Anique de Bruin, Maastricht University, Netherlands

### Abstract

In higher education, the use of effective learning strategies, such as distributed practice, is essential for academic success. Nevertheless, students often do not use these strategies consistently and instead cram their learning shortly before exams. One potential approach to fostering consistent use of effective learning strategies is to form study habits. As habit formation is often initiated by goal-setting via implementation intentions, the present study investigated whether implementation intentions facilitate students' use of distributed practice. First-year university students ( $N = 100$ ;  $k = 1998$  observations) were randomly assigned to one of three conditions: formulating implementation intentions to incorporate distributed practice into their self-study, receiving information about distributed practice only, or a control group. Daily study behavior was assessed over four weeks using experience-sampling method (ESM), followed by a one-week ESM five weeks later to examine transfer effects. Results did not support the hypothesized effect of implementation intentions on distributed practice, as no increase in distributed practice was observed in the implementation intention group compared to the information-only or control group. Instead, students' initial intentions to use distributed practice were a significant predictor of actual engagement. Across groups, temporal effects were found. As exams approached, use of distributed practice, study duration, effort, satisfaction, concentration, and extrinsic motivation increased, whereas distraction decreased. Overall, the findings highlight the central role of assessment demands in shaping study behavior and reveal how motivational dynamics may hinder translation of study goals into sustained behavioral change within students' authentic learning contexts.

## Paper Session 4: Adult, Vocational, and Work-Related Motivation

### Comparative motivational study of apprentices and professionals in Vocational Education and Training

**Presenting author:** David Jan, University of Fribourg, Switzerland

### Abstract

In Switzerland, 60% of young people enroll in initial vocational training at the end of compulsory schooling, 24% of which is terminated prematurely. This study examines the motivational dynamics of apprentices and training companies as key factors in ensuring continuity. The study is based on Ryan and Deci's self-determination theory, which distinguishes between controlled motivations, such as coercion and external pressure, and autonomous motivations, such as intrinsic interest and personal value. This distinction applies to both apprentices and companies: among apprentices, it sheds light on the quality of their commitment to training, while for companies, it indicates whether training is based on legal or economic obligations or voluntary integration into their strategy. A total of 1,647 vignettes were evaluated by 183 respondents (118 apprentices and 65 professionals) using the experimental vignette method. The analysis examined motivational dynamics. Apprentice motivation was found to be the main factor in the completion of training ( $\beta = .572$  to  $.665$ ), while company motivation was found to be the main factor in training capacity ( $\beta = .618$  to  $.771$ ). These motivations complement each other: each party supports

the other's motivation. However, a slight gender bias persists in professional evaluations, with male apprentices receiving less favourable evaluations.

### Language of Flourishing: Wellbeing Literacy for Motivation and Emotion in Higher Education

**Presenting author:** Ana Paula Vital, ISPA - Instituto Universitário / APPsyCI, Portugal

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#### Abstract

Laughter-centered interventions in higher education appear promising, , yet remain under-explored within educational research. This scoping review maps empirical research on laughter-centered approaches (e.g., laughter yoga, laughter therapy, laughter mindfulness, and social laughter dynamics) in higher education between 2005 and 2025. Drawing on ERIC, PsycINFO, Scopus, PubMed, ProQuest, the review synthesizes evidence on emotional outcomes, stress physiology, and motivational processes among university students. Typically based on simulated or intentional laughter that evolves into spontaneous mirth, laughter interventions function as embodied emotion-regulation strategies that reduce perceived stress, anxiety, burnout, and salivary cortisol levels, while modulating autonomic and hypothalamic–pituitary–adrenal responses. Studies also suggest the activation of dopaminergic reward pathways and the release of endorphins, which support positive affect, hope, and cognitive flexibility. This is consistent with the Broaden-and-Build and Self-Determination theories of motivation. Within university samples, pilot and quasi-experimental trials have reported improvements in wellbeing, mental health, academic stress, sleep quality, and academic self-efficacy, and related motivational indicators, as well as enhanced group cohesion and student–teacher rapport. Thus, laughter-based approaches in education emerge as inclusive, low-cost, non-pharmacological tools that foster intrinsic motivation, approach orientation, and readiness to engage in demanding academic tasks. Nevertheless, the literature remains fragmented, with small samples sizes and heterogeneous protocols. The review highlights the need for rigorous longitudinal, randomized designs that use standardized measures of motivation and academic performance. These designs are required to clarify the specific contribution of laughter-centered approaches to learning and human flourishing in higher education.

### Measuring Motivation for Telework: A Self-Determination Theory Approach

**Presenting author:** Rita Couto, Faculty of Psychology, University of Lisbon, Portugal

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#### Abstract

Telework has become a defining feature of contemporary work, particularly post-pandemic, offering flexibility and improved work-family balance but also posing risks such as isolation and stress. Outcomes of telework depend strongly on the motivations driving its adoption (Allen et al., 2015; Kniffin et al., 2021). Grounded in Self-Determination Theory (SDT), this study developed and validated the Telework Motivation Scale to assess five types of motivational regulation: intrinsic, integrated, introjected, external social, and external material (Deci & Ryan, 2000; Gagné et al., 2015). Data from 454 Portuguese employees engaged in full-time or hybrid telework were analyzed using exploratory and confirmatory factor analyses, internal consistency checks, and tests of convergent

and discriminant validity. Concurrent validity was examined through correlations with life satisfaction, work-family balance, and job performance. Results confirmed a stable five-factor structure. Autonomous motivations were positively associated with well-being and performance, while controlled motivations, especially external regulations, were negatively linked. Introjected motivation showed context-dependent effects. The Telework Motivation Scale provides a reliable tool for research and practice, emphasizing the importance of supporting autonomous motivation to enhance employee well-being and organizational effectiveness in telework settings.

### Grit and Self-Efficacy as Predictors of Academic Procrastination

**Presenting Author:** Joana Casanova, University of Minho, Portugal

**Co-author(s):** Eugénia Ribeiro, University of Minho, Portugal; Leandro S. Almeida, University of Minho, Portugal

#### Abstract

Procrastination is a common self-regulatory challenge in higher education, often linked to motivational processes. This study examined whether self-efficacy mediates the relationship between grit, defined as perseverance of effort and consistency of interests, and academic procrastination behaviors. A sample of 509 Portuguese university students (aged 18-58,  $M = 21.61$ ,  $SD = 5.47$ ; 56.6% women) completed measures of grit, self-efficacy, and two procrastination inverse dimensions: task postponement and academic self-regulation. Data showed that higher grit was associated with less task postponement and greater academic self-regulation. Self-efficacy partially mediated the grit-self-regulation relationship but not the association with task postponement. These findings suggest that grit and self-efficacy operate as complementary motivational resources supporting self-regulated learning, though their influence on behavioural delay may differ. Implications for understanding motivational mechanisms in academic settings are discussed.

## Paper Session 5: Online Learning, Distance Education and Motivation

### Patterns of Academic Engagement, Digital Skills, and Smartphone Addiction in Higher Education

**Presenting author:** José Castro Silva, ISPA-Instituto Universitário, Portugal

**Co-author(s):** Pablo Usán Supervía, University of Zaragoza, Spain

#### Abstract

This study examined how academic engagement, digital competence, and smartphone addiction merge into distinct patterns among higher-education students in Portugal and Spain. Using latent profile analysis, three differentiated profiles emerged: (1) Average engagement with higher smartphone use and lower digital competence (=51%), (2) Low engagement and digital competence with moderate smartphone use (=5%), and (3) Higher engagement with lower smartphone addiction and higher digital competence (=45%). These profiles were structurally invariant across countries, suggesting a shared pattern of student functioning within both countries. Multinomial regression indicated that semester, but not country, significantly predicted profile membership, with second-semester students more likely to belong to both the high-engagement and low-engagement profiles relative to the average-engagement group. The results align with theoretical models linking academic engagement to subjective well-being, digital competence to academic resilience, and problematic smartphone use to diminished self-regulation and well-being. Main findings underscore digital competence as a protective factor, highlight smartphone addiction as a potential threat to academic functioning, and reveal meaningful heterogeneity in student trajectories. Implications for higher-education policy emphasize early identification of at-risk students, integration of digital competence into well-being frameworks, and promotion of responsible technology use.

## Higher Education and ChatGPT: A Multi-Country Study on Epistemic Emotions and Their Antecedents

**Presenting author:** Daniela Raccanello, University of Verona, Italy

**Co-author(s):** Roberto Burro, University of Verona, Italy; Giada Vicentini, University of Verona, Italy; Aleksander Aristovnik, University of Ljubljana, Slovenia; Damijana Keržič, University of Ljubljana, Slovenia; Dejan Ravšelj, University of Ljubljana, Slovenia; Lan Umek, University of Ljubljana, Slovenia; Nina Tomažević, University of Ljubljana, Slovenia

### Abstract

Epistemic emotions are essential for higher education (HE) students in the 21st century as they face the complexities of today's digital society. According to Pekrun's generalized control-value theory (CVT), they are strictly interrelated with a range of antecedents and outcomes. Despite the recent surge in research in this field, there is a lack of studies on how students function when faced with generative artificial intelligence (AI). The main aim of the study was to investigate epistemic emotions experienced by HE students when using ChatGPT – the currently leading interactive generative AI system – and their antecedents. Our sample included 11,427 HE students from over 127 countries, who responded to an online survey on ChatGPT use, control, value, and epistemic emotions. A structural equation model indicated positive relations between ChatGPT use and ChatGPT control and value. In turn, ChatGPT control was associated positively with curiosity and negatively with surprise, enjoyment, anxiety, frustration, and boredom; and ChatGPT value was associated positively with positive emotions and anxiety, and negatively with the remaining negative emotions. The model was invariant across gender, study field, and cultural context, confirming the universality of CVT. A linear mixed model revealed a higher frequency of positive rather than negative emotions. It also showed higher enjoyment, surprise, and anxiety, and lower confusion for students from countries with a lower Human Development Index. These findings suggest that fostering epistemic emotions through key antecedents can help create guidelines for the use of generative AI in HE, which could be shared at various policy levels.

## A Meta-Analysis of Affective and Cognitive Outcomes in Synchronous Online Learning

**Presenting author:** Andreas Gegenfurtner, University of Augsburg, Germany

**Co-author(s):** Özün Keskin-Senkal, University of Augsburg, Germany; Alijagic Aldin, University of Augsburg, Germany; Sylvia Gabel, University of Augsburg, Germany

### Abstract

The COVID-19 pandemic led schools and universities worldwide to rapidly shift from traditional, in-person classes to synchronous online learning through webinar platforms such as Zoom, WebEx, and Microsoft Teams. This meta-analysis examined 31 randomized controlled trials (RCTs) involving 3,823 learners to better understand how effective synchronous online programs are for supporting both affective outcomes (such as attitudes, satisfaction, self-efficacy, and interest) and cognitive outcomes (including declarative knowledge and procedural skills). Overall, the findings show that synchronous online learning is more effective than asynchronous online and face-to-face education in improving both learners' affect and their learning performance. The strongest positive effects of webinars appeared when they were compared to waitlist groups and asynchronous courses, and when affective outcomes focused on learners' self-efficacy beliefs. The study also found a significant link between affective and cognitive outcomes. Finally, we highlight practical implications for instructional design and suggest directions for future research on webinar-based learning.

## Who Chooses Online Participation in Hybrid Math Courses? Implications for Motivation and Performance

**Presenting author:** Nawael Niazy, University of Bonn, Germany

**Co-author(s):** Daria Katharina Benden, University of Bonn, Germany; Fani Lauermann, University of Bonn, Germany

### Abstract

As digital teaching, learning and testing becomes routine in higher education, it is essential to understand how participation modality relates to students' motivation, engagement and performance. Drawing on situated expectancy-value theory and using data from 952 STEM students in hybrid higher-education mathematics courses, this study examined 1) the differences in students' entry characteristics (e.g., demographics, prior learning experiences, math- and study-program-related motivations) of students who choose to participate online versus in-person, and 2) the links between online versus in-person participation and students' task-specific motivations, engagement, and performance while participating in a math assessment during class time. Preliminary analyses showed that students who chose online attendance in the courses had lower initial academic and motivational levels, completed fewer items on the math assessment, and underperformed compared to their in-person peers. Propensity score matching on entry characteristics then accounted for possible self-selection bias. In the matched sample, online test takers reported higher task-specific interest and self-concept while utility value and perceived cost did not significantly differ. Although online participants completed fewer items (lower behavioral engagement/persistence), performance indicators showed no significant differences between groups. Hierarchical regressions in the propensity-score-matched sample showed that participation modality explained incremental variance in task-specific motivation and behavioral engagement. Accordingly, online participation can be motivationally engaging yet persistence-vulnerable, underscoring the need to design online assessments that scaffold sustained effort and to interpret scores in light of contextual factors.

## Paper Session 6: Language, Motivation, and Emotion in Higher Education Contexts

### Brain babies: Pride beyond achievement in academic writing

**Presenting author:** David Merry, NUS, Singapore

**Co-author(s):** Yi Xin Tjan, NUS, Singapore; Sin Rou Loo, NUS, Singapore

### Abstract

Pride motivates students to succeed. And success catalyses pride. This picture suggests that pride is a valuable motivational resource, but one available only to high achievers. We interviewed 37 undergraduates about their experiences of pride in academic writing assignments. Their perspectives led us to revise our understanding of the relationship between pride and achievement. Our participants experienced pride not only in achievement, but in effort invested, personal or academic growth, and the essay as a tangible possession. One participant described his essays as "brain babies." Some participants actively cultivated pride through practices such as reading back over their work. However, our participants also believed that pride could inhibit performance through feedback resistance or increased pressure. By giving voice to these perspectives, our research points to the possibility of creating a pride-friendly learning environment through assessment design, feedback strategies, and classroom management. Interestingly, because they are effortful and tangible, writing assignments may be particularly

conducive to pride in learning: an argument for retaining such assignments in uncertain times. On the other hand, instructors and researchers should also consider managing pride's potentially negative consequences on performance. Our participants' experiences thus suggest that pride management may be a fertile area for future research in student motivation.

### How higher education students' individual goals can affect peer feedback provision

**Presenting author:** Amadeus J. Pickal, University of Augsburg, Germany

**Co-author(s):** Melanie V. Keller, University of Augsburg, Germany; Tobias Böttger, University of Augsburg, Germany; Martin Daumiller, University of Freiburg, Germany; Markus Dresel, University of Augsburg, Germany

#### Abstract

In the context of teaching and learning at universities, research has indicated that peer feedback can enhance academic performance, especially when providing feedback. However, these benefits largely depend on students' motivation to provide high-quality feedback, as, for example, indicated by their social and achievement goals. This study explores how students' goals—learning approach, task approach, appearance approach, appearance avoidance, work avoidance, social concern, and social responsibility—relate to the invested effort and time in providing peer feedback as well as the provider-evaluated utility value for the recipient. Over one semester, 186 education students submitted three anonymized essays and provided guided peer feedback. In addition, they reported their goals before each feedback task, as well as the effort spent, time spent, and utility value for the recipient after each feedback task. Using generalized linear models with cluster-robust standard errors, the analysis revealed that especially task approach and social responsibility goals were linked to greater effort in providing feedback, while higher values in appearance approach and social concern goals, as well as lower values in work avoidance goals, were linked to higher utility value for the recipient. These findings emphasize that both academic and social motivations play an important role in producing high-quality peer feedback.

### Goal contents for language learning: developing and validating a domain-specific measure

**Presenting author:** Abigail Parrish, University of Sheffield, United Kingdom

**Co-author(s):** W.L. Quint Oga-Baldwin, Waseda University, Japan

#### Abstract

This talk will report on a study of 281 undergraduate learners of languages other than English at UK universities and 377 mixed-major students enrolled in general English courses in Japan, using the newly-developed Language Goal Contents Index (LGCI). The study uses a two-stage design, with participants completing the Self-Regulation Questionnaire (Academic) in semester 1, and the LGCI in semester 2 of the same academic year. In the Japanese sample, exploratory factor analysis revealed four distinct goal factors: course credit goals, image management goals, skill development goals, and affiliation goals (CFI = .968, RMSEA = .06). Structural equation modelling (CFI = .909, RMSEA = .064) demonstrated that these goal contents aligned with organismic integration theory's motivational continuum. Growth-oriented goals (skill development, affiliation) showed stronger associations with autonomous motivation forms, while performance-oriented goals (course credit, image management) related more strongly to controlled motivation. External regulation strongly predicted course credit goals ( $\beta = .718$ ), introjected regulation predicted image management goals ( $\beta = .662$ ), identified regulation predicted skill development goals ( $\beta = .643$ ), and intrinsic motivation predicted affiliation goals ( $\beta = .337$ ). In the UK sample, results from the first phase showed that participants were highly autonomously motivated, although controlled motivation was significantly higher for students in later years of study when compared with those in their first year. It was also found that

students who had higher perceived ability had higher motivation. Findings from phase two (to be undertaken in February) will also be reported.

## The role of students reading enjoyment for student teachers judgments of students text comprehension

**Presenting author:** Celina Safferthal, University of Education Karlsruhe, Germany

**Co-author(s):** Anja Prinz-Weiß, University of Education Karlsruhe, Germany; Samuel Merk, PH Karlsruhe, Germany

### Abstract

To effectively support students' learning, teachers need to accurately judge the students' comprehension. In classroom situations, teachers are exposed to observable cues, including students' displayed emotions such as enjoyment while reading; however, little is known about whether and to what extent these affective cues influence teachers' judgments of students' comprehension. In this within-subjects study, student teachers (N = 50) watched four videos of students reading a text while expressing enjoyment or a neutral emotion. After each video, they judged the student's text comprehension. Results provided very strong evidence for a substantial effect of students' displayed reading enjoyment on student teachers' judgments ( $\beta = -0.79$ , 95% CI [-0.96, -0.63]). Overall, the findings demonstrate that reading enjoyment serves as a highly salient cue in judgment formation and underscore the importance of teacher education programs to train student teachers in recognizing potential biases arising from students' displayed emotions.

## Paper Session 7: Well-being in digital age

### Momentary and contextual fluctuations in emotional responses to social media in adolescence

**Presenting author:** Fatemeh Irani, University of Helsinki, Finland

**Co-author(s):** Lauri Hietajärvi, University of Helsinki, Finland; Jussi Järvinen, University of Helsinki, Finland; Katja Upadyaya, University of Helsinki, Finland

### Abstract

Adolescents' Social Media Use (SMU) has become a central aspect of their daily lives; however, its relevance to their well-being remains a matter of considerable debate. This study examined adolescents' momentary SMU and concurrent affective states across everyday contexts, alongside how self-determination in SMU and problematic SMU relate to distinct combinations of SMU and affective states. Using Multilevel Latent Profile Analysis (MLPA), we analyzed 2,489 momentary reports from 384 adolescents (aged 13–17; 63% female), collected through the Experience Sampling Method (ESM). At the within-person level, six distinct momentary SMU profiles emerged: detached messaging, distressed messaging, detached scrolling, distressed scrolling, relaxed scrolling, and enthusiastic scrolling. Importantly, these profiles were context sensitive. Distressed messaging was more likely to occur in class and school, whereas relaxed, detached, and enthusiastic scrolling was more common during free time. At the between-person level, adolescents were grouped into six profiles based on their momentary experiences: two active-private profiles (detached and distressed messengers) and four passive profiles (detached, distressed, relaxed, and enthusiastic scrollers). Higher self-determination in SMU was associated with the detached messenger profile, while higher problematic SMU was linked to the distressed messenger profile. These findings highlight the nuanced nature of adolescents' SMU, which varies within individuals, between individuals, and across contexts, underscoring the need for frameworks prioritizing how and when adolescents engage with social media, rather than relying on static categories of beneficial or harmful.

## Problematic Internet Use and Adolescent Psychosocial Outcomes: Cognitive–Emotional Impairment Role

**Presenting author:** Fatemeh Irani, University of Helsinki, Finland

**Co-author(s):** Ali Moazami-Goodarzi, University of Turku, Finland; Katja Upadyaya, University of Helsinki, Finland; Arniika Kuusisto, University of Helsinki, Finland

### Abstract

Problematic Internet Use (PIU) has been widely associated with adolescents' mental health and social functioning; however, few studies have simultaneously examined PIU effect on multiple dimensions of well-being and social interaction while clarifying the psychological mechanisms underlying these associations. In particular, the roles of cognitive/emotional impairment remain insufficiently integrated within a single explanatory framework. The present study investigated whether these mechanisms mediate associations between PIU and two domains of adolescent functioning: well-being (depressive symptoms and life satisfaction) and social-relational outcomes (ostracism, loneliness, and belongingness to group). Path models were estimated in a sample of 215 adolescents (Mean age = 16.10, SD = 1.18, 50% female) using full-information maximum likelihood and bootstrapped confidence intervals (5,000 resamples). Results indicated that PIU was strongly associated with cognitive/emotional impairment and cognitive/emotional impairment consistently mediated associations between PIU and all well-being and social-relational outcomes. Taken together, the findings identify cognitive/emotional impairment as the dominant mechanism linking PIU to both intrapersonal and interpersonal difficulties. This integrative approach advances current PIU research by clarifying the specificity of mechanisms across multiple domains of adolescent functioning.

## Early-career informatics teachers' persistence: The role of motivations for teaching and engagement

**Presenting author:** Dora Petrović, Institute for Social Research in Zagreb, Croatia

**Co-author(s):** Iris Marušić, Institute for Social Research, Croatia; Josip Šabić, Institute for Social Research in Zagreb, Croatia

### Abstract

Early-career teachers, particularly in STEM field, often experience diminished well-being and increased turnover, making it essential to understand factors that support their persistence in the profession. This study examines whether work engagement mediates the relationship between motivations for entering the teaching profession and planned persistence, and whether these pathways differ for informatics teachers. A total of 586 early-career elementary subject teachers, including 127 informatics teachers, completed an anonymous online questionnaire. Results showed that among non-informatics teachers job security, intrinsic value, perceived teaching abilities, and social utility motives were related to planned persistence both directly and indirectly through work engagement. Among informatics teachers, similar paths were found, with two distinctions: work engagement fully mediated the effect of perceived ability and did not mediate the effect of intrinsic value nor job security. Findings highlight the importance of initial teaching motivations for early-career teachers' well-being and retention.

## Wellbeing and Cybervictimization: Roles of Anxiety and Key Life-Domain Worries in Adolescents

**Presenting author:** Mumine Ozturk, Dokuz Eylul University, Türkiye

**Co-author(s):** Alberto Amadori, Free University of Bolzano, Italy; Antonella Brighi, Free University of Bolzano, Italy

### Abstract

Adolescents' future-oriented wellbeing, encompassing hope, perceived competence, and confidence in navigating life's challenges, is a vital developmental and psychological asset. Yet, in today's digital landscape, this form of wellbeing is increasingly shaped by online experiences, including the harmful effects of cybervictimization. Drawing

on the stress and coping framework and transactional models of stress, this study investigates how cybervictimization impacts adolescents' future-oriented wellbeing through interconnected emotional and cognitive mechanisms. We hypothesized that cybervictimization would heighten anxiety, which in turn would intensify worries across key life domains – academic success and future, and peer relationships – ultimately diminishing adolescents' wellbeing. A sample of 754 preadolescents and adolescents (52.01% girls;  $M_{age} = 12.59$ ,  $SD = 1.33$ ) participated in the study. Using structural equation modelling, we tested a serial-parallel mediation model. Results showed that cybervictimization was positively associated with anxiety and directly correlated with increased worries about academic success and peer relationships. Anxiety was further linked to greater concerns across academic/future and peer domains, and was negatively associated with future-oriented wellbeing. These findings highlight anxiety and peer-related worries as key mechanisms through which cybervictimization undermines adolescents' wellbeing. Implications are discussed for developing interventions that prioritise emotional resilience and support adolescents' capacity to maintain a positive outlook in the face of digital adversity.

## Paper Session 8: Achievement Emotions, Beliefs, and Performance in Learning Contexts

### Framing Success and Failure: Instructional Messages Shape Achievement Emotions

**Presenting author:** Sara Laybourn, Ludwig-Maximilians-Universität (LMU), Germany

**Co-author(s):** David F. Sachs, Ludwig-Maximilians-Universität (LMU), Germany; Martin Constant, Université de Genève, Switzerland; Anne C. Frenzel, Ludwig-Maximilians-Universität (LMU), Germany

#### Abstract

Achievement emotions arise in situations where performance is evaluated and can, in turn, shape motivation and performance. Control-value theory and research on achievement goals and motivational climate suggest that how tasks are framed (e.g., as opportunities for learning vs. tests of ability) should strongly influence such emotions. However, less is known about these processes in short, domain-general tasks. In an online experiment, participants ( $N = 127$ ;  $M_{age} = 26.8$ ,  $SD = 7.78$ ) were randomly assigned to one of three instructional framings (encouraging, neutral, discouraging) before completing an eight-block continuous-report visual working memory task. Task performance was indexed as mean recall error per block. After each block, participants reported enjoyment, pride, anger, frustration, and boredom, which were combined into positive and negative emotion composites. Repeated-measures ANOVAs showed that instructional framing robustly shaped emotions: the encouraging condition elicited more positive and less negative emotion than the discouraging condition, with the neutral group in between. Between-person mediation analyses indicated significant indirect effects from instructional condition to overall performance via both positive and negative emotions, but no direct or total effects of condition on performance. Within-person mixed models showed that blocks with worse-than-usual performance were associated with lower positive and higher negative emotion, and this coupling did not differ by condition. These findings highlight how brief instructional messages can meaningfully alter affective dynamics in evaluative situations, even when performance remains relatively stable.

## Self-Determination Theory Meets Control-Value Theory: Basic Needs Shape Beliefs and Emotions

**Presenting author:** David Putwain, Liverpool John Moores University, United Kingdom

**Co-author(s):** Laura Nicholson, Liverpool John Moores University, United Kingdom; Reinhard Pekrun, University of Essex, United Kingdom

### Abstract

Motivation science and emotion research have traditionally developed within separate theoretical traditions, with limited integration across approaches. Self-Determination Theory (SDT) explains how environmental support for the basic psychological needs of autonomy, relatedness, and competence shapes motivation. Control-Value Theory (CVT) examines how appraisals of learning activities and outcomes elicit different achievement emotions. Few studies have combined insights from both approaches. The present study investigated how support or frustration of basic psychological needs relates to students' appraisals of learning activities and outcomes, and how these appraisals relate to achievement emotions. Data were collected from 248 upper secondary students at three time points. Need support and frustration were assessed first, appraisals were measured four months later, and emotions four months after that. Three path models, one for each need, were estimated. Results showed that support for competence, autonomy, and relatedness predicted more adaptive appraisals, which in turn promoted greater enjoyment and relaxation and reduced boredom and anxiety. Autonomy frustration predicted lower intrinsic value and control, indirectly leading to reduced relaxation and increased anxiety. Relatedness and competence further reduced anxiety (and, for relatedness, boredom) by positively affecting intrinsic value and control. Overall, the findings demonstrate clear synergies between SDT and CVT: Support or frustration of basic psychological needs shapes students' appraisals in beneficial or detrimental ways, and these appraisals evoke emotions that can facilitate or impede learning and achievement. The study illustrates the value of integrating propositions from distinct motivational and emotional frameworks.

## A Piece to the Puzzle: The (Un)Lasting Effects of Induced Emotions on Visual Working Memory

**Presenting author:** Arian Musliu, University of Prishtina, Kosovo

**Co-author(s):** Anne Christiane Frenzel, Ludwig Maximilians University, Germany

### Abstract

Emotions are known to shape cognitive processes, yet little is understood about the temporal stability of experimentally induced emotions and their influence on visual working memory (VWM). This study investigated the immediate and lasting effects of induced positive, negative, and neutral emotional states on VWM performance, as well as the extent to which task-related emotions override initially induced affect. Using a repeated-measures experimental design, 181 children aged 11–13 were randomly assigned to one of three conditions: positive, negative, or neutral emotion induction. Emotions were induced via autobiographical recall and assessed repeatedly before induction, immediately after induction, and throughout a 30-minute VWM task. Manipulation checks confirmed successful induction of the targeted emotional states. Results showed that induced emotions exhibited pronounced but short-lived effects: both positive and negative affect peaked immediately following induction and gradually returned to baseline during task engagement. Contrary to expectations, induced positive emotions did not enhance VWM performance. Instead, overall VWM performance improved over time across all conditions, with no sustained differences between emotional induction groups. Exploratory subgroup analyses revealed that task performance moderated emotional recovery trajectories: high-performing participants showed faster recovery from negative emotional induction but a steeper decline in positive affect following positive induction, whereas lower-performing participants exhibited the opposite pattern. These findings suggest that experimentally induced

emotions are transient and are rapidly superseded by task-induced emotional dynamics during sustained cognitive engagement. The results underscore the importance of considering temporal emotional processes and performance-related appraisals when examining emotion–cognition interactions.

### Testing Control-Value Theory: Emotional Arousal, Self-Efficacy, and Exam Performance

**Presenting author:** Jenefer Husman, University of Oregon, United States

**Co-author(s):** Matthew Graham, University of Oregon, United States; Reinhard Pekrun, University of Essex, United Kingdom; Idalis Villanueva, University of Florida, United States

#### Abstract

In this study, we examined the differential functions of electrodermal activity (EDA), a key indicator of sympathetic nervous system reactivity, and self-reported nervousness in relation to university students' item-specific self-efficacy expectations and performance during an engineering exam. Within-person analysis with dynamic structural equation modeling was used to analyze the data. The findings show that EDA had a negative influence on subsequent performance, both directly and indirectly through a negative effect on self-efficacy. Nervousness was influenced by prior performance and, in turn, also indirectly influenced subsequent performance through its effect on self-efficacy. Going beyond previous between-person studies, and in line with control-value theory, the within-person findings of this study highlight that control appraisals (i.e., self-efficacy), physiological responses, and self-reported emotion are reciprocally related and influence performance in an achievement setting.

## Paper Session 9: Feedback, Assessment, and Student Learning Experiences

### Unpacking Student Responses to Discrepant Peer and Teacher Feedback: A Cross-National Comparison

**Presenting author:** Carolina Lopera-Oquendo, The Graduate Center of the City University of New York, Colombia

**Co-author(s):** Anastasiya Lipnevich, The Graduate Center of the City University of New York, United States; Ligia Tomazin, University of Trento (I), Italy; Ignacio Máñez, University of Valencia / Interdisciplinary Research Structure for Reading Research (ERI Lectura), Spain; Samuel Leon, Universidad de Jaen, Spain; Nicola Beatson, University of Otago, New Zealand

#### Abstract

In this experimental study we investigated the influence of discrepant feedback from teachers and peers on emotional responses and feedback appraisals in a sample of university students. A total of 753 tertiary education students from the United States (N = 172), New Zealand (N = 217), and Spain (N = 364), were presented with a scenario wherein they received two (discrepant) feedback messages that varied in terms of their focus and tone (suggestive/neutral vs. evaluative/positive). In the two conditions, the source of feedback was also manipulated. In condition one, participants saw that the teacher offered evaluative/positive feedback, with peers offering suggestive/neutral. In contrast, in condition two, the peer offered evaluative/positive message while the teacher provided suggestive/neutral. The findings from repeated measures ANOVA, cumulative models, and logistic regression revealed a clear preference among students for feedback from teachers over peers, regardless of the message's focus and valence. Positive evaluative messages were found to elicit higher positive emotions. Interestingly, even when peer feedback was viewed as having advantages, students reported higher positive emotions and were more receptive of teacher feedback. These results were consistent across countries, although our findings did reveal country-specific patterns. These insights have practical implications for targeted training on

feedback provision, highlighting the pedagogical value of peer feedback, and offer important insights to engage students with diverse feedback sources.

### Generative learning and motivation in VR: Effects of correct-response vs. tutoring feedback

**Presenting author:** Susanne Narciss, TU Dresden, Germany

**Co-author(s):** Peggy Wehner, TUD Dresden University of Technology, Germany; Jonathan Dyrna, TUD Dresden University of Technology, Germany; Basel Hussein, New York University, United States; Salome Flegr, Dresden University of Technology, Germany; Al Olsen, New York University, United States; Taneim Miah, New York University, United States; Antje Proske, TU Dresden, Germany; Jan L. Plass, New York University, United States

#### Abstract

Virtual Reality Learning Environments (VR-LE) are considered to provide immersive learning experiences and promote students' motivation. However, research is still limited on how various feedback strategies affect learning and motivation in VR-LE. To address this gap, this study compares the conditions and effects of a simple knowledge-of-correct response (KCR) and an elaborated informative tutoring feedback (ITF) strategy in a VR-LE on lunar phases. The design of the VR-LE and the experimental procedure were inspired by productive failure (Sinha & Kapur, 2021) and generative learning approaches (Fiorella, 2023), and the Interactive-Two-Feedback-Loops (ITFL) model (Narciss, 2013). In three VR-study-phases, participants (N=180; currently, n=110) work on three comprehension tasks of increasing complexity within the VR-LE. In phase 1, the productive failure phase, students attempt to solve three tasks without feedback. In Phase 2, students receive either KCR or ITF while solving the same three tasks again. In Phase 3, parallel-task versions are used as near-transfer tasks to assess learning gains. Knowledge, perceived competence, and intrinsic/extrinsic task value are assessed before and after the VR-phases. Following the completion of data collection, repeated-measures MANOVA will be conducted, with feedback strategy (KCR or ITF) as the between-subjects factor. We expect that ITF, compared to KCR, will result in larger gains in comprehension task performance, higher increases in perceived competence and intrinsic task value, and higher post-test performance. This study will provide empirical evidence on the effects of ITF strategies in immersive settings and inform the design of generative instructional support in VR.

### Formative Assessment, Co-Regulation, and Motivational Dynamics in Mathematics Learning

**Presenting author:** Vera Monteiro, ISPA- Instituto Universitário, Portugal

**Co-author(s):** Brunna Brito, ISPA-Instituto Universitário, Portugal

#### Abstract

Formative assessment is commonly presented as a powerful means of enhancing student learning, yet empirical findings remain inconsistent regarding its links to self-regulated learning and the extent to which teachers and students share similar views of assessment practices. This study explored how formative assessment relates to self-regulated learning in lower secondary mathematics by jointly considering students' and teachers' perspectives. Framed within a co-regulatory perspective, formative assessment is conceptualized as an interactive process that emerges through teacher–student exchanges and shared interpretations of learning and feedback. The study involved 509 students from Grades 5 to 9 and 39 mathematics teachers. Students reported their perceptions of formative assessment practices and their self-regulated learning, while teachers reported on their own formative assessment practices. Analyses were conducted at both the student level, using correlational and regression approaches, and the class level, examining differences and congruence between teacher and student perceptions. Results indicated that students' perceptions of formative assessment were positively related to overall self-regulated learning and to its cognitive, metacognitive, behavioral, and motivational dimensions, with particularly

strong associations for behavioral regulation. Teachers consistently reported higher levels of formative assessment practices than those perceived by students. Importantly, greater alignment between teachers' and students' perceptions, especially regarding the clarification of learning goals and the elicitation of learning evidence, was associated with higher levels of students' behavioral regulation and motivational autonomy. Overall, the findings emphasize formative assessment in mathematics as a relational, co-regulated process grounded in shared understanding between teachers and students.

### Tracing primary children's learning experiences via pen pressure and facial expressions

**Presenting author:** Donna Bryce, University of Augsburg, Germany

**Co-author(s):** Jana Spear, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany; Cara-Sophie Enste, University of Education Weingarten, Germany; Robert Grassinger, University of Education Weingarten, Germany

#### Abstract

Independent learning places substantial demands on children's motivation, emotions, and metacognitive regulation, particularly in primary school when self-regulated learning skills are still emerging. These experiences can shift quickly within a single task, yet capturing such fluctuations in real time without interrupting learning remains challenging. This study examined whether unobtrusive trace data can be used to assess young learners' cognitive and affective experiences in authentic classroom settings. Across two classroom studies with more than 580 third- and fourth-grade students in Germany, children learned mathematics using a tablet-based digital learning environment equipped with digital pens and webcams. Pen pressure was recorded during different task phases, and facial expressions following feedback were coded for emotional valence. Linear mixed-effects models showed that both the level and variability of pen pressure increased with task difficulty and after positive feedback, indicating sensitivity to cognitive load and arousal. Greater variability in pen pressure on difficult, incorrect items may reflect uncertainty-related metacognitive experiences. Facial expressions were more positive following positive feedback and aligned with children's self-reported affect, while task difficulty influenced emotional reactions in more nuanced ways, suggesting attributional processes. Overall, the findings highlight the potential of pen pressure and facial expression data to unobtrusively capture motivational and emotional dynamics during classroom learning.

## Poster Session 1. Mathematics Emotions, Motivation, and Achievement Across Early and School Years

### The Relationship between Emotions and Early Mathematics Outcomes: A Scoping Review

**Presenting Author:** Traci Kutaka, University of Virginia, United States

**Co-author(s):** Laura Kohler, University of Virginia, United States

#### Abstract

This scoping review maps the range of studies that describe the relationship between achievement emotions and mathematics problem-solving behavior and learning outcomes in the early years (ages three- to eight-years old). Two research questions framed our selection of literature. Research Question 1: What is known about the contributions of achievement emotions (AEs) to mathematics outcomes in the earliest years of school? To this end, we record (1a) which AEs receive empirical attention, (1b) the methods used to characterize and/or measure AEs, (1c) the nature of the mathematical tasks and (1d) contexts in which data was collected, as well as (1e) patterns of findings. Research Question 2: What are the current gaps in knowledge and research priorities about achievement

emotions in young children? This review is ongoing - We will report the findings of RQ1 using descriptive methods that rely on numerical data to illuminate which areas or topics of inquiry dominate the literature. This will be followed by a deductive analysis of the RQs 1a-1e to make comparisons across studies, identify contradictory evidence, and identify gaps in our knowledge to address Research Question 2. We are presently on Step 4 in the review process (of 5 via Levac et al., 2010), such that we have charted the data for 4 (out of 68) studies. We are on track to complete this step by the end of April 2026.

## P2 - A Meta Analysis of the Relationship between Student Engagement and Mathematics Achievement

**Presenting Author:** Johannes Grødem, University of Stavanger, Norway

**Co-author(s):** Erin Margaret Mctigue, University of Stavanger, Norway; Oddny Judith Solheim, University of Stavanger, Norway

### Abstract

Student engagement is a multidimensional construct associated with improved learning outcomes, persistence, and reduced dropout. Mathematics achievement is similarly critical for students' long-term opportunities and for meeting global needs for STEM-proficient workers. This meta-analysis examines the magnitude of the association between student engagement and mathematics achievement. In addition to estimating an overall correlation, the analysis investigates whether the four dimensions of engagement (affective, behavioral, cognitive, and social) show differential associations with achievement. Eligible studies include K-12 samples, are published in 2003 or later, written in English, peer-reviewed, quantitative, and report correlations between student engagement and mathematics achievement at the individual student level. Moderator analyses will assess the influence of measurement type, mean age, grade level, geographical region, gender composition, socioeconomic status, subject specificity of engagement, and publication year. Data extraction and coding are currently ongoing, and the final meta-analytic results will be available at the time of the conference. This study aims to provide the most comprehensive and up-to-date synthesis of how distinct dimensions of student engagement relate to mathematics achievement, offering insights for theory development, intervention design, and future research on student motivation and learning.

## P3 - Behavioral and Emotional Risk as Predictors of Math Motivation

**Presenting Author:** Bridget Dever, Lehigh University, United States

### Abstract

Mental health concerns in schools are often categorized as either externalizing/behavioral or internalizing/emotional problems. Externalizing problems include overt behaviors such as hyperactivity and conduct problems; internalizing problems include covert difficulties such as worry and sadness. A small but growing body of literature provides evidence that behavioral problems are associated with lower task value, interest, engagement, and efficacy. Furthermore, emotional difficulties have been associated with lower efficacy. In the interest of prevention, schools are moving toward screening for behavioral and emotional risk to facilitate early intervention rather than solely relying on more severe classifications of behavioral and emotional problems. The present study conceptualized motivational outcomes using Expectancy-Value Theory to explore whether behavioral and emotional risk predicted: 1) concurrent motivation and/or 2) motivational trajectories across time. Based on multilevel models, emotional risk predicted lower concurrent efficacy and attainment value, and higher cost value, in mathematics. Trajectories were stable for math efficacy, attainment, interest, and cost value. Math utility value decreased across time, and emotional risk predicted even steeper declines. Behavioral risk was not a significant predictor of any concurrent or longitudinal outcome. The results indicate that emotional risk is critical for predicting both concurrent math motivation and declines in math motivation in middle school. Future studies should consider whether early interventions aimed at ameliorating emotional risk could also mitigate declines in math motivation in early adolescence.

## P4 - The Longitudinal Interplay of Mathematics-Self-Concept, Interest, Cost, and Performance

**Presenting Author:** Mathilda Sandman, Åbo Akademi University, Finland

**Co-author(s):** Anna Widlund, Åbo Akademi University, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Johan Korhonen, Åbo Akademi University, Finland

### Abstract

Prominent motivational theories (Situated expectancy-value theory) suggest that students' expectancies for success, positive task values and costs are significant predictors of subsequent performance. Prior research has extensively studied these relations, however, most work is grounded on analyses combining within- and between-student variances. In our study, we utilized a random intercept cross-lagged panel model (RI-CLPM), which separates these variances, thus providing a more nuanced view of the relations. Specifically, our study explores the longitudinal relations between math motivational beliefs (self-concept, interest, emotional cost) and math performance across Grades 4 to 6 (10-12-year-olds,  $N = 584$ ). The dataset consists of six timepoints, measuring motivation and performance twice per school year. Between-person results showed that the positive motivational beliefs (self-concept and interest) were positively related to each other and math performance, while emotional cost was negatively related to the positive motivational beliefs and math performance. The within-person results revealed that higher-than-usual interest predicted higher-than-usual self-concept and lower-than-usual emotional cost at the next time point. Higher-than-usual self-concept predicted lower-than-usual emotional cost at the next time point, and vice versa. No cross-lagged relations were found between motivational beliefs and math performance. However, within-student correlations indicated a concurrent relation between these constructs, rather than a longitudinal one. In conclusion, math interest seems as a promising candidate to target in interventions among 10-12-year-olds, as it was linked to later positive (self-concept) and negative (emotional cost) motivation. Emotional cost seems to harm self-concept already in 4th grade, highlighting the importance of also preventing negative emotions related to math.

## P5 - Tracing the Co-Development of Mathematics Anxiety, Enjoyment, and Boredom in Late Elementary School

**Presenting Author:** Hans Lehtikainen, University of Oulu, Finland

**Co-author(s):** Johan Korhonen, Åbo Akademi University, Finland; Anna Tapola, Åbo Akademi University, Finland; Pinja Tähti, University of Helsinki, Finland; Riikka Mononen, University of Oulu, Finland

### Abstract

Mathematics-related achievement emotions play a central role in students' engagement and learning, yet little is known about their developmental dynamics during late elementary school. In this study ( $N = 319$ ), we examined the developmental trajectories of mathematics anxiety, enjoyment, and boredom from Grade 4 to Grade 6, as well as their associations with gender and mathematics performance. A series of latent growth curve models indicated overall unfavourable changes in mathematics-related emotions: enjoyment declined over time, whereas anxiety and boredom increased. Parallel process models showed that changes in emotions were interrelated: an increase in anxiety was associated with a decrease in enjoyment and vice versa, whereas a decrease in enjoyment was linked to an increase in boredom and vice versa. In contrast, changes in anxiety and boredom were not significantly associated. Higher initial mathematics performance was related to more favourable emotional profiles at onset, including lower anxiety and boredom and higher enjoyment. However, higher performance was also associated with a steeper decline in enjoyment and a stronger increase in boredom over time. Regarding gender differences, girls reported lower initial enjoyment and exhibited a steeper increase in mathematics anxiety over time. Finally, later mathematics performance was predicted only by prior performance and gender. By demonstrating interconnected yet somewhat distinct emotional change processes, the study highlights the complex emotional dynamics underlying mathematics learning.

## P6 - Math anxiety and performance: The mediating role of task related emotions and working memory

**Presenting Author:** Dora Korać, University of Zagreb; Faculty of Croatian Studies, Croatia

**Co-author(s):** Barbara Rončević Zubković, University of Rijeka, Faculty of Humanities and Social Sciences, Croatia

### Abstract

Emotions can exert both facilitative and detrimental effects on learning outcomes and math performance. According to models of mathematical problem solving, such as Regulated attention in mathematical problem solving (RAMPS) (Scheibe et al., 2023), these effects arise from the interaction between emotional and cognitive processes during self-regulated problem solving, particularly with respect to working memory capacity. The aim of this study is to provide further insight into the role of emotional experiences at the Task × Person level of mathematical problem solving by examining the relationships between math anxiety, epistemic emotions, working memory capacity, and math performance. A total of 327 university students completed a math anxiety questionnaire and ten math word problems, as well as epistemically-related emotion scales (curiosity, confusion, anxiety, and boredom) and working memory tasks (OSPAN and RSPAN). A significant direct effect of math anxiety was observed on all epistemic emotions, along with significant effects of task-related curiosity, anxiety, and boredom on working memory span. In addition to the direct effects of math anxiety, confusion, and OSPAN on performance, significant indirect effects of math anxiety on performance were identified, mediated by curiosity and confusion. Significant indirect effects of math anxiety were also observed on OSPAN, mediated by task-induced anxiety, boredom, and curiosity, as well as on performance, through task-related anxiety and OSPAN. These findings extend existing knowledge on the role of emotions and cognitive resources during mathematical problem-solving process and provide empirical support for the relationships among specific components proposed by the recent RAMPS framework.

## Poster Session 2. AI, Digital Technologies, and Motivation/Emotion in Education and Work

### P7 - A Scoping Review of Generative AI's Role in Eliciting Learning Interest in Educational Settings

**Presenting Author:** Yuet Ki (Leean) Ning, The University of Hong Kong, Hong Kong

**Co-author(s):** Luke Fryer, The University of Hong Kong, Hong Kong

### Abstract

Since ChatGPT's launch, Generative Artificial Intelligence (GenAI) has seen increasing use in educational settings. Despite the popularity of investigating GenAI's positive impact on students' academic performance, few studies have asked about why GenAI could exert such impact. One hypothesis is that the integration of GenAI in educational context can elicit learning interest which is an important factor in improving students' academic performance. However, to the best of our knowledge, no study has been conducted to systematically review the impacts of GenAI on students' learning interest. This scoping review aims to not only fill this gap, but also review the most helpful GenAI features for this type of learner support. To do so, we start with descriptive analysis on the relationship between GenAI and students' learning interests. Then we analyze how this correlational impact would shape students' academic performance. Our analysis will draw conclusions that can inform future educational practices and educational technology advancements.

## P8 - Achievement Goals and AI Dependency in Higher Education: The Moderating Role of AI-Self Efficacy

**Presenting Author:** Boreum Kim, Ball State University, United States

**Co-author(s):** Dajung Diane Shin, Kyungnam University, Republic of Korea; Giovanni Guia, Ball State University, United States

### Abstract

As artificial intelligence (AI) tools become increasingly integrated into higher education, concerns have emerged regarding students' overreliance on AI across emotional, cognitive, and behavioral domains. This study examined the motivational mechanisms underlying AI dependency by integrating the 3 × 2 achievement goal framework with AI self-efficacy. A total of 300 U.S. college students completed measures of achievement goals, AI self-efficacy, and multidimensional AI dependency (emotional, cognitive, and behavioral). To address conceptual overlap between approach and avoidance goals, separate moderated regression models were estimated for approach-based and avoidance-based goal frameworks, with AI self-efficacy examined as a moderator. Results indicated that task- and self-approach goals were respectively associated with lower behavioral and emotional dependency, whereas other-based goals predicted higher dependency across several domains. AI self-efficacy emerged as a strong positive predictor of all forms of AI dependency and significantly moderated several goal-dependency relationships. Simple slope analyses showed that self-based goals were protective against AI dependency primarily among students with high AI self-efficacy. These findings underscore the role of achievement motivation and perceived competence with AI in shaping students' reliance on AI tools in academic contexts.

## P9- GenAI for Motivation and Engagement: The Good, the Bad, the Ugly... and Intervention Potential

**Presenting Author:** Meg Farrell, Technische Universität München, Germany

**Co-author(s):** Olenka Maythe Pando Cotrina, Technische Universität München (TUM), Germany; Linyuan Zhang, Technical University of Munich, Germany; Beril Eren, Technical University of Munich, Germany

### Abstract

The rapid expansion of artificial intelligence (AI) in K-12 education, coupled with a fast-evolving research landscape, presents challenges for teachers seeking evidence-informed guidance on how AI may support student motivation and engagement. Timely synthesis of emerging evidence is therefore needed. This study aims to provide a preliminary overview of research on teachers' use of AI tools for motivating and engaging K-12 students. Specifically, it examines which AI tools are used, how these tools align with the ARCS motivational design framework (Attention, Relevance, Confidence, Satisfaction), and what motivational or engagement outcomes have been reported. A needs-based rapid review was conducted following PRISMA guidance for overview reviews. Drawing on a preliminary teacher needs assessment, systematic reviews and meta-analyses were identified through database and hand searches. Twenty-three reviews addressing motivation or engagement outcomes were analyzed. AI tools were thematically mapped to ARCS components, and reported outcomes were categorized as positive ("Good"), mixed or null ("Bad"), or negative ("Ugly"). Findings indicate that AI tools most often support Confidence and Satisfaction through personalization and feedback, while Relevance remains underrepresented. Although many tools show promising motivational effects, particularly chatbots and intelligent tutoring systems, mixed and negative outcomes-including overreliance and reduced autonomy-were also reported. Results highlight both opportunities and risks, underscoring the need for targeted intervention research and AI literacy initiatives.

## P10 - Motivation to Use AI Among Aspiring Entrepreneurs

**Presenting Author:** Jule Hangen, Goethe University Frankfurt, Germany; Vinzent Weber, Goethe-University Frankfurt, Germany; Eveline Wuttke, Goethe-Universität Frankfurt, Germany

### Abstract

Artificial intelligence (AI) is widely regarded as a key driver of productivity growth and economic innovation. At the same time, rapid technological change increases the demand for digital competence and continuous learning, particularly for individuals aiming to found AI- or data-driven start-ups. In this context, understanding motivational factors shaping AI use is essential for effective entrepreneurship education. This study examines intrinsic and extrinsic motivation to use AI applications within a 9-week start-up programme combining workshops, seminars, and networking events. Using a longitudinal pre-post design, data were collected via questionnaires administered before and after the programme. Pre-post analyses were based on matched data from participants who completed both surveys (n = 45). Measures included intrinsic and extrinsic motivation to work with AI (adapted to the AI context) and self-assessed knowledge about key aspects of starting a business. All items were rated on a 4-point Likert scale. Results indicate that both intrinsic and extrinsic motivation declined significantly over the course of the programme but remained above the scale midpoint. In contrast, participants' self-assessed start-up knowledge increased significantly from pre to post. No significant relationships were found between pre-programme motivation and post-programme start-up knowledge. A major limitation is the high attrition rate at the second measurement point. Overall, the findings highlight motivational dynamics in AI-related entrepreneurship education and underline the need for further research linking motivation to actual entrepreneurial implementation.

## P11 - Who Knows Best How You Feel? Emotional States Analyzed by a Researcher, AI, and Learners Themselves

**Presenting Author:** Niklas Heikkala, University of Oulu, Finland

**Co-author(s):** Haoyu Chen, University of Oulu, Finland; Chengyan Wang, University of Oulu, Finland; Hanna Järvenoja, University of Oulu, Finland; Tiina Törmänen, University of Oulu, Finland

### Abstract

Emotions are multi-component and situation-specific phenomena that fluctuate rapidly during learning. In collaborative learning, emotions are deeply embedded in social interactions, which makes their analysis particularly complex. Novel methods, such as those combining video observations with physiological data, have begun to emerge. However, video-based approaches remain highly labor-intensive, limiting scalability, the analysis of large datasets, and ultimately constraining theoretical advancements in understanding emotion formation in collaborative learning. This study answers this methodological need and explores artificial intelligence (AI)-based methodological approaches for detecting emotions in collaborative learning. Six groups of higher education students engaged in seven 90-minute collaborative learning sessions. Collaboration was videotaped using two high-quality cameras and audio recorded with individual microphones. In the preliminary phase of the analysis, 10 minutes of data per student were coded for emotional valence, activation, and control-value appraisals. In the analysis phase, the emotional states are identified with three approaches: (1) human coders; (2) AffectGPT AI annotation tool; and (3) learner self-annotation, in which students reviewed and refined AffectGPT's predictions. The comparison reveals where the three approaches align and diverge, and what distinct insights each contribute. Overall, the results illustrate how hybrid intelligence methodological approaches, combining the strengths of both humans and AI, could be implemented in emotion research. Based on the results gained, the study will continue to analyze the full data set to further develop the human-AI analysis approaches for scalable emotion research in learning sciences.

## P12 - Understanding Teacher Well-Being With Digital Technologies: A Cross-Cultural Study

**Presenting Author:** Cécile Vassaux, UNIGE, Switzerland

**Co-author(s):** Eija Juntunen, University of Helsinki, Finland; Gaëlle Molinari, TECFA, Université de Genève, Switzerland; Joris Felder, Haute école pédagogique de Fribourg, Switzerland; Katja Upadyaya, University of Helsinki, Finland

### Abstract

Pre-service teachers are trained to work in environments where digital technologies are increasingly prevalent, giving rise to cognitive, emotional, and organisational challenges that may affect their well-being and long-term professional engagement. Yet little is known about how they represent their well-being in the context of teaching with digital technologies and how these representations vary across cultural settings. This cross-cultural study therefore examines both the universal and context-specific dimensions of the social representations of teacher well-being in teaching with digital technologies. Participants were 105 pre-service teachers from Finland and 91 from Switzerland. Using a hierarchical evocation task with the inductor "teacher well-being in the context of teaching with digital technologies", participants generated five associated words, ranked them by perceived importance, and evaluated their connotations. The corpus was then lemmatised, followed by a prototypical analysis and a polarity test to assess attitudinal orientations. The results showed that terms such as ease of use, workload, digital competence, resource, artificial intelligence and support were common across both groups, although their frequency and importance differed. Distinctive features also emerged: among Finnish participants, exhaustion, digital competence, workload, physical problems and coping were particularly salient, whereas for the Swiss participants, ease of use and tool appeared as central elements. The most notable differences concerned attitudinal orientation. Finnish pre-service teachers produced a balanced proportion of positive and negative terms, while Swiss pre-service teachers displayed a more positive orientation towards this representation. Overall, the results reveal how cultural context shape pre-service teachers' anticipatory perceptions, highlighting implications for teacher education.

## Poster Session 3. Teachers' Well-Being, Professionalism, and Classroom Functioning

### P13 - Associations Between Self-Rated Social-Emotional Competence and Perceived Stress in Teachers

**Presenting Author:** Marilyn Jurman, Tallinn University, Estonia

**Co-author(s):** Karin Lillemaa, Tallinn University, Estonia; Elina Malleus-Kotsegarov, Tallinn University, Estonia; Eve Kikas, Tallinn University, Estonia

### Abstract

Teachers face high emotional and cognitive demands, which can elevate stress levels and impact professional functioning. Our study examined how different domains of teachers' self-rated social-emotional competence (SEC) relate to perceived stress. Grounded in the Collaborative for Academic, Social, and Emotional Learning (CASEL) framework, we assessed five SEC domains (self-awareness, self-management, social awareness, relationship skills, responsible decision-making) among Estonian primary and secondary school teachers (N = 528). Perceived stress was measured using the Estonian version of the Perceived Stress Scale. Correlational analyses revealed significant negative associations between perceived stress and all five SEC domains. However, only self-management and self-awareness emerged as unique predictors in multiple regression analyses ( $R^2 = .11$ ,  $p < .001$ ). Further, logistic regression showed that lower self-management significantly increased the likelihood of teachers being classified in the high-stress group. Notably, the key predictors captured intrapersonal capacities such as goal-setting, motivation, and emotional self-awareness, which may be particularly vital in coping with uncertainty

and maintaining well-being in emotionally demanding educational contexts. The study adds to empirical knowledge on how distinct aspects of SEC relate to teacher stress, offering direction for targeted support strategies.

### **P14 - Teacher Self-Regulation and Well-Being in Teacher Education: Affective Dynamics under Uncertainty**

**Presenting Author:** Daniel Trias Seferian, Universidad Católica del Uruguay, Uruguay

**Co-author(s):** Nigel Manchini, Consejo de Formación en Educación, Uruguay

#### **Abstract**

Understanding the affective and self-regulatory dynamics that sustain the well-being of preservice teachers represents a relevant challenge for research on motivation and emotion. This study is situated in primary and secondary teacher education and examines the role of teacher self-regulation (TSR)-understood as a dynamic and contextually situated psychological process involved in the construction of the professional teaching role-in relation to different dimensions of well-being and affective experience. Using a correlational design with 389 preservice teachers, the predictive capacity of teacher self-regulation was examined in relation to life satisfaction, career well-being, teacher well-being, and positive and negative affect. Profiles of high and low teacher self-regulation were identified, and emotional experiences distinctive of these profiles were explored through text mining procedures applied to an open-ended question in which participants reported emotions associated with their training experience. Results indicate that teacher self-regulation is positively and significantly associated with indicators of global and professional well-being, as well as with positive affect, explaining meaningful proportions of variance. In contrast, no significant association was found between teacher self-regulation and negative affect. Analysis of emotional language revealed a shared pattern of feeling overwhelmed by training demands; however, profiles of high teacher self-regulation showed greater references to control, reflection, and personal agency. Taken together, these findings suggest that teacher self-regulation in preservice teachers is linked to well-being and positive affect without necessarily implying the suppression of emotional distress. Implications for contemporary models of motivation and emotion and for initial teacher education are discussed.

### **P15 - Teachers' Self-Reported Characteristics and Observed Classroom Interaction Quality**

**Presenting Author:** Veronika Kalle, Tallinn University, Institute of Educational Sciences, Estonia

**Co-author(s):** Anna-Liisa Jõgi, Tallinn University, Institute of Educational Sciences, Estonia; Piret Soodla, University of Tallinn, Estonia

#### **Abstract**

Inclusive education relies on teachers' emotional and motivational resources to create a supportive learning environment. This study examined links between teachers' self-reported emotional well-being, self-efficacy and attitudes towards inclusive education, and observed classroom teacher-student interaction quality. Participants were 42 Estonian primary school teachers whose lessons were observed using CLASS-K3 (Pianta et al., 2008) in spring 2025. Teachers also completed questionnaires on stress, burnout, self-efficacy for inclusive practices and attitudes towards inclusion. Correlation analyses showed that teachers' work-related stress and negative attitudes towards inclusive education were associated with lower self-efficacy and poorer observed classroom practices. Teachers experiencing higher work-related stress provided less effective Classroom Organization and Emotional Support, while teachers holding more negative attitudes towards inclusion provided lower levels of Instructional Support. General stress and burnout were not reflected in the observation scores. These results suggest that teachers' beliefs about inclusion and work-specific stress are more significant for the quality of interactions in inclusive classrooms than overall well-being, highlighting the importance of improving teachers' working conditions and competence in teaching in an inclusive classroom to increase the classroom interaction quality.

## P16 - Teacher Responsibility Scale: Evidence of Validity and Reliability in Portuguese Teachers

**Presenting Author:** Tiago Santos, ISPA-Instituto Universitário | EDUNOVA.ISPA, Portugal

**Co-author(s):** Francisco Peixoto, ISPA-Instituto Universitário | EDUNOVA.ISPA, Portugal

### Abstract

Teachers' perceptions of responsibility are a key element of teaching practice and have been linked to student outcomes. Validating the Teacher Responsibility Scale (TRS; Lauermaann & Karabenick, 2013) for the Portuguese context is therefore important to advance research on this construct among Portuguese teachers. This validation will also provide a basis for future work examining associations between teacher responsibility and other relevant constructs, such as motivation and organizational dimensions (e.g., school climate and leadership styles). This study reports the validation of the TRS with Portuguese teachers using two independent samples. Participants in Study 1 were 166 teachers, and participants in Study 2 were 700 teachers from primary to secondary education, representing different regions of the country. To examine the scale's structure, we conducted an exploratory factor analysis (EFA) in Study 1 and a confirmatory factor analysis (CFA) in Study 2. The EFA supported a four-factor structure consistent with prior findings on the TRS, with good internal consistency across factors. In Study 2, we will test a CFA model with 12 items loading on four factors, assess reliability using Cronbach's alpha and composite reliability, and examine external validity through associations with selected dimensions of the Teacher Motivation Scale (Butler, 2012). Overall, we expect to obtain a valid and reliable instrument for assessing teacher responsibility among Portuguese teachers, thereby supporting future research and informing educational interventions in this area.

## P17 - Reflection on emotional competences to professionalise for uncertain school situations

**Presenting Author:** Regine Lehberger, Paderborn University, Germany

### Abstract

Professional emotion regulation strategies are particularly crucial for teachers, as they have to manage their own emotions and those of their pupils in complex, ambiguous and uncertain practical school situations. This study examined the impact of an educational science seminar at university, that accompanies student teachers during their practical semester at school. It focussed on the topics of professional coping behavior, emotion regulation strategies and the reflection on practical school experiences. 87 students took part in the study, but only the data of those who participated in both measurement times were included in the data set ( $n = 76$ , mean = 25 years / sd 2.6, 45 female = 59%, 18 male = 24%, 2 diverse = 2.6%). Data were collected at the beginning and end of the semester and the Sek-27 (emotion regulation) and AVEM (work-related coping behaviour) instruments were used. Findings indicated that emotion-regulation and -understanding competences were evaluated significantly more negative at the end of the semester. This results may show that the confrontation with uncertain, and therefore emotionally challenging, practical teaching experiences and the reflection on this has led students to become aware of their own gaps in emotional competences. Furthermore, there were more significant correlations between emotion-regulation strategies and work-related coping behavior after the practical semester which could indicate more stable job-related competencies at this point. Because those competencies are highly relevant for the professionalisation of teachers, teacher training should offer appropriate learning opportunities. Emotion-reflection processes could be a promising starting point in this regard.

## P18 - Lessons Learned from Meta-Analyzing the Relationship between Self-Efficacy and Emotions in Teachers

**Presenting Author:** Yu-Jui Cheng, Ludwig-Maximilians-Universität (LMU), Germany

**Co-author(s):** Kendra Wells, University of Alberta, Canada; Lia M. Daniels, University of Alberta, Canada; Anne C. Frenzel, Ludwig-Maximilians-Universität (LMU), Germany

### Abstract

Meta-analyses are increasingly important in educational psychology, yet the practical challenges of following PRISMA are rarely discussed. This contribution shares methodological and conceptual "lessons learned" from the systematic review phase of a dissertation meta-analysis on associations between teachers' discrete emotions and self-efficacy. Theoretical models, including control-value theory, and empirical research suggest a reciprocal relationship whereby teachers' appraisals of control, which are closely aligned with self-efficacy, shape emotions, which in turn feed back into motivation, engagement, and efficacy beliefs. Empirically, higher teacher self-efficacy is associated with more enjoyment and pride and less anxiety, anger, and frustration. However, findings are dispersed across disciplines, operationalized inconsistently, and difficult to synthesize - conditions that make a meta-analysis timely and important. A comprehensive search of studies published between 1995 and 2023 yielded 29 studies retained for full extraction, comprising 95 emotion × self-efficacy correlation pairs. Our lessons learned include the importance of early definitional boundaries to avoid jingle-jangle fallacies, challenges posed by inconsistent reporting of effect sizes and descriptive statistics, and heterogeneity in emotion measurement. Preliminary descriptive results of the retained studies show patterns consistent with theory: positive associations between self-efficacy and enjoyment, pride, and love/caring, and negative associations with anxiety, anger, frustration, fatigue, and hopelessness. The dataset also demonstrates strong international representation but limited standardization in emotion measures. Implications include the need for improved statistical reporting, greater use of validated emotion scales, and integration of both emotions and self-efficacy in large-scale datasets to support cumulative teacher-focused research.

## Poster Session 4. Emotion Regulation, Self-Regulation, and Flourishing

### P19 - Daily Dynamics of Global and Domain-Specific Self-Esteem in Youth: An EMA Study

**Presenting Author:** Katharina Ochs, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Co-author(s):** Florian Schmiedek, DIPF | Leibniz Institute for Research and Information in Education; Cognitive Development, Germany; Andrea Irmer, DIPF | Leibniz Institute for Research and Information in Education; Lena M. Wieland, DIPF | Leibniz Institute for Research and Information in Education

### Abstract

Although global and domain-specific self-esteem are known to be reciprocally related in children and adolescents, existing evidence is largely limited to cross-sectional and long-term longitudinal data with few measurement occasions. From a developmental perspective, self-esteem is inherently dynamic, with individuals differing in the stability and fluctuation of their self-evaluations over time. These dynamics may be developmentally meaningful, with stability or instability in specific domains shaping global self-esteem, and vice versa. While moment-to-moment or day-to-day relationships between global and domain-specific self-esteem remain largely unexplored, examination of such dynamics could advance our current understanding of self-esteem development in children and adolescents. Using an ecological momentary assessment (EMA) design, we plan to examine these relationships based on intensive longitudinal data from approximately  $n = 240$  children and adolescents aged 10-16 years. Participants will complete EMAs on global and domain-specific self-esteem (social, performance, and appearance) three times daily for three weeks. We will test the psychometric quality of the momentary measures for global and

domain-specific self-esteem and model their dynamic interplay over time. Using multilevel models, we will examine contemporaneous, autoregressive, and cross-lagged effects at the within-person level, capturing how stability and fluctuation in self-esteem are linked over time. Finally, we will examine systematic between-person differences—such as perceived domain importance or self-efficacy—as potential moderators of within-person self-esteem dynamics. Findings will be discussed for their potential to inform interventions aimed at supporting positive self-esteem development during childhood and adolescence.

## P20 - An intraindividual and conditional approach to motivation regulation

**Presenting Author:** Linda Zenger, University Utrecht, Netherlands

**Co-author(s):** Barbara Flunger, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

### Abstract

When facing motivational problems, students can use autonomy-regulation and motivation-regulation strategies to enhance their motivation. Motivation regulation has mainly been studied cross-sectionally. However, students' motivation regulation has been found to depend on situational (e.g., type of task) and personal (e.g., affective perception of task) factors, and therefore can fluctuate over time. Only recently, research started to investigate motivation regulation from an intra-individual perspective, which is needed to gain better insights into its complex and dynamic nature. Moreover, survey methodology indicates that internal processes are reported more accurately when they are anchored to salient, problem-triggered experiences. Such an approach might reveal more accurate associations between strategy use and outcomes, because frameworks on motivation regulation underline that students need to be aware of their motivational problem before being able to self-regulate their motivation effectively (i.e., meta-motivational monitoring). Therefore, the present study relied on a conditional approach (assessing use of motivation regulation in case students reported motivational problems), tapping into the proposed monitoring-control sequence to investigate individual trajectories of distinct motivation-regulation strategies and motivation (RQ1), covariations between these trajectories (RQ2), and associations with predictors (RQ3) and outcomes (RQ4). Preliminary results from multilevel analyses showed that students indeed varied in how they regulated their motivation over time and differently for exam preparation and essay writing. Further outcomes will be presented during ICM.

## P21 - Emotion Regulation of Envy: The Role of Suppression and Cognitive Reappraisal

**Presenting Author:** Alena Prikhidko, Florida International University, United States

**Co-author(s):** Yuxi Qiu, Florida International University, United States

### Abstract

This study investigates the intricate dynamics of envy, focusing on its impact on mental health among college students. We surveyed 723 students, assessing levels of malicious and benign envy using established scales. Findings reveal that cognitive reappraisal significantly reduces malicious envy, transforming potential stress into inspiration. Conversely, emotional suppression correlates with increased stress, anxiety, and depression. Notably, the effects of suppression vary by religious affiliation, with more substantial effects observed among religious individuals. This research underscores the need for further exploration of emotion regulation strategies to understand better how envy influences psychological well-being and emotional states among young adults to support wellbeing.

## P22 - Emotion Regulation Profiles in Elementary School Children - A Process-Oriented Perspective

**Presenting Author:** Lilian Schnell, University of Muenster, Germany

**Co-author(s):** Stephanie Lichtenfeld, Universität Münster, Germany; Jana-Elisa Rueth, University of Muenster, Germany; Arnold Lohaus, Bielefeld University, Germany

### Abstract

Emotion regulation (ER) plays a crucial role in children's development and is closely linked to well-being. ER strategies are commonly categorized as functional (e.g., reappraisal) or dysfunctional (e.g., suppression). From a theoretical perspective, ER strategies can also be categorized according to their temporal position within the emotion-generating process, which is reflected in five families of ER strategies: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. Building on this perspective, ER strategies may be employed sequentially, leading some researchers to adopt person-centered approaches that examine patterns of multiple strategies rather than isolated effects. However, research on ER profiles in childhood, particularly from a process-oriented perspective, remains scarce. The present study aims to (1) identify distinct ER profiles among elementary school children, (2) examine associations between age and gender and ER profiles, and (3) investigate differences in well-being with respect to profile membership. A sample of 362 German children aged 7 to 11 years completed the Process-Oriented Emotion Regulation Measure for Children and Adolescents (POEM-CA), assessing functional and dysfunctional strategies across the five families of ER strategies. Latent profile analysis identified five distinct ER profiles, including a predominantly functional, a predominantly dysfunctional, and three mixed profiles. These findings suggest that meaningful differences in children's use of different ER strategies are already evident in childhood. Further analyses will explore age- and gender-related associations with profile membership as well as differences in well-being across ER profiles, providing early insights into ER as a potential risk or protective factor in child development.

## P23 - From Mindfulness to Flourishing: The Mediating Role of Basic Psychological Needs

**Presenting Author:** Isabel Rasteiro, Faculdade Psicologia e de Ciências da Educação, Universidade do Porto, Portugal

**Co-author(s):** Sofia Magalhães, Higher School of Education, Polytechnic of Porto, Porto, Portugal, Portugal; Raquel Barbosa, Faculty of Psychology and Educational Sciences, University of Porto, Porto, Portugal, Portugal

### Abstract

Youth mental health problems have risen increasingly worldwide, reflecting the emotional challenges faced by a generation growing up in times of uncertainty. Under these circumstances, it is crucial to identify factors that protect young people from distress and lead them to flourish (i.e., to achieve a state of integrated emotional, psychological, and social well-being). Mindfulness and basic psychological needs (BPN; autonomy, competence, and relatedness) are promising candidates, as they represent effective motivational regulatory processes supporting mental health. Although preliminary evidence showed cross-sectional associations among these constructs, no study integrated them within a single model nor tested the role of BPN. Addressing this gap, the present longitudinal study tested whether BPN satisfaction and frustration mediated the links between mindfulness and flourishing in 399 Portuguese students ( $M = 12.78$ ,  $SD = 2.37$ ) across three waves of self-report questionnaires. Path analyses supported a partial mediation model ( $CFI = 1.00$ ;  $RMSEA = .05$ ;  $SRMR = .01$ ) and revealed three main results: (a) mindfulness was positively, directly associated with emotional, psychological, and social well-being ( $.11 < \beta < .17$ ,  $ps < .03$ ); (b) the link between mindfulness and emotional well-being was partially mediated by increased satisfaction and decreased frustration of BPN ( $\beta = .17 / -.13$ ,  $ps < .01$ ); (c) the links to psychological and social well-being were mediated exclusively by BPN satisfaction ( $\beta = .21 / .20$ ,  $ps < .001$ ). These findings extend current knowledge on the motivational pathways to youth flourishing and bring insights into ways of promoting resilience and thriving, even in the face of adversity.

## P24 - "The Science of Being Happy": Affective Dynamics in Maria Inácia Braamcamp's Letters

**Presenting Author:** Pedro Urbano, IHC - NOVA FCSH / IN2PAST, Portugal

### Abstract

Drawing on the theoretical framework of the history of emotions, this paper examines the affective dynamics and motivational strategies within the private correspondence of Maria Inácia Braamcamp (1788-1829) to her husband, Anselmo José (1792-1846), during his political exile in France (1823-1824). Amidst the political and profound personal uncertainty of the post-Vilafrancada period, Maria Inácia's letters function as a sophisticated agenda for her husband's emotional regulation, namely on her proactive efforts to counter his "fatal melancholy" and "desponding humour," which she perceives as detrimental to his health and character. Through a qualitative analysis of the source material, this paper highlights Maria Inácia's promotion of therapeutic strategy, a "true philosophy" that prioritises the present over an unpredictable future, moving beyond a simplistic narrative of spousal comfort, giving a systematic programme for emotional resilience. Central to her motivational discourse is the assertion that happiness is a "science" that must be studied and practised through mental occupation, social engagement, and the avoidance of isolation. Her letters reveal a unique 19th century perspective on emotional agency, where she motivates her husband to recalibrate his "lugubrious habits" into a state of "tranquillity". By bridging domestic administration with emotional coaching, Maria Inácia provides an insightful case study into how individuals navigate emotional landscapes during times of crisis. This research contributes to our understanding of interpersonal motivation and the historical management of depressive states through cognitive and social intervention.

## Poster Session 5. Agency, Homework, Engagement, and Emotional Processes in Learning Contexts

### P25 - Dynamics of interpersonal emotion regulation between teachers and students in the classroom

**Presenting Author:** Linda van Zutphen, Open Universiteit, Netherlands

### Abstract

The mental well-being of secondary school students is declining, raising concerns due to its negative implications for school performance, students' future prospects and society as a whole. An important mechanism underlying mental well-being is interpersonal emotion regulation. Within the school context, teachers can play a crucial role in supporting emotion regulation, therefore making teacher-student interaction relevant to stimulate emotion regulation. However, research has focused on a) improving students' ability to regulate their own emotions and b) outside real-life classrooms. Little is known about which interpersonal emotion regulation strategies are used from an interpersonal perspective for improving student mental well-being in everyday life. The current study aims to investigate teacher-student interaction of interpersonal emotion regulation in-the-moment, and how this relates to student mental well-being. Data will be collected using daily ecological momentary assessment of 50 dyads consisting of teachers with their respective class, across all educational levels and grades in Dutch secondary schools. During two regular school weeks, the teacher and students complete short questionnaires during their class via a smartphone application. Students report whether they have requested emotion regulation from the teacher and whether they have perceived emotion regulation, while teachers indicate how they engaged in emotion regulation. Additionally, momentary mental well-being is assessed by both teachers and their students. Data will be analyzed with multilevel regression analyses. Preliminary findings will be presented at the conference. By grounding this research in real-time classrooms this will uncover better support into fostering student mental well-being and learning.

## P26 - Homework Dynamics in Primary Schools: Comparing Student, Teacher, and Parental Perspectives

**Presenting Author:** Lotte van Kesteren, Utrecht University, Netherlands

**Co-author(s):** Barbara Flunger, Utrecht University, Netherlands; Vincent Hoogerheide, Utrecht University, Netherlands; Tamara Van Gog, Utrecht University, Netherlands

### Abstract

Homework is an important part of students' academic lives, yet time spent on homework is often not correlated with learning or achievement. Reasons for this limited effectiveness might be that students find homework uninteresting and engage in ineffective study behaviors. Moreover, teachers and parents may inadvertently shape students' (in)effective behaviors through their involvement. Given that parents' involvement is highest in primary school, it is necessary to understand homework dynamics in this setting. While earlier research focused mostly on student self-reports, this study aims to provide a more comprehensive understanding of the primary school homework practice, exploring the alignment of students' perceptions of homework involvement with their parents' and teachers' perceptions. Moreover, it was investigated how parental and teachers' homework involvement is associated with students' homework effort and motivation. A total of 38 classes with 38 teachers, 428 students, and 408 parents were surveyed. To enable a comparison of perspectives, teachers and their students completed measures on teacher homework involvement (homework quality, homework control, homework discussion, and autonomy support), parents and their children completed measures on parental homework involvement (requested help, unwanted help, control, autonomy support). Concerning students' homework motivation and engagement, homework effort, and homework motivation (expectancy and value) were assessed. Exploring discrepancies or shared values will provide a complete understanding of homework practice and highlight potential areas for improvement (e.g., when teacher intentions do not translate to students). Together, these findings can inform both future and practical implications about teachers' and parents' homework involvement.

## P27 - Do Students Consider Situational Interest Vital to Their Success? A Meta-Motivational Analysis

**Presenting Author:** Corwin Senko, SUNY New Paltz, United States

### Abstract

This project bridges two current streams of motivation research. One stream shows that interest boosts effort and performance more for students lower in conscientiousness. The other stream shows that students generally have accurate "meta-motivational" knowledge of when and why different motivation constructs impact learning. Three online studies of university students tested if low (vs. high) conscientious students know how interest affects their effort outlay and academic success. Study 1 used a new self-report measure tapping meta-motivational knowledge of interest's importance to one's own effort and success. Low conscientious students reported stronger agreement with this view. Study 2 compelled students to identify which teacher qualities (e.g., interestingness, topic expertise, presentational clarity) are necessities for their success, rather than merely desirable qualities. Low conscientious students deemed interestingness more essential than their high conscientious peers. Study 3 generalized the Study 2 findings by having students rate their current instructors on interestingness and other desirable qualities, and then evaluate their overall teaching effectiveness. Instructor interestingness predicted stronger overall effectiveness for all students, but especially for those lower in conscientiousness. Discussion will consider these findings' implications for both interest theory and meta-motivation theory.

## P28 - Teacher Burnout Predicts Student Outcomes: Teacher Enthusiasm as a Key Mediating Mechanism

**Presenting Author:** Yeonsu Shin, Korea National University of Education, Republic of Korea

**Co-author(s):** Juyeon Song, Korea National University of Education, Republic of Korea; Woogul Lee, Korea National University of Education, Republic of Korea

### Abstract

This study examined the differential predictive roles of three dimensions of teacher burnout—emotional exhaustion, depersonalization, and reduced personal accomplishment (RPA)—in relation to student outcomes, as well as the mediating roles of student-perceived teacher enthusiasm and teacher support. Participants included 38 elementary school teachers and 583 students from their classrooms. Teachers reported their levels of burnout, whereas students assessed the mediators (perceived teacher enthusiasm and teacher support) and outcome variables, including classroom climate, behavioral engagement, emotional engagement, and academic value. Student outcome variables were measured at two time points to control for baseline levels. Given the hierarchical structure of the data, Bayesian multilevel path analyses were conducted. Results indicated that depersonalization and RPA were indirectly associated with students' behavioral engagement and academic value through perceived teacher enthusiasm. In addition, RPA negatively predicted classroom climate. Emotional exhaustion was not significantly related to any student outcomes. All significant indirect effects were observed only through perceived teacher enthusiasm, not through perceived teacher support. Although RPA was negatively associated with student-perceived teacher support, which in turn affected classroom climate, indirect effect was not significant. These findings suggest that students may be more likely to perceive teacher burnout as a reduction in teacher enthusiasm rather than as changes in supportive behavior. Such perceptions may predict students' classroom climate perceptions, engagement, and academic value. This study highlights the distinct roles of teacher burnout dimensions and identifies student-perceived teacher enthusiasm as a key mechanism linking teacher burnout to student experiences.

## P29 - Exploring the Design of Instructional Directions

**Presenting Author:** Diana Pak, University of Zurich, Switzerland

**Co-author(s):** Juliette Désiron, University of Fribourg, Switzerland; Sascha Schneider, University of Zurich, Switzerland

### Abstract

Research on instructional guidance has traditionally examined whether and under what conditions external support facilitates learning. Yet, the design of instructional directions—the brief guidelines that learners encounter before engaging with materials—has received little attention, despite being a staple of virtually all learning environments. These initial directions shape learners' first impressions and launch the learning process, potentially influencing engagement and cognitive processing even before exposure to the main instructional content. The current pre-registered study addressed this overlooked area by investigating how the linguistic style and visual presentation of instructional directions in a self-study unit affect learning experiences and outcomes. One hundred and forty-three university students were randomly assigned to one of the four conditions in a 2-emotional design (positive vs. neutral) by 2-language style (casual vs. formal) between-subjects design in a computer laboratory. As the dataset is currently being cleaned, results will be presented at the conference. The findings intend to enrich research on the personalization principle and emotional design to a rarely examined yet consequential component of instruction. They can also offer practical guidance for the design of Massive Open Online Courses, Learning Management Systems, and other digital learning environments, where instructional directions frequently serve as learners' first point of contact.

### P30 - The Manifestation of Agentic Engagement from the Perspective of Primary School Teachers

**Presenting Author:** Ema Petričević, Faculty of Teacher Education, University of Zagreb, Croatia

#### Abstract

Agentic engagement in learning refers to the proactive, intentional, and constructive ways in which students enrich their learning experiences (Reeve, 2013), such as asking questions, expressing preferences, and communicating their interests. Research has shown that agentic engagement is linked to numerous positive outcomes; however, less is known about the nature of agentic engagement itself and its manifestation in the lower grades of primary school. This study aimed to examine the characteristics and manifestations of agentic engagement in lower primary grades from the perspective of primary school teachers, addressing the following questions: (1) What are the characteristics of students' agentic engagement as perceived by teachers? and (2) How does it manifest? A qualitative approach was adopted, involving twenty interviews with primary school teachers, and the data were analysed using reflexive thematic analysis (Braun & Clarke, 2019). The results indicated that teachers recognise the key characteristics described in the literature-grounded in intrinsic motivation, active participation, considered observable and didactically desirable, and the need for additional content-alongside additional features, including comprehension-based learning, engagement in multiple domains, and autonomous development of learning strategies. Teachers reported that agentic engagement occurs mainly during lessons but can also be observed outside the classroom, for instance through independent study and exploration. Additional manifestations-such as introducing content into instruction, knowledge sharing and collaboration, engaged listening, autonomous creativity, and teamwork organisation-may be related to students' age. This study contributes both theoretically and practically by expanding understanding of agentic engagement and informing teaching practices.

### P31 - Anxiety in vocal music performance

**Presenting Author:** Sofia Vinhas, ISPA-Instituto Universitário, Portugal

**Co-author(s):** Francisco Peixoto, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

#### Abstract

Anxiety in vocal music performance is a relevant problem in singing education, commonly neglected in the pedagogical field and that can significantly affect students' academic performance and mental health (Henton, 2023). Moderate levels of this construct can be beneficial in enhancing concentration and focus; however, when at very high levels, it manifests itself through extreme emotional, cognitive and physical tensions that can lead to school dropout (Barros et al., 2024). Nevertheless, academic research on this subject is scarce, and there are even fewer studies exclusively on singing. This project aims to investigate strategies to mitigate vocal music performance anxiety in singing students in specialized education, focusing on the implementation of educational methodologies based on performance psychology, with the goal of promoting a positive impact, student well-being and optimizing performance results.

## Mid-Career Keynote 1



### **Kristina Stockinger**

Assistant Professor / Senior Lecturer,  
**University of Augsburg, Germany**

### ***Self-regulation of motivation and emotions: Bridging research traditions and re-centering students' perspectives***

Motivational (MR) and emotional self-regulation (ER) shape students' learning, academic success, and well-being. To date, MR and ER have been studied in relative isolation from one another, despite the close conceptual and functional relations between motivation and emotion. Recent findings indicate that students' MR and ER, too, are functionally interdependent and can influence one another. In this talk, we will present the recently proposed Interwoven Systems Model of Motivational and Emotional Self-Regulation (ISM) which centers on students' interpretations of their motivational versus emotional regulatory needs as well as their adoption of regulatory goals as pivotal determinants of their subsequent selection, implementation, and monitoring of self-regulatory strategies. I will discuss core propositions about functional interactions between students' MR and ER that can be derived from the ISM and touch upon supporting evidence from recent studies examining university students' motivational and emotional self-regulation. I will also reflect on methodological avenues and challenges for future research on MR and ER in educational settings, as well as broader practical implications for developing combined MR-ER interventions for nurturing students' self-regulatory competencies both effectively and efficiently.

## Mid-Career Keynote 2



**Julia Mori**

Senior Researcher  
**University of Bern, University  
 of Teacher Education in  
 Special Needs, Switzerland**

### ***Promoting student well-being in uncertain times: Lessons from school-based interventions***

In times marked by uncertainty and rapid change, schools serve as one of the most impactful settings for supporting the well-being of young people. A growing evidence base shows that school-based programs can enhance student well-being, yet average effects are typically small and heterogeneous; outcomes hinge on program dose and focus, contextual fit, and implementation fidelity. In this talk, I first provide a concise overview of school-based interventions and outline the factors that most strongly shape their effectiveness. Second, I present our recent Well-Being-Boost Training—embedded in the SNSF-funded longitudinal project Well-being in School in Switzerland (WESIR; 2019–2025)—a 10-week, multicomponent program in which my team and I systematically varied intervention components across three experimental groups and one control. I summarize the main findings—more modest and mixed than expected—and use them to clarify the boundary conditions of school-based interventions in real-world settings. Third, I translate these insights into design principles I consider most promising for cultivating and sustaining well-being in everyday school practice—an imperative in the post-pandemic era and beyond. I close by emphasizing what works, for whom, and under what conditions to support student well-being amid uncertainty.

## Paper Session 10: Teacher Professional Resources and Motivation

### Job demand-resource profiles of Swiss teachers

**Presenting author:** Minh Quy Dang Nguyen, University of Bern, Switzerland

**Co-author(s):** Viola Saerkuluoto, University of Bern, Switzerland; Manuela Haldimann, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

#### Abstract

Teacher wellbeing has emerged as a central concern in educational research, as it is closely linked to teaching quality, teacher retention, and student learning outcomes. Several studies show teachers are at risk of heightened levels of stress and burnout (Hakanen et al., 2006; Skaalvik & Skaalvik, 2020). In order to support the occupational wellbeing of teachers, it is essential to understand the demands they face, the resources they possess and how these are connected. Scholars have drawn attention to how teachers may experience multiple demands and resources simultaneously and investigated whether groups of teachers can be identified based (e.g., Collie et al., 2020, 2021; Granziera et al., 2022). Guided by the Job Demands-Resources theory (JD-R; Bakker & Demerouti, 2017), this study contributes to this emerging literature by adopting a person-centered analysis to identify distinct teacher profiles, investigating challenge demands (time pressure), hindrance demands (unnecessary tasks), job resources (mastery climate) as well as personal demands (failure avoidance) and resources (teaching self-efficacy). Data was collected through an online questionnaire in November-December 2025. Among 1826 Swiss teachers, latent profile analysis revealed 6 profiles, clearly differentiated theoretically meaningful constellations of challenge and hindrance demands, while also capturing variation in personal demand and resources, without producing very small classes. This configuration allowed us to move beyond a unidimensional JD-R view of demands and to demonstrate that qualitatively different demand profiles might be associated with distinct motivational and health-impairment pathways. Future research will aim to investigate the predictors and outcomes associated with these profiles.

### Burnout and Engagement as Turnover Pathways in School Principals

**Presenting author:** Petra Đurić, University of Zadar, Croatia

**Co-author(s):** Iva Miličević, University of Zadar, Croatia; Irena Burić, University of Zadar, Croatia

#### Abstract

Understanding turnover intention among school principals is essential for ensuring sustainable school leadership. Drawing on the Job Demands-Resources (JD-R) model, this study examined whether work engagement and burnout mediate the relationships between job resources, job demands, and turnover intention. Although previous research has linked job characteristics to turnover intention, less is known about the psychological mechanisms (i.e., motivational and health-impairment processes) underlying these associations. This study investigates whether work engagement explains the relationship between job resources and turnover intention, and whether burnout explains the relationship between job demands and turnover intention. A total of 362 school principals participated in a survey study. Job resources (i.e., autonomy, social support, and feedback), job demands (i.e., work pressure, hassles, qualitative job insecurity, and illegitimate tasks), work engagement, burnout, and turnover intention were assessed using validated self-report measures. Results showed that all examined job resources were related to turnover intention both directly and indirectly through work engagement. Additionally, almost all examined job

demands were related to turnover intention both directly and indirectly through burnout. In contrast, work pressure was related to turnover intention only indirectly via burnout. Overall, the findings highlight the central role of work engagement and burnout in explaining the relationship between job characteristics and school principals' turnover intentions, supporting the motivational and health-impairment processes proposed by the JD-R model. Additionally, the findings underscore the importance of optimizing school principals' work environments to retain them in the profession. Key words: job demands-resources model, work engagement, burnout, turnover intention, school principals

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## Role Identity, Motivation, and Burnout: A Comparison of Greek and American Teachers

**Presenting author:** Macey Pizitz, Santa Clara University, United States; Emeline Siberell, Santa Clara University, United States

**Co-author(s):** Tim Urdan, Santa Clara University, United States; Georgia Stavropoulou, Aristotle University of Thessaloniki, Greece; Eleftheria Gonida, Aristotle University of Thessaloniki, Greece

### Abstract

There is a teacher crisis in the U.S., with many teachers experiencing burnout and thinking about, or actively, leaving the profession (Gallup, 2022; Walker, 2022). We hypothesized that this may be due to how teachers define their role identities (Kaplan & Garner, 2017), including their perceived responsibilities as teachers and their ability to set clear boundaries on their work. Teachers' role identities may be influenced by cultural factors (Hong, Cross-Francis & Schutz, 2024), so we compared the role identities of teachers in the U.S. with teachers in Greece. Individual interviews were conducted with 16 American and 25 Greek middle school teachers. Our preliminary results, using a grounded theory analysis approach, reveal that although there are several similarities in perceived responsibilities across the two countries (e.g., teaching the curriculum, maintaining order in the classroom), there are also key differences. Teachers in the U.S. reported feeling more personally responsible for the success of individual students, and were more worried about diverting blame for student failure to outside factors, like social inequality. Greek teachers were better about separating their professional and personal lives, rarely reporting that they were worried or stressed about work while they were at home. Although teachers in both countries said work was stressful and tiring, only teachers in the U.S. reported feeling emotionally exhausted, burnt out, and considering leaving the profession. These results suggest that boosting teacher efficacy and motivation in the U.S. may require reframing their professional role identities.

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## Teachers' commitment and satisfaction: On the importance of self-regulation and self-efficacy

**Presenting author:** Christine Wolfgramm, University of Teacher Education Zurich, Switzerland

**Co-author(s):** Simone Berweger, Zurich University of Teacher Education, Switzerland; Christine Bieri Buschor, Zurich University of Teacher Education, Switzerland; Zippora Bühler, Zurich University of Teacher Education, Switzerland; Andrea Keck Frei, Zürich University of Teacher Education, Switzerland

### Abstract

Professional and personal resources are needed to cope with the numerous challenges of entering the teaching profession. This contribution analyzes the role of self-regulation and self-efficacy expectations, perceived stress due to situations in- and outside the classroom as well as team support for work engagement, satisfaction and occupational commitment of teachers. Based on an intervention study with 273 teachers at the end of induction,

we found a direct and indirect positive effect of self-efficacy beliefs on satisfaction as well as on commitment, whereas for self-regulation, the effects on both satisfaction and commitment were indirect, mediated via engagement. Beyond also social support within the team had a positive effect on engagement. Our results suggest that high demands have a motivating effect and increase commitment. Self-efficacy expectations and self-regulation proved to be important resources for the well-being of teachers, while support within the team acted as a social resource.

## Paper Session 11: Emotional Experiences in Mathematics Learning

### The development of math anxiety from fourth to fifth grade as a function of control-value profiles

**Presenting author:** Anna Tapola, Åbo Akademi University, Finland

**Co-author(s):** Riikka Mononen, University of Oulu, Finland; Pinja Tähti, University of Helsinki, Finland; Hans Lehtikoinen, University of Oulu, Finland; Johan Korhonen, Åbo Akademi University, Finland

#### Abstract

In this study we investigated the development of cognitive and affective math anxiety from fourth to fifth grade in the light of students' control and value beliefs. Control-value theory postulates students' anxiety to depend partly on the level of control and value beliefs, and their mutual configurations. Accordingly, students (N = 317) were classified based on their control (i.e., self-concept; C) and value (i.e., interest; V) beliefs in mathematics in grade 4 by using latent profile analysis. The development of math anxiety over one school year in the observed groups was examined by repeated-measures ANCOVA, with students' mathematics performance as a covariate. Four groups of students with different CV profiles were identified. The results showed that students in the different groups displayed different developmental patterns in terms of affective math anxiety; anxiety increased only in the group with moderate control but high value beliefs. In contrast, a similar group x time interaction effect was not observed in terms of cognitive math anxiety. Girls were found to be over-represented in groups displaying low control beliefs, thus predisposing them to higher math anxiety. The results emphasize the importance of acknowledging individual variation in the development of math anxiety, and the role students' relatively stable motivational beliefs play in it.

### Students' Motivational Profiles in Grade 10: Associations with Emotional Experiences in Math

**Presenting author:** Justina Davolyte, Vilnius University, Lithuania

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#### Abstract

This study investigates Grade 10 students' motivational profiles in mathematics and how these profiles relate to students' emotional experiences, achievement, and gender across the school year. A total of 1,447 Lithuanian Grade 10 students completed surveys at the beginning (T1) and at the end (T2) of the school year, and mathematics achievement data were obtained from school records at both time points. Motivational profiles based on expectancy, value, and cost were identified at the end of Grade 10 (T2) using latent profile analysis, yielding four profiles: Maladaptive (n = 214, 14.8%), Struggling ambitious (n = 486, 33.6%), High-cost (n = 440, 30.4%), and Positively ambitious (n = 307, 21.2%). Multinomial logistic regression analyses examined whether emotional

experiences and achievement measured at both time points, as well as gender, predicted profile membership. Results showed that positive emotions at both time points reduced the likelihood of belonging to the Maladaptive and High-cost profiles compared to the Struggling ambitious profile, whereas negative emotions at T2 increased the probability of membership in these less adaptive profiles. Higher achievement—particularly at T1—was associated with more adaptive motivational profiles, with students reporting stronger positive emotions and higher achievement more likely to belong to the Positively ambitious profile. Gender differences were observed, with males more likely to belong to the Maladaptive and High-cost profiles. These findings highlight the heterogeneity of students' motivational patterns and demonstrate the importance of early emotional experiences and achievement for the development of adaptive motivation in mathematics.

### Investigating boredom trajectories: the risks of being over- or under-challenged in math classrooms

**Presenting author:** Jelena Radišić, University of Oslo, Norway

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#### Abstract

Numerous studies highlight the significance of academic emotions in learning, especially boredom, which has gained attention for its frequent occurrence in school and its adverse impact on motivation and academic performance. This research identifies profiles of fourth- and fifth-year pupils based on their boredom related to mathematics and achievement levels, analysing profile stability and differences across educational systems during the transition from grade four to five. Data from 3,231 pupils in Finland, Norway, Serbia, and Portugal were collected, with assessments in spring 2022 (year 4) and spring 2023 (Year 5). Models with one to seven latent classes were tested for both years, based on standardised scores for homework-related boredom, in-class boredom, and mathematics achievement. Latent Transition Analysis (LTA) evaluated profile stability over time and the impact of educational systems as covariates. The analysis revealed five clusters at grades four and five: Well-off (low boredom, high achievement), Indifferent (low boredom and achievement), Overchallenged (high boredom, low achievement), Mid-Boredom Overchallenged (moderate boredom with low achievement), and Underchallenged (high boredom and achievement). The LTA confirmed overall profile stability from grade four to five. The country variable significantly affected the Well-off profile in both waves. We consider the specific features of educational systems, notably in Portugal and Serbia, as they transition to subject-based teaching in grade five, compared with Finland and Norway, where classroom teaching remains predominant.

### Anxious about what? Maths anxiety in the absence of high stakes exams

**Presenting author:** Richard Remedios, The Nottingham Trent University, United Kingdom

#### Abstract

Evidence consistently shows that in secondary school, the study of Maths is a particular source of student anxiety, and especially so in the run up to high-stakes exams. However, one under-examined area of research is the

developmental shift in maths anxiety when high-stakes exams are minimally relevant. In a convergent mixed-method design, high school students in England, ( $n=134$ , Mage at time point 1, 11 years, 6 months) completed questionnaires examining forms of maths anxiety, value and interest in maths, self-efficacy and academic buoyancy at three time points; the beginning of Y7 (first-year of high school in England), the end of Y7 and early in Y8. At these same time points, twenty-one students took part in a series of focus-groups where they were asked about their general experiences of transition to high school and then more specifically about their attitudes to studying maths. A series of 3 (Time)  $\times$  2 (Gender) mixed multivariate ANOVAS revealed main effects for gender whereby maths anxiety levels were higher for female students. Unexpectedly, there was no main effect or interactions for Time for any of the main measured variables. The focus group data was analysed using reflexive thematic analysis. Convergent analysis of the quantitative and qualitative findings suggested that students' statements relating to their worry about their maths performance were similar to other studies where maths anxiety was assessed in times of high-stakes exams. The findings suggest high maths anxiety is ubiquitous and that the nearness of a high-stakes exam might not predict maths anxiety.

## Paper Session 12: Achievement Goals, Social Comparison, and Self-Concept

### Achievement goal orientation profiles, self-efficacy and error-related beliefs

**Presenting author:** Antti Pulkka, National Defence University, Finland

#### Abstract

This study focused on the associations between motivational profiles, self-efficacy and error-related beliefs. The aim was to examine what kinds of goal orientation profiles could be identified among university students ( $n=184$ ), and how these profiles were associated with error-related beliefs, and whether this association is affected by one's level of general self-efficacy. Four achievement goal orientation profiles were found: mastery-oriented (focus on mastery-orientations; 43.5%), success-performance-oriented (focus on mastery and performance orientations; 12%), indifferent (no clear focus; 32%), and avoidance-oriented (focus on performance-avoidance and work-avoidance; 12.5%). Levels of error-related beliefs (learning from errors, perceived error strain and fear of failure) varied as a function of the motivational profiles: focus on mastery or success and performance was related to higher levels of learning from errors and self-efficacy, but combined success and performance focus also predicted higher error strain and fear of failure. Mastery-oriented reported lowest error strain and avoidance-oriented reported lowest beliefs about learning from errors and self-efficacy. After the inclusion of the self-efficacy as the covariate additional differences were observed in learning from errors and fear of failure between the avoidance-oriented and the indifferent, and between indifferent and the success-performance-oriented. All in all, achievement goal orientations are associated with error related beliefs, predominantly mastery profile appears adaptive, especially when compared to work-avoidant profile, combined mastery-performance-focus has mixed pattern of outcomes, and lastly this association is slightly mediated by the level of one's self-efficacy.

## Context Matters, But for Whom? Social Comparison and the Big-Fish-Little-Pond Effect

**Presenting author:** Fernando NUNEZ-REGUEIRO, Université Grenoble Alpes, France

**Co-author(s):** Pascal Bressoux, Université Grenoble Alpes, France; Pascal Pansu, Université Grenoble Alpes, France

### Abstract

We examine whether the Big-Fish-Little-Pond Effect (BFLPE) operates among low-achieving students and under which psychological conditions it is amplified or attenuated. **THEORY:** The BFLPE is a contextual effect whereby students' academic self-concept (ASC) is negatively associated with the average academic ability of their peers, net of individual achievement. Although extensively replicated across countries and school systems, its functioning in vocational tracks that concentrate low-achieving students remains poorly understood. Drawing on social comparison theory, we argue that the BFLPE should depend on students' individual propensity to compare their academic performance with that of their peers. **AIMS:** We test whether the BFLPE is observed in vocational classes and whether its effect depends on students' social comparison orientation. **METHOD:** Using large-scale data from French vocational education (N = 7400 students in 444 classes), we estimate contextual effects of class-average achievement on mathematics self-concept and examine cross-level interactions with individual differences in social comparison orientation, using latent constructs and adjustments for data clustering. **RESULTS:** The BFLPE on mathematics self-concept is observed but weaker than typically reported in comprehensive or selective educational settings. The negative association between class-average achievement and self-concept is substantially stronger among students with a high tendency to engage in social comparison and attenuated among those low in comparison orientation. **SIGNIFICANCE:** These findings identify social comparison orientation as a key condition of the BFLPE and suggest that reducing the salience of normative comparison may be a promising avenue for mitigating its negative effects on motivation.

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## Finding the right partner – effects of specific upward comparisons on academic self-concept

**Presenting author:** Eric Nising, Universität zu Köln/ University of Cologne, Germany

**Co-author(s):** Julia Gorges, Universität zu Köln/ University of Cologne, Germany

### Abstract

Academic self-concept (ASC) plays a crucial role in students' educational development and is strongly shaped by social comparison processes. While generalized upward comparisons (i.e., the Big-Fish-Little-Pond Effect) have been extensively studied, less is known about the effects of specific upward comparisons with individual peers in school contexts. Drawing on the Selective Accessibility Model and the Interpretation Comparison Model, the present study investigates how performance difference, perceived similarity, and competitive comparison standards influence students' ASC in specific upward comparison situations. Domain-specific ASC, performance, and specific comparative behaviour was assessed from N=1047 German fifth-grade students attending inclusive secondary schools. Analyses focused on subsamples of students engaging in upward comparisons (Reading: n = 444; Maths: n = 442). Multilevel models were estimated separately for each domain to examine main and interaction effects of comparison-related predictors. Results showed that a larger performance difference and a competitive comparison standard were associated with lower ASC, particularly in Reading. In contrast, perceived similarity to the comparison target emerged as a consistent positive predictor of ASC in both domains. The findings suggest that specific upward comparisons do not necessarily undermine academic self-concept, provided they emphasize

attainability as well as similarity rather than competition. These results have important implications for educational practice and highlight the need for further longitudinal research.

## Dimensional Comparisons in the Classroom: How Teachers Might Reinforce Domain Specialization

**Presenting author:** Daria Katharina Benden, University of Bonn, Germany

**Co-author(s):** Fani Lauermann, University of Bonn, Germany; Allan Wigfield, University of Maryland, United States; Jacquelynne Eccles, University of California – Irvine, United States

### Abstract

Dimensional comparisons—students’ within-person comparisons of their abilities and interests across dissimilar domains (e.g., math vs. reading)—help them identify their relative strengths and weaknesses across subjects that eventually guide their educational choices and specializations. However, the extent to which different teachers may reinforce such within-student differentiation remains understudied. Utilizing situated expectancy-value theory and dimensional comparison theory, this study analyzed data from 56 elementary school teachers and 474 students taught by the same teacher in both math and reading. Multilevel path analyses tested (a) whether students’ preexisting math-reading differentiation (within-student differences in prior math vs. reading achievement, ability self-concepts, and interests) predicted teachers’ differentiated perceptions of teaching effectiveness (feeling more effective teaching a given student in the student’s stronger subject), and (b) whether these effectiveness perceptions predicted students’ ratings of interest-supportive instruction across subjects, as well as increases in students’ math-reading differentiation over the school year. Teachers reported feeling more effective teaching each student in the subject in which the student had a relative strength (based on prior achievement). Teachers’ effectiveness perceptions, in turn, predicted students’ perceived interest-supportive instruction: When teachers felt more effective in teaching a student in one subject than the other, students perceived the instruction as more interest-supportive in that subject. Perceived interest support then predicted increased within-student differentiation in ability self-concepts and interests over the school year. Indirect effects were significant for motivational outcomes but not for achievement, which was directly predicted by teachers’ perceived effectiveness but was unrelated to student-perceived interest-supportive instruction.

## Paper Session 13: Well-Being, Distress, and Mental Health in Education

### Relatedness and Mental Health in Young Adulthood: Need-Based Pathways via Personality

#### Functioning

**Presenting author:** Isabel Rasteiro, Faculdade Psicologia e de Ciências da Educação, Universidade do Porto, Portugal

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### Abstract

Young adulthood is marked by multiple personal and interpersonal demands that challenge psychosocial adaptation and overall wellbeing. Understanding the affective and motivational dynamics supporting mental health

at this developmental stage is therefore essential. Many theories highlight relatedness as the primary human motivation and one of the basic psychological needs underlying positive development and wellness. Although the association between relatedness and mental health has received empirical support, most evidence comes from studies focused on anxiety and depression within convenience samples of undergraduates, overlooking other relevant factors and population groups. The present study examined links from relatedness satisfaction to both positive and negative mental health indicators (i.e., well-being and psychological symptoms), directly and indirectly via personality functioning. A Portuguese representative sample of 1537 young adults aged 18-35 years ( $M = 27.37$ ,  $SD = 5.17$ ) was recruited and a partial mediation model was tested ( $CFI = .90$ ,  $RMSEA = .04$ ,  $SRMR = .06$ ). After controlling for demographic and clinical covariates (e.g., gender, education, and past mental issues), relatedness satisfaction was positively associated with emotional, psychological, and social well-being ( $.20 < bs < .32$ ,  $ps < .001$ ), yet negatively with anxiety, depressive, somatic, attention, and thought-related symptoms ( $.26 < bs < .42$ ,  $ps < .001$ ). Personality functioning mediated these associations, partially for well-being and fully for most symptoms. By revealing distinct need-based pathways to positive and negative outcomes, this study provides novel insights into the affective-motivational mechanisms shaping young adults' mental health, with critical implications for both prevention and intervention efforts.

## S-WELL-B: A Model of Student Well-Being Across Having, Loving, Doing, and Being

**Presenting author:** Frances Hoferichter, University of Greifswald, Germany

### Abstract

**Background** Student well-being has emerged as a critical focus in educational research, reflecting the growing recognition of its role in shaping academic outcomes and lifelong development. However, research has been mainly atheoretical, lacking a consistent conceptual framework. Establishing a clear, universal theoretical foundation is essential for advancing the field, compare findings and develop targeted interventions to address the unique needs of school students. **Aims** This work proposes a Comprehensive Model of Student Well-Being Dimensions (S-WELL-B, Figure 1) that synthesizes theoretical and empirical insights to provide a multidimensional understanding of student well-being across school and life contexts. **Theoretical Framework** The model incorporates, for example, the theory of human well-being, the school well-being framework, and both hedonic and eudaimonic dimensions. These perspectives are integrated using four central dimensions of student well-being: Having, Loving, Doing, and Being. **Key Propositions** Hence, the S-WELL-B conceptualizes student well-being by integrating overall and school-related well-being and comprises four interrelated domains. Having represents the need for safety, access to resources, and educational and emotional support. Loving captures the significance of social connectedness, emphasizing relationships with peers, teachers, and family in inclusive environments. Doing refers to students' sense of competence, engagement, and agency. Being addresses inner balance, encompassing self-worth, psychological health, and personal development. **Conclusion** The S-WELL-B offers a holistic, integrative lens to conceptualize and assess student well-being. It underscores the importance of fostering safe, connected, empowered, and balanced environments for students and supports stakeholders in developing targeted interventions to enhance student well-being at multiple levels.

## Motivation and Well-Being as Key Personal Strengths in Study Resources and Overcoming Demands

**Presenting author:** Satu Laitinen, University of Turku: Department of Teacher Education, Finland

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### Abstract

Motivation and Well-Being as Key Personal Strengths in Study Resources and Overcoming Demands Abstract Universities face a significant challenge as they support student motivation and well-being while also striving to improve academic achievement. This study aimed to examine the relationship between study demands and resources supporting motivation and well-being and their combined impact on students' academic achievements. A total of 2,251 undergraduate students completed questionnaires measuring their motivational orientations and well-being factors. At the end of the academic year, the researchers accessed the students' records and documented their academic achievements. The results revealed clear and positive associations between academic achievement and resource levels, with negative associations relating to study demands. When year of study and faculty were included in the analysis, further differences emerged. These findings highlight the critical role of supportive resources in promoting academic success and suggest that managing study demands is essential for optimizing student outcomes. **Keywords:** motivational resources, motivational demands, well-being, higher education, academic achievement

## Affective Profiles of Multidimensional Well-being in Portuguese First-year University Students

**Presenting author:** Regina Alves, Research Centre on Child Studies (CIEC), Institute of Education, University of Minho, Portugal

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### Abstract

The first year of university typically involves heightened uncertainty and emotional variability. However, students differ in how affective experiences intersect with broader psychological functioning. This study identified affective profiles of multidimensional well-being among Portuguese first-year university students ( $n = 1127$ ). Participants completed the Positive and Negative Affect Schedule (PANAS), the Satisfaction with Life Scale (SWLS), and a multidimensional measure of Psychological Well-Being (PWB). Latent profile analysis was used to determine the optimal profile solution. The selected five-profile model showed strong classification quality (high average posterior probabilities) and yielded theoretically coherent profiles: (1) high negative affect with very low purpose in life (13.39%), (2) typical (51.70%), (3) relational-growth (2.37%), (4) positive affect with low self-acceptance (24.92%), and (5) relational fragility (7.62%). These results suggest that affective functioning and eudaimonic resources are not uniformly aligned across students, underscoring substantial heterogeneity in well-being configurations during the transition to higher education. Profile-based insights may inform stratified prevention and support strategies tailored to distinct constellations of risk and resilience among first-year students.

## Paper Session 14: Coping, Resilience, and Academic Stress

### University students' coping: Links to resilience, well-being, perceived demands, and COVID anxiety

**Presenting author:** Rong Xia, University of Eastern Finland, Finland

**Co-author(s):** Heta Tuominen, University of Eastern Finland, Finland; Riikka Hirvonen, University of Eastern Finland, Finland; Anna Rawlings, Åbo Akademi University, Finland; Henriikka Juntunen, University of Eastern Finland, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Markku Niemivirta, University of Eastern Finland, Finland

#### Abstract

This study aimed to identify distinct coping profiles among university students in an unprecedented situation: emergency remote teaching during the COVID-19 pandemic, and to examine how these profiles relate to resilience, academic well-being, perceived demands, and COVID anxiety. Data were collected from a sample of Finnish university students (N = 791). Latent profile analysis supported a four-profile solution: Emotion-focused, low acceptance (8.6%), Support-seeking (21.2%), Self-reliant, acceptant (18.2%), and Active coping (52.0%). Notably, the Self-reliant, acceptant profile was characterised by the lowest overall use of coping strategies, particularly low levels of support. However, these students reported the highest levels of resilience and engagement, and the lowest levels of exhaustion, perceived demands, and COVID anxiety. This suggested an effective, internally anchored coping style. In contrast, students in the Support-seeking profile reported frequent use of support coping strategies. Still, they experienced elevated levels of exhaustion, perceived demands and COVID anxiety, indicating that external efforts may not equate to better psychological outcomes during an unprecedented period. As access to external resources and support was limited, some students had to rely more heavily on internal resources. The results underscore the potential effectiveness of targeted, internally grounded coping when external support is unavailable, but also emphasise the protective role of resilience and well-being, which tend to co-occur within more functional coping profiles in the academic context.

### Achievement emotions and health of first-generation students: Evidence from a longitudinal study

**Presenting author:** Sophie von der Mülbe, University of Mannheim, Germany

**Co-author(s):** Kristina Stockinger, University of Augsburg, Germany

#### Abstract

Widening participation and retention of traditionally underrepresented groups such as first-generation college students (FGCS) in higher education (HE) is an ongoing societal issue. While most European countries have adopted policies to foster equity in HE, research suggests that FGCS face challenges regarding their study experiences, academic success and well-being. However, emotional experiences and well-being of FGCS have received less attention, with studies on discrete achievement emotions and their relations with students' health being especially rare. Research on mental health of FGCS revealed mixed results on whether FGCS actually experience lower levels of well-being. Gaining deeper understanding of achievement emotions and health of FGCS can help address the diverse needs of different student groups to foster student well-being and equity in the access to and success in HE. Thus, we conducted a two-wave longitudinal study with university students (N=198) to explore differences in level and development of achievement emotions and reported health problems as well as their interrelations in

FGCS compared to non-FGCS. Results show that FGCS reported significantly lower levels of anger, helplessness, and health problems at T1 compared to non-FGCS. Additionally, anxiety, anger, and disappointment were associated with higher levels of subsequent health problems in non-FGCS but not FGCS, while health problems did not predict subsequent emotions (except for relief in FGCS). Overall, our results indicate that FGCS may not always emotionally struggle more than non-FGCS. Our study stresses the importance of conceptualizing FGCS not only in a deficit-oriented manner but also in terms of their resources and competencies.

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## Comparing school-related stress of students with and without learning and/or behavioural problems

**Presenting author:** Saskia Becker, Leibniz Universität Hannover, Germany

**Co-author(s):** Moritz Börner-Ringleb, Leibniz University Hannover, Germany

### Abstract

In mainstream classrooms, students are frequently confronted with achievement expectations. Some students might struggle in meeting these expectations for different reasons. A mismatch between expectations and expected outcomes might be appraised as school-related stress. The appraisal of stressors varies between individuals and groups. Students with low academic achievement and behavioural difficulties in schools are possibly at risk of experiencing increased levels of stress. Nevertheless, only few and inconsistent study results are available on differences between the experiences of stress of these subgroups of students. As inclusive education aims to support students' mental health, it is important to examine the school-related stress perception of students with (comorbid) learning and behavioural difficulties. Therefore, longitudinal self-reports of  $N = 288$  students were analysed using linear mixed effects models. The results highlight an increase in the stress levels over the course of one academic year as well as differences between subgroups with and without difficulties. The developmental pattern solely differs for students with behavioural difficulties.

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## Coping With Academic Stress: Perceived Control and Peer Resources in Adolescence

**Presenting author:** Mari Vaage Wang, University of Oslo, Norway

**Co-author(s):** Christian Brandmo, University of Oslo, Norway; Gunnar Bjørnebekk, University of Oslo, Faculty of Education, Norway; Rolf Vegar Olsen, University of Oslo, Faculty of Education, Norway

### Abstract

Academic achievement in adolescence depends on how students manage stress. This study examines coping strategies as predictors of performance, with perceived control as an antecedent and peer support/social competence as contextual factors. Using cross-sectional data from EVA2020 ( $n = 4,518$ ; GPA subsample  $\approx 1,800$ ), we assessed coping (task-focused, help-seeking, emotional/avoidance), perceived control, and social resources. GPA served as the outcome in preliminary analyses. Structural equation modeling showed that task-focused coping predicted higher GPA ( $\beta = .34, p < .001$ ), while emotional coping predicted lower GPA ( $\beta = -.24, p < .001$ ). Help-seeking was nonsignificant. Perceived control strongly influenced coping choices but had a small negative direct effect on GPA. Peer support and social competence related to coping but not directly to achievement. Findings highlight coping as a central mechanism in academic performance, suggesting that resources matter most when they foster adaptive coping.

## Paper Session 15: Mathematics Motivation, Identity, and Basic Needs Support

### Engagement as a Bridge Between Motivation and Achievement in Mathematics

**Presenting author:** Janja Sušić, Faculty of Teacher Education, University of Zagreb, Croatia

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#### Abstract

Student engagement in mathematics is a broadly studied area due to its significance for students' educational outcomes and career paths in the STEM field. However, less is known about how distinct dimensions of engagement - emotional, behavioral, cognitive and especially agentic - are linked to motivation. One of the leading frameworks connecting motivation and engagement is Eccles et al.'s (2020) Situated Expectancy-Value Theory (SEVT). While SEVT has been widely applied, a clear understanding of how students' engagement relates to their competence-related beliefs and task values remains underresearched, especially at the primary school level. Therefore, building on the model for placing engagement in SEVT proposed by Gladstone et al. (2022), the present study aims to describe the relationship between students' mathematics task values (utility, attainment, and interest) and self-efficacy beliefs, four types of engagement, and their achievement. A total of 384 fifth-grade primary school students participated in this study. Structural equation modelling was used to examine how self-efficacy and task values predict four types of engagement. Results of a multivariate model suggest that behavioral engagement was predicted by self-efficacy and interest, cognitive by interest and attainment, emotional by self-efficacy, interest and attainment, and agentic by interest. Additionally, two significant indirect effects of SEVT variables on math grade were found - from self-efficacy through emotional engagement, and from interest through emotional engagement. The findings emphasize the role of engagement as a potential mediator between motivation and achievement and highlight the limited role of utility value for younger students' engagement and achievement.

### Role of Social Support and Mindset in Middle School Students' Mathematics Identity

**Presenting author:** Aslihan Akyildiz, Dokuz Eylul University, Türkiye

**Co-author(s):** Utku Caybas, Michigan State University, United States; William Van Luven, Michigan State University, United States; Lisa Linnenbrink-Garcia, Michigan State University, United States

#### Abstract

Drawing on social psychological perspectives on identity, this study examined how perceived social support from teachers and peers related to middle school students' mathematics identity through students' mindsets. Using longitudinal data, we investigated whether growth and fixed mindsets mediated the associations between social support and math identity and whether these pathways varied by gender. Participants were 996 middle school students in Turkey who completed self-report measures across three time points during one academic semester. As specified in our model, perceived teacher affective support and peer support at timepoint 1 predicted growth and fixed mindset at timepoint 2, and all constructs predicted math identity at timepoint 3. Multigroup structural equation modeling results showed that teacher affective support was the most robust predictor of mathematics identity for both girls and boys, with both direct effects and indirect effects through growth mindset. Growth mindset positively predicted mathematics identity for both genders, whereas fixed mindset was unrelated to math identity.

The only gender differences observed were for differential predictors of fixed mindset: peer social support and teacher social support were negatively associated with fixed mindset for girls and boys, respectively. These findings highlight the central role of teachers' affective relationships with students in students' mathematics identity and the importance of growth mindset for supporting this relation.

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## Problem posing and self-efficacy in math: Do basic need experiences mediate intervention effects?

**Presenting author:** Janina Krawitz, University of Cologne, Germany

**Co-author(s):** Katrin Rakoczy, University of Gießen, Germany; Lars Meyer-Jenßen, HMU Health and Medical University Erfurt, Germany

### Abstract

According to Self-Determination Theory (SDT), experiencing autonomy, competence, and relatedness supports self-determined motivation and motivational beliefs such as self-efficacy. Problem posing in mathematics may support these needs by offering meaningful choice, enabling ownership, and fostering peer interaction. In an experimental study with  $N = 194$  tenth-grade students, we compared a four-lesson intervention in which students either posed and solved their own mathematical problems or solved given problems. After each lesson, students reported their experiences of autonomy, competence, and relatedness. Self-efficacy in mathematics was assessed before and after the intervention. Results showed no total effect of posing and solving own problems on self-efficacy in mathematics. However, posing and solving own problems increased students' experiences of autonomy and relatedness (but not competence). Experiences of autonomy, competence, and relatedness were positively associated with self-efficacy, and autonomy and relatedness mediated the effect of problem posing on self-efficacy. Prior self-efficacy did not moderate intervention effects on basic needs. The findings refine motivational accounts of problem posing by highlighting autonomy-supportive mechanisms that can indirectly foster self-efficacy.

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## A serious game-based intervention to promote maths motivation: Effects and individual differences

**Presenting author:** Tanja Held, Liverpool John Moores University, United Kingdom

**Co-author(s):** David Putwain, Liverpool John Moores University, United Kingdom; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

### Abstract

Motivation is a key factor for successful learning and academic achievement. According to the Situated Expectancy-Value Theory, motivation is driven by students' expectancy of success and the perceived values of tasks. However, both expectancy and task values tend to decline over time, particularly in mathematics. This study evaluates the effectiveness of an online serious game designed to improve motivation in mathematics by targeting these motivational components. The intervention was tested with 580 Year 7 students in mathematics, using pre- and post-surveys to measure changes in attainment, intrinsic, utility value, cost, and fixed mindset. Results showed significant increases in intrinsic and utility values and a decrease in fixed mindset in the intervention group. The effectiveness of the intervention varied depending on individual differences, such as prior task values and mindset,

and online gaming experience. Students with lower initial task values and higher fixed mindsets and costs benefited more. The results of this study indicate that serious games can effectively enhance motivation in mathematics. However, it is essential to consider individual characteristics in order to optimise the impact of the intervention.

## Paper Session 16: Motivational, Emotional, and Self-Regulatory Factors in Teacher Education

### The Relation between Pre-Service Teachers' Math Anxiety and Math Teaching Anxiety

**Presenting author:** Riikka Mononen, University of Oulu, Finland

**Co-author(s):** Hans Lehikoinen, University of Oulu, Finland; Sirpa Sneck, University of Oulu, Finland; Pinja Tähti, University of Helsinki, Finland

#### Abstract

This study investigated pre-service teachers' math anxiety and math teaching anxiety (MTA). Pre-service teachers ( $n=113$ , females 90.3%) answered the Mathematics Anxiety Scale for Teachers (MAST), measuring their math anxiety (affective, cognitive, and social/evaluative dimensions) and MTA. Only those participants who had some prior math teaching experience ( $n=81$ ) completed the MTA part of the survey. A confirmatory factor analysis confirmed a four-factor structure for the MAST. Using a regression analysis, general math anxiety explained 67.8% of the variance in MTA, however, only the cognitive dimension of math anxiety was statistically significantly associated with MTA ( $\beta=0.838$ ). Our results underline how pre-service teachers' math anxiety should be considered in their teacher training and appropriate interventions provided, as math anxiety may have negative consequences for their teaching of math and ultimately affect their students' learning.

### Unseen Foundations: The Role of User Experience in Fostering Resilience in Pre-Service Teachers

**Presenting author:** Anna Pavlova, University of Bern, Switzerland

**Co-author(s):** Melanie G. Nuoffer, University of Bern, Institute of Educational Science, Switzerland; Irene Guidon, PHBern / University of Bern, Switzerland; Julia Mori, University of Bern, Switzerland; Natalia Molina Otero, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

#### Abstract

Early-career teachers face substantial professional and emotional demands, and international reports indicate that about 30% of novice teachers leave the profession within the first five years (OECD, 2022). Teacher resilience has therefore become a critical competence for sustaining wellbeing and preventing early attrition. Research shows that resilience is not a fixed personality trait but a developable skill that can be strengthened through targeted instructional and reflective interventions (Batz & Wirzberger, 2025; Mansfield et al., 2016). To address this need in initial teacher education, we collaboratively developed the online learning platform [name] that was strongly inspired by the program [name; Authors]. Designed to foster resilience and adaptive coping strategies among pre-service teachers in their 3rd–4th bachelor semesters, the platform has shown promising early results (Authors, in press). However, feedback from  $n=90$  pre-service teachers in 2024 indicated several usability limitations regarding technological navigation and content structure. In response, the platform was revised in summer 2025 to improve user-friendliness, feedback formats, and learning design. Guided by the Unified Theory of Acceptance and

Use of Technology (UTAUT, Venkatesh & Zhang, 2010), Self-Regulated Learning (SRL) theory (Zimmerman, 2000), and the Aligning Wellbeing and Resilience in Education (AWaRE) model (Hascher et al., 2021), this study examines how perceived usability, learning motivation, and engagement support resilience development. Using mixed methods data from two consecutive cohorts (N = 480 pre-service teachers), preliminary findings suggest that improved usability may increase user satisfaction, enhance learning motivation, strengthen resilience, and reduce intervention dropouts.

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## Profiles on Student Teachers' Digital Competence Beliefs and Its Relation to ICT Emotions

**Presenting author:** Charlott Rubach, University Rostock, Germany

**Co-author(s):** Anne-Kathrin Hirsch, University of Rostock, Germany

### Abstract

Competence beliefs (CB) and emotions guide how we behave in learning but also in our professional situations, such as our jobs. For example, teachers with higher CB and more positive emotions are more likely to deal with challenges but also are aware of trying new innovations like using ICT (Information and Communications Technology) in their class. However, little is known about how these beliefs co-exist. Focusing on teacher education as the time where professional beliefs develop, the present study identifies distinct profiles among student teachers by examining how basic and professional digital CB co-exist and explores the levels of emotions experienced while learning to use ICT across profiles. Data stem from 563 student teachers at a public university in Germany. We identified five distinct profiles with low, moderate and high levels across scales and two mixed profiles. Regarding emotions, student teachers in lower CB profiles also experienced high negative emotion and moderate positive emotions while learning to use ICT. Teacher students in the moderate and higher profile however, did not differ in their low level of negative emotions and high levels of positive emotions. Results, limitations and implications will be discussed at the conference.

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## Teacher Candidates' Feedback Literacy: Motivational, Cognitive, and Self-Regulatory Factors

**Presenting author:** Büşra Zeynep Arslan, Gazi University, Türkiye; Yesim Capa Aydin, Middle East Technical University, Türkiye

### Abstract

Teacher feedback literacy is a core professional competence that helps teacher candidates improve their learning as students and transform their teaching as prospective teachers. Nevertheless, little is known about how teacher candidates' feedback literacy interacts with influencing factors. This study examined relationships among teacher candidates' teacher feedback literacy, motivation to teach, self-regulated learning (SRL) teacher beliefs, need for cognition, and student feedback literacy using structural equation modeling (SEM). The data included 699 teacher candidates across four universities in Türkiye. SEM results showed that both student feedback literacy and intrinsic motivation to teach had significant positive direct effects on teacher feedback literacy. In contrast, extrinsic motivation to teach had a significant negative direct effect. SRL teacher beliefs and need for cognition had significant indirect effects through intrinsic motivation to teach and student feedback literacy, respectively. The final model demonstrated acceptable fit ( $\chi^2/df = 2.72$ ,  $p = .00$ , CFI = .92, TLI = .91, RMSEA = .05, SRMR = .08) and explained 60% of the variance in teacher candidates' teacher feedback literacy. These findings highlight the central role of intrinsic motivation to teach and student feedback literacy in fostering feedback literacy. They also indicate

that extrinsic motivation to teach might undermine teacher candidates' feedback literacy. The study has implications for initial teacher education programs aiming to develop teacher candidates' feedback literacy by cultivating intrinsic motivation to teach and self-regulatory feedback practices.

## Paper Session 17: Socio-Emotional School Climate and Safety

### Socio-Emotional School Experiences Adaptation (SESEA) Model — A new theoretical framework

**Presenting author:** Diana Raufelder, University Greifswald, Germany

**Co-author(s):** Juliane Schlesier, University of Wuppertal, Germany

#### Abstract

**Background:** Social and emotional experiences play a central role in the daily lives of both students and teachers, profoundly shaping the experience of learning. Although emotions and social relationships are deeply interwoven – each shaping and reinforcing the other – emotional experiences and social dynamics are still largely considered in isolation and with limited attention to contextual, interpersonal, and individual factors that influence them. **Aims:** Accordingly, this paper introduces the Socio-Emotional School Experiences Adaptation (SESEA) model, a novel theoretical framework that conceptualises socio-emotional experiences in educational settings as dynamic, context-sensitive, adaptive responses to a range of interacting influences. **Theoretical Framework:** Drawing on theories from psychology, pedagogics, social sciences, medicine such as control-value theory, self-determination theory and the social-emotional adaptation model, the SESEA model identifies four domains (affective relationship, instrumental-formal relationship, behavioural, and competence) through which emotional experiences are structured. These domains are shaped by individual characteristics, emotional needs, appraisals, and broader institutional and cultural conditions. **Key Propositions:** Unlike existing frameworks, SESEA integrates student and teacher perspectives, allowing for a systemic understanding of classroom dynamics. The model supports theory-driven research and the development of innovative empirical tools, including observational instruments and multi-method designs. It offers a foundation for examining how socio-emotional experiences and adaptation unfold over time, across actors and in diverse school contexts.

### Emotion beliefs and adolescent mental health: A co-designed school-based intervention

**Presenting author:** Matthew P. Somerville, UCL Institute of Education, United Kingdom

**Co-author(s):** Susie Peter, University College London, United Kingdom; Harriet Kabo, UCL Institute of Education, United Kingdom; Anna Haworth, UCL Institute of Education, United Kingdom; Anna Robertson, UCL Institute of Education, United Kingdom; Bonamy Oliver, UCL Institute of Education, United Kingdom

#### Abstract

Emotion regulation strategy use in young people is commonly considered, but there is less attention on whether, when, and why individuals engage in emotion regulation in the first place. Evidence suggests that young people's beliefs about the extent to which emotions can be controlled influence both the degree and the ways in which they attempt to regulate their emotions. This co-produced study aimed to implement and evaluate the effectiveness of a novel, school-based emotion controllability beliefs intervention on UK secondary school students' mental-health outcomes. We predicted that, compared with the control group, those receiving the intervention would report more

favourable change (relative to baseline) in these outcomes. To directly test this, we conducted a randomised-controlled trial with two groups (intervention, active control), with assessments at baseline and endline. 346 sixth form students from a large co-educational state sixth-form college, located in Southeast England were recruited. Participants completed questionnaires pre- and post-intervention, assessing emotion beliefs, emotion regulation, anxiety and depression. The online intervention included 3 modules, accessed via mobile phones in the classroom. Intervention materials included a focus on emotion-regulation strategies, emphasising the message that ‘with practice you can get better at regulating your emotions’. Findings suggested that being assigned to the intervention condition (compared to the control) led to more adaptive emotion beliefs, and more favourable mental health outcomes. By uniquely exploring young people’s emotion controllability beliefs, we advance our understanding of these important mechanisms and help inform school-based mental-health interventions.

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## Early Childhood Character Strengths: Development and Validation of the ECCSS Parent-Report Scale

**Presenting author:** Cheuk Ming Ho, The Chinese University of Hong Kong, Hong Kong

### Abstract

The importance of fostering character strengths in early childhood for promoting adaptive behaviour at home and in school has been increasingly recognised. To support this, there is a need for reliable and valid tools to assess children’s character strengths. This study developed and validated a parent-report measure for children aged 3 to 6 years, the Early Childhood Character Strengths Scale (ECCSS). Following standard procedures for scale construction, the research comprised three phases: item development, scale development, and scale evaluation. The ECCSS targets six character strengths: love, kindness, love of learning, curiosity, persistence, and gratitude. In the scale evaluation phase, 217 parents of children aged 3 to 6 years completed the ECCSS and the Brief Problem Monitor–Parent form (BPM-P), a measure of emotional and behavioural difficulties. Because character strengths are theoretically inversely related to problematic behaviours, it was hypothesised that ECCSS scores would show negative associations with BPM-P scores. Descriptive statistics, reliability analyses, correlations, and confirmatory factor analyses (CFAs) were conducted. Internal consistency was acceptable for all factors, and CFAs together with chi-square difference tests supported the theorised six-factor model, indicating that the ECCSS adequately captures the targeted early childhood character strengths. Multiple regression analyses further supported the hypotheses, showing that ECCSS scores significantly predicted BPM-P scores. These findings provide initial evidence that the ECCSS is a psychometrically sound instrument for assessing character strengths in early childhood and for examining their relations with emotional and behavioural problems.

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## Fostering the Sense of Security and Comfort in Compulsory Education: A Pattern-Based Model

**Presenting author:** Matthias Huber, University of Teacher Education Carinthia, Austria; Christine Haupt, University of Teacher Education Carinthia, Austria

### Abstract

The Sense of Security and Comfort (SSC), conceptually rooted in the notion of Geborgenheit, denotes a socially constituted emotional orientation characterized by trust, inner safety, and emotional warmth. This emotion has been identified as a foundational condition for learning, motivation, and self-regulation in educational contexts.

While recent research has advanced the conceptualization and measurement of SSC, little is known about how SSC is actively fostered through everyday pedagogical and institutional practices in compulsory education. Addressing this gap, the present study investigates the core domains and recurring configurations through which SSC emerges in school and classroom life. The study follows an exploratory sequential mixed-methods design and is embedded in a research project on SSC among students aged 6–14 years. Building on a large-scale quantitative survey ( $n = 1,462$ ), the qualitative phase draws on semi-structured expert interviews with 40 teachers selected through purposive sampling, including only those whose students reported the highest SSC levels in the quantitative phase. Interview data were analyzed using content-structuring qualitative content analysis. The results identify six central domains fostering SSC. Furthermore, four recurring patterns were identified, capturing relational, structural, familial, and peer-related configurations through which SSC is stabilized. The findings culminate in a pattern-based model conceptualizing SSC as an emergent outcome of interconnected school domains. The study highlights the need for coordinated pedagogical efforts to strengthen the sense of security and comfort in compulsory education and provides a framework for future longitudinal and intervention-oriented research.

## Paper Session 18: Teaching Quality, Teaching Styles, and Student Motivation

### Great Teaching, Great Feeling? Teaching Quality And Its Impact On Students' Motivation And Emotions

**Presenting author:** Anne Kosubek, Institute of Educational Research, University of Wuppertal, Germany

**Co-author(s):** Rebecca Lazarides, University of Potsdam, Germany; Hanna Gaspard, University of Konstanz, Germany; Juliane Schlesier, University of Wuppertal, Germany

#### Abstract

Recent research has shown that teaching quality is linked to both students' motivation and emotions in the classroom. According to Control Value Theory, students' motivation explains the links between learning environment characteristics (e.g., teaching quality) and academic emotions. However, such mediational links need further empirical examination as particularly the differential role of students' motivation in explaining links between perceived teaching quality and different types of school-related emotions is uncovered. Using longitudinal path modelling, this study examined whether students' motivation (school-related self-efficacy & value) in the middle of the school year mediated relations between individual students' perceptions of teaching quality (classroom management, teacher support, cognitive activation) at the beginning of the school year and students' academic emotions (pride, enjoyment, anxiety, anger) at the end of the school year. Using data of 597 students (grades 5 to 11), findings of mediation analyses revealed full mediation of the effects of student-perceived classroom management, teacher support, and cognitive activation on students' pride, enjoyment, and anger – but not for their anxiety - via students' value. When examining students' self-efficacy, analyses indicated full mediation of the effects of student-perceived classroom management, teacher support and cognitive activation on students' anxiety, as well as of classroom management and teacher support on students' pride, but not for students' anger. The findings shed light into the underlying processes through which teaching quality affects students' emotions.

## Instructional practices supporting emotions, value beliefs, and perceived motivational support

**Presenting author:** Anders Hofverberg, Umeå University, Sweden

**Co-author(s):** Mikael Winberg, Umeå University, Sweden; Catarina Andersson, Umeå University, Sweden

### Abstract

This study examines how specific classroom practices influence upper secondary students' in-situ motivational experiences, including achievement emotions, value beliefs, and perceived support for mastery goals, autonomy, and competence (SMAC). Despite extensive research on motivation, research on the classroom application of this knowledge is still underdeveloped. Clarifying how motivation-supportive practices manifest in real classrooms, and how they relate to students' lived experiences, is therefore essential for translating theory into pedagogical action. Within a one-year research–practice partnership, the authors and three teachers collaboratively designed and tested instructional elements aimed at promoting motivation. Twelve lessons were observed and qualitatively coded, and their characteristics were linked to students' in situ experiences collected through experience sampling methodology. Relationships between instructional practices and student experiences were modelled using orthogonal partial least squares regression. The results show that practices emphasizing learning objectives were positively associated with students' positive emotions, value beliefs, and SMAC, whereas doing objectives—framing goals in terms of task completion—were generally negatively associated. Clear lesson structure (e.g., expectations, planning) consistently predicted positive outcomes, while structural ambiguity showed negative associations. Relational support, such as showing genuine interest in students' lives and their learning, further enhanced motivation. Feedback aligned with mastery-oriented goals was perceived less favourably in doing-oriented contexts, suggesting that goal framing shapes how feedback is received. Overall, the findings illustrate how theoretically grounded principles of motivation can be enacted through subtle but deliberate instructional practices, offering actionable insights for implementing motivational theory in everyday teaching.

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## The brighter and darker motivational path: Linking teaching styles and student motivational outcomes

**Presenting author:** Eta Krpanec, Institute of Social Sciences Ivo Pilar, Croatia

### Abstract

Research in self-determination theory found that autonomy-supportive teaching style encourages adaptive student outcomes creating the “brighter” motivational pathway, while controlling teaching style generates maladaptive student outcomes creating the “darker” motivational pathway. However, the directional relationships between the variables on these pathways remain unclear. Furthermore, it was only recently acknowledged that students can inversely impact teachers via agentic (dis)engagement, which has a reciprocal relationship with teaching styles. Therefore, this study aims to investigate the directional and reciprocal relationships between perceived teaching styles, motivation, agentic (dis)engagement and academic achievement, as proposed by Reeve and colleagues' revised model of student engagement. We conducted a two-wave longitudinal study within the project Free Career Choice, funded by the Croatian Science Foundation. Self-reported data from 1213 high school students (61.1% girls) was collected and analysed using autoregressive cross-lagged modeling. We analogously explored variables' associations for the brighter and darker pathways. For the brighter pathway, our results mostly followed the theoretical model: perceived teacher autonomy support predicted autonomous motivation, autonomous motivation predicted agentic engagement, and agentic engagement predicted academic achievement. However,

instead of agentic engagement, autonomous motivation had reciprocal link with perceived teacher autonomy support. For the darker motivational pathway, no significant cross-lagged relationships emerged, offering no support for the theoretical model. These results indicate that brighter and darker pathways may not follow the same patterns. Teachers seem to initiate positive motivational processes in students, and students seem to foster supportive teaching. In contrast, negative motivational processes seem to be largely stable and unaffected by mutual relationships.

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## How Accurately Can Teachers Diagnose Students' Needs for Autonomy Support?

**Presenting author:** Barbara Flunger, Utrecht University, Netherlands

**Co-author(s):** Lisette Hornstra, Utrecht University, Netherlands

### Abstract

Can teachers accurately identify how to optimally meet specific students' needs for autonomy? The present study aimed to examine how teachers' perceptions of students' needs for autonomy support correspond with students' self-reported needs for autonomy support, and which factors affect this correspondence. Another objective was to investigate how teachers' diagnoses of students' autonomy support needs related to students' perceptions of individual autonomy support and perceptions of teachers' differentiation in autonomy support. We used data from 465 Dutch primary school students (age range = 9-14) and their 22 teachers. Teachers and students rated students' needs for autonomy support concerning four strategies (provision of choices, rationales, acknowledgement of frustration, and interest stimulation) and individual autonomy support; students were also questioned about their perceptions of teachers' differentiation in autonomy support. With Bayesian multilevel analyses, we examined the agreement between teacher and student ratings. Moreover, we investigated how teachers' judgment accuracy related to students' perceptions of individual autonomy support and teachers' differentiation in autonomy support. We found weak agreement between teacher and student ratings concerning students' needs for autonomy support. For most associations between teacher ratings and students' perceptions of individual autonomy support and differentiation in autonomy support, we did not find credible evidence. Teachers' perceptions might not yield valid information for assessing students' preferences and needs concerning autonomy support. It seems worthwhile to train teachers in developing a student-focused attitude (i.e., learning how to recognize students' perspectives), to be able to better identify students' support needs and provide adaptive need support for individual students.

## Keynote 2

**Fani Lauermann**

Professor of Education and Psychology  
University of Bonn, Germany

***Turning the Investigative Lens on Teachers:  
When and How Teacher Motivation Shapes  
Classroom Processes and Outcomes***

Educational psychology has traditionally centered on students rather than teachers, even as interest in teachers' psychological characteristics—especially motivation and emotion—has grown over the past 15 years. Evidence links teachers' motivational beliefs, such as self-efficacy, enthusiasm, and professional responsibility, to instructional decisions and practices, but consistent associations with student outcomes remain elusive. This talk examines why the evidence base often falls short and how to strengthen it. Key limitations include coarse or misaligned measurement of teacher motivation and student outcomes, discrepancies between teachers' and students' reports of classroom processes, and designs that compare teachers rather than model within-teacher and within-classroom change over time. I discuss recent and ongoing studies that clarify when and how motivated teachers foster classrooms that support student engagement and learning, and conclude with recommendations for analytic strategies to advance the field.

## Symposium 7: Navigating Towards STEM: Predictors In- and Outside of Education

**Organizer:** Kukka-Maaria Polso, University of Helsinki, Finland

**Chair:** Kukka-Maaria Polso, University of Helsinki, Finland

**Discussant:** Daria Katharina Benden, University of Bonn, Germany

### Abstract

Understanding who opts for fields of science, technology, engineering, and mathematics (STEM) remains an important theme in motivation research with potential consequences for policy and practice. This symposium comprises four recent studies with complementary perspectives on students' choices: the first two papers focus on adolescents' motivation for and motivational hierarchies between mathematical and verbal domains, while the latter two papers zoom in on students' experiences in higher education. The studies stem from a rich theoretical background, draw on European and North-American datasets, and utilize both quantitative and mixed-methods approaches. Paper 1 stretches over ten years from early adolescence to young adulthood and highlights increasing stability and slight growth in both reading- and math-related career aspirations across this period. With a focus on the relative levels of subject-specific motivation, Paper 2 shows adolescents' cross-domain motivational profiles to be meaningfully linked with their STEM aspirations and vocational interests in a broader sense. Shifting to the context of higher education, Paper 3 follows students through introductory STEM courses and uses multilevel modeling to establish that student-perceived interesting activities in class matter for both momentary and long-term interest development and major intentions. Finally, Paper 4 investigates the influence of media on university students' aspired future careers and suggests that media shapes their decisions by piquing interest, conveying realistic portrayals, and providing relatable identities. Taken together, the studies offer novel insights into several factors relevant to STEM-related choices, including the short- and long-term development of plans, dimensional comparisons, different types of interest, and gender.

### ***Domain-Specific Career Aspirations, Motivation, and Achievement Across Adolescence***

**Presenting Author:** Elisabeth Graf, TU Dortmund, Germany

**Co-author(s):** Nele McElvany, TU Dortmund, Germany; Joerg-Tobias Kuhn, TU Dortmund University, Germany

### Abstract

Based on expectancy-value and dimensional comparison theory, domain-specific motivational beliefs (e.g., self-concept) are important predictors of adolescents' career aspirations. However, we know relatively little about how domain-specific career aspirations evolve across adolescence, and whether they predict future domain-specific motivation. This study used longitudinal data from Germany (N=8,289) to evaluate the stability, trajectories, and predictors for math- and reading-related career aspirations. Further, we investigated whether within- and cross-domain associations to self-concept and motivation change over time, as well as if career aspirations predict future self-concept, motivation, and achievement. We observed increasing stability and importance levels of math- and reading-related career aspirations. We found longitudinal within- and cross-domain effects mainly for the reading domain. The results underline adolescence as a critical period for career development and have implications for career counseling and domain-specific specializations during adolescence.

### ***Adolescents' Cross-Domain Motivational Profiles, Vocational Interests, and STEM Aspirations***

**Presenting Author:** Kukka-Maaria Polso, University of Helsinki, Finland

**Co-author(s):** Hanna Gaspard, University of Konstanz, Germany; Heta Tuominen, University of Eastern Finland, Finland; Petri Ihantola, University of Jyväskylä, Finland

#### **Abstract**

Research grounded in situated expectancy-value theory (Eccles & Wigfield, 2020) has shown students' intraindividual motivational hierarchies between mathematical and verbal domains to predict their choice of educational pathways related to science, technology, engineering, and math (STEM). However, prior studies have not considered how such hierarchies are associated with their vocational interests as another key factor linked with such choices. To understand nuanced patterns of motivation behind emerging choices, we investigated how German adolescents' (N = 1685) cross-domain motivational profiles are linked with their STEM aspirations and vocational interests. Latent profile analyses identified four motivational profiles in math and German motivation: Highly motivated, Less motivated, Language-motivated, and Math-motivated. As expected, the Math-motivated students reported even higher STEM aspirations than the Highly motivated students, whereas students in the Language-motivated profile had even lower STEM aspirations than the students in the Less motivated profile, controlling for gender, family background, and prior math and German achievement. Additionally, intraindividual motivational hierarchies were found to explain later vocational interests over and above the covariates with the Math-motivated profile demonstrating highest realistic interests and the Language-motivated profile showing highest social interests. Our findings underscore the importance of cross-domain perspectives when seeking to understand nuanced individual and group differences in STEM-related aspirations, but also other choice-related factors less straightforwardly linked with the mathematical and verbal domains.

### ***Interesting Topics to Promote Student Interest and Major Intentions in STEM Courses***

**Presenting Author:** Kristy Robinson, McGill University, Canada

**Co-author(s):** Marianne Dubé, McGill University, Canada; Jessica Hunter, McGill University, Canada; Cole Johnson, McGill University, Canada; Romane Monnet, McGill University, Canada; Sanheeta Shankar, McGill University, Canada

#### **Abstract**

Introductory university science, technology, engineering and mathematics (STEM) courses are important contexts for shaping students' motivational beliefs and intentions to pursue STEM. However, the extent to which day-to-day shared and individual motivational experiences in class can support students' interest in the course material, and the types of experiences students need to have in order to believe their instructor considers their interests, are largely unknown. Answering these questions is important for testing theory about motivational climate and microclimate processes, as well as for informing practical supports for students' STEM-related motivation and behavioral intentions. Using intensive longitudinal data (i.e., end-of-class surveys) that included both quantitative and open-ended student reports from 1,874 students, we found that student-perceived interesting activities predicted end-of-class interest in the course, end-of-semester interest in the course domain, and end-of-semester intentions to pursue a major related to the course domain, controlling for baseline levels of interest and intentions. These effects were seen at the between-situations and the within-situations, between-students levels, indicating both played unique roles in shaping student motivation and intentions. Content analysis of open-ended responses illuminated the types of activities that promoted interest-supportive classroom motivational climates and microclimates in these courses. Taken together, results verify and build on theoretical propositions from

motivational climate theory and interest development theory. In addition, the results provide actionable findings to inform effective practical supports for students' interest development in STEM courses.

### ***Worth the Watch: Media's Impact on STEM Student Career Decisions***

**Presenting Author:** Kitley Kern, University of Cincinnati, United States

**Co-author(s):** Patrick Beymer, University of Cincinnati, United States

#### **Abstract**

This study examines how media influences STEM career decision-making and whether students feel represented in that media. Using a mixed-methods design, we surveyed 655 General Chemistry II students at a large university in the United States and analyzed quantitative ratings and qualitative explanations of media influence. Students rated how influential nine media types were to their STEM career and provided open-ended responses describing the most influential media, why it mattered, and whether they identified with anyone in the media. Social media emerged as the most influential type, while plays were the least influential. Five themes explained media influence: emotional impact, interest, realistic portrayal, value, and information. Representation themes included personality, possible selves, and gender. Men cited interest more often than women, whereas women emphasized realistic portrayals and representation more than men. These findings extend prior work by revealing why media matters and how identity shapes its influence. Results suggest that inclusive, authentic portrayals, and diverse role models can foster motivation and belonging in STEM. Educators should leverage media strategically to support persistence and equity in STEM pathways.

## **Symposium 8: Teacher Motivation and Emotion: Antecedents and Dynamic Processes**

**Organizer:** Rebecca Lazarides, University of Potsdam, Germany

**Chair:** Rebecca Lazarides, University of Potsdam, Germany

**Discussant:** Markus Dresel, University of Augsburg, Germany

#### **Abstract**

Teacher motivation and emotion are known to be central for the quality of instruction and learning processes in students. Open questions concern in particular the precursors of teacher motivation and emotion and their effects on micro-level instructional processes. Rooted in different theoretical approaches (Socio-Cognitive Theory, Control-Value Theory, enthusiasm research), this symposium brings together an international group (Australia, Germany, Spain) and multiple studies. Investigated are antecedents and intervention effects (Study 1) as well as microlevel processes in the classroom (Studies 2, 3 and 4) providing insights into how and why teachers' motivation and emotion affect and are affected by their learning environments. Paper 1 provides meta-analytic evidence on intervention and longitudinal effects on teacher self-efficacy (TSE). Moderator analyses identified seven intervention activities that consistently predicted TSE gains. In longitudinal studies, in contrast, no variables predicted later TSE once autoregressive effects were controlled for. Paper 2 shows that teachers' self-reported growth mindsets positively predicted the use of growth-mindset messages (assessed via Large Language Models). In contrast, teacher enthusiasm did not predict message use. Paper 3 indicates that teachers spent more time talking with students for whom they reported higher self-efficacy and enthusiasm, but these links were non-

significant once teachers' behavioral engagement was controlled for. Paper 4 indicates that teachers' trait enjoyment fosters situation-specific stability in teachers' nonverbal immediacy (assessed via machine learning), and that teachers' anxiety reduces the overall level of students' cognitive engagement in class. An expert discussant will draw out recommendations for further research, educational policy and practice.

### ***Motivational Dynamics in Teaching: Meta-Analytic Evidence on Self-Efficacy Antecedents***

**Presenting Author:** Danling Huang, Australian Catholic University, Australia

**Co-author(s):** Johnmarshall Reeve, Institute for Positive Psychology and Education, Australian Catholic University, Australia; Theresa Dicke, Institute for Positive Psychology and Education, Australian Catholic University, Australia; Hye-Ryen Jang, Institute for Positive Psychology and Education, Australian Catholic University, Australia; David Morris, St. Mary's College of Maryland, United States; Geetanjali Basarkod, Institute for Positive Psychology and Education, Australian Catholic University, Australia; Jiesi Guo, Australian Catholic University, Australia; Janina Täschner, Technical University of Munich (TUM) & ZIB (Centre for International Student Assessment), Germany; Rebecca Lazarides, University of Potsdam, Germany; Bridget Booker, Institute for Positive Psychology and Education, Australian Catholic University, Australia; Herb Marsh, Institute for Positive Psychology and Education, Australian Catholic University, Australia

#### **Abstract**

Teacher self-efficacy (TSE) is a central motivational resource that shapes teachers' effort, persistence, instructional behaviour, and emotional wellbeing. However, evidence on what reliably increases TSE remains unclear and scattered. This study aims to identify statistically significant antecedents of TSE growth. Two complementary meta-analyses were conducted: (a) intervention studies with discrete activities and their corresponding effects on post-intervention TSE, and (b) longitudinal studies examining quantitatively measured predictors of subsequent TSE in naturally occurring contexts. Analyses were conducted in R using metafor and metaSEM, respectively. Results show that both the overall intervention effect and the overall longitudinal effect on later TSE were statistically significant. Moderator analyses identified seven intervention activities that consistently predicted TSE gains; skill development, collaborative learning/teaching, and reflection emerged as the most robust across teacher and demographic subgroups. In contrast, no quantitative variables in longitudinal studies significantly predicted later TSE once autoregressive effects were controlled. These findings advance teacher motivation research by clarifying which professional experiences reliably enhance TSE and by demonstrating the value of integrating intervention and longitudinal evidence. Practically, the results highlight specific professional learning activities that educational leaders and policymakers can target to strengthen teacher motivation and instructional confidence. The study establishes a strong evidence base for designing TSE-supportive environments in schools and teacher education.

### ***Effort and Talent in Teacher Talk: How Mindsets, Enthusiasm, and Motivation Shape Messages***

**Presenting Author:** Sara Ramírez Ramírez, University of Las Palmas de Gran Canaria, Spain

**Co-author(s):** Samuel Falcon, University of Atlántico Medio, Spain; Jaime J Leon, ULPGC, Spain

#### **Abstract**

Teacher discourse includes different types of messages that reveal how they frame learning in everyday lessons. Among them, mindset messages are particularly relevant, as they refer to beliefs about effort, improvement and ability. Some messages highlight persistence and progress, while others focus on natural ability. However, little is known about how often teachers use these messages, and the factors that could affect their appearance. Thus, the study explores the frequency of teachers' mindset messages, and how enthusiasm and classroom motivation relate to the use of these messages. Forty-five primary school teachers participated, audio-recording their

mathematics classes throughout the school year. These recordings were transcribed using Whisper and analysed with large language models to identify growth and fixed-mindset messages. Findings showed that teachers rarely used mindset messages, though growth-mindset ones appeared across all grades and were more frequent early in the year. The number of fixed-mindset messages was limited, so the analysis for this category was descriptive rather than inferential. Regarding teachers' mindsets, those who believed that students' abilities can develop through effort tended to use a higher number of growth messages. According to the other variables, the analyses showed that enthusiastic teachers did not necessarily convey more growth-mindset messages and that classroom motivation did not predict message use. However, a slight tendency suggested that teachers might increase the use of growth messages when student motivation is lower.

### ***Teachers' Student-Specific Motivations, Student Engagement, and Classroom Interactions***

**Presenting Author:** Annika Koch, University of Bonn, Germany

**Co-author(s):** Fani Lauermann, University of Bonn, Germany

#### **Abstract**

Teachers' motivational beliefs are assumed to shape their classroom behavior, yet little is known about how such beliefs operate at the level of individual students. This study draws on multi-source data from 33 German-as-a-second-language teachers and 309 secondary students to examine within-class associations among students' academic characteristics, teachers' student-specific self-efficacy and enthusiasm, the allocation of student-directed teacher talk, and students' in-class participation. Students completed a standardized German proficiency test and reported their intrinsic motivation; teachers rated each student's language proficiency and emotional, cognitive, and behavioral engagement, and their own motivation for teaching each student. Videotaped lessons were transcribed to derive the amount of time teachers spent talking with each student and code the directionality and type of interactions (e.g., teachers calling on students). Student-level analyses showed that teacher-rated emotional and cognitive engagement were the strongest predictors of teachers' student-specific self-efficacy and enthusiasm, explaining substantial within-class variance in these beliefs. Teachers spent more time talking with students for whom they reported higher self-efficacy and enthusiasm, but these links became non-significant once teacher-rated behavioral engagement was controlled. Behaviorally engaged students received more teacher talk overall, yet, controlling for engagement, teachers talked more with students they perceived as less proficient in German. Student-initiated classroom interactions were more strongly linked to teacher and student motivation and achievement than were teacher-initiated ones. Findings highlight the central role of teacher-perceived engagement in shaping teachers' motivation and their distribution of limited instructional time among students.

### ***Teacher Enjoyment Intensifies Stability in Teaching, While Anxiety Hinders Learning: A Dynamic View***

**Presenting Author:** Rebecca Lazarides, University of Potsdam, Germany

**Co-author(s):** Richard Göllner, University of Potsdam, Germany; Jonas Frenkel, University of Potsdam, Germany; Theresa Dicke, Institute for Positive Psychology and Education, Australian Catholic University, Germany; Jiesi Guo, Australian Catholic University, Australia; Uros Petkovic, Technische Universität Berlin, Germany; Olaf Hellwich, Technische Universität Berlin, Germany; Markus Dresel, University of Augsburg, Germany

#### **Abstract**

Teacher emotions are central to student learning and transmitted to students through teachers' nonverbal behaviors. However, the role of teachers' emotions in shaping the moment-to-moment dynamics of their nonverbal immediacy (NVI) and student learning during instruction need further empirical consideration. This study examines

(a) the intraindividual stability and reciprocal relations between NVI and students' cognitive engagement at the situational level (Level 1: time within lessons) and (b) how teachers' enjoyment and anxiety relate to the intraindividual stability and interrelations of NVI and student engagement (Level 1) as well as to their interindividual (average) levels across lessons (Level 2: teachers). Our analyses based on longitudinal intensive data and multimodal assessments combining video-based machine-learning assessment of teachers' NVI, observer-rated student cognitive engagement, and self-reported teacher emotions. Data included 50 teachers (46% women) and their 1,140 students (53% girls; Mage = 15 years). Two-level dynamic structural equation models were applied. Findings revealed a high stability (carry-over) of NVI and student cognitive engagement. Further, negative spill-over (lagged) effects were shown whereby higher student cognitive engagement predicted reduced teacher NVI at the subsequent time point (Level 1). Teachers' enjoyment (Level 2) was associated with greater stability in teachers' NVI across situations (Level 1). Teacher anxiety (Level 2) was linked to lower average student cognitive engagement (Level 2). The study indicates that once NVI and student cognitive engagement are established, they persist across learning situations to a large degree. Teacher enjoyment fosters stability in NVI and teacher anxiety can deplete student engagement.

## Symposium 9: Integrative Perspectives from Theory and Praxis on Motivation and Learning in Uncertain Times

**Organizer:** Luise von Keyserlingk, University of Tuebingen, Germany

**Chair:** Allan Wigfield, University of Maryland, United States

**Discussant:** Matthew Bernacki, University of North Carolina at Chapel Hill, United States

### Abstract

Motivation research has produced influential theoretical frameworks that are strongly supported by empirical evidence and have informed interventions on students' motivation. Despite these advances, many researchers studying motivation and related topics, including self-regulated learning (SRL) and personality, are increasingly calling for integration across these areas. Studying motivation in isolation risks fragmented explanations of learning and limits the ability to explain how students adapt to real-world educational demands. This is particularly salient in changing educational contexts with increasing uncertainty, through, for instance, growing mistrust in institutions and research, and AI changing educational practices and prospective careers. This symposium brings together leading researchers from the above-mentioned fields. We sought both theoretical and empirical contributions to demonstrate how integration can lead to improved theory and research. Contribution 1 discusses the interface of students' SRL with their metamotivation, and how connecting across these topics informs students' educational outcomes, including their affect. Contribution 2 presents ways in which motivation and personality research can intersect. It emphasizes how motivation and personality interrelate and how they could reciprocally affect each other over time. Contribution 3 presents a case for adopting complex dynamic systems theory approaches to developing multifaceted interventions that foster students' motivation and affect. Contribution 4 integrates work on utility value interventions with a model of interest development and SRL, and emphasizes how an integrated perspective could help students regulate and maintain motivation. A leading expert on SRL and motivation will discuss how these theoretical and practical contributions can help understand motivation, affect, and learning.

### ***Using the MASLR model to explore the metamotivational processes in self-regulated learning***

**Presenting Author:** Eleftheria Gonida, Aristotle University of Thessaloniki, Greece

**Co-author(s):** Anastasia Efklides, Aristotle University of Thessaloniki, Greece; Eve Kikas, Tallinn University, Estonia

#### **Abstract**

Self-regulated learning (SRL) theory highlights the roles of cognition, motivation, and emotion in learning. Metamotivation, that is, the awareness, monitoring and regulation of one's motivation, extends SRL by serving as the motivational parallel to metacognition. Using the Metacognitive and Affective Model of SRL (MASRL) (Efklides, 2011; Efklides & Schwartz, 2024), this theoretical presentation examines how metamotivation functions within SRL. We argue that metamotivation targets motivational processes and consists of three components: metamotivational knowledge (beliefs about motivation), metamotivational experiences (moment-to-moment thoughts and feelings about one's motivational state during a task), and motivation regulation strategies (deliberate actions to adjust motivation). Metamotivational experiences are especially central for monitoring motivational quality and quantity as well as effort, often overlapping with metacognitive experiences. We propose that SRL involves dynamic interactions between metamotivational and metacognitive processes that support flexible strategy use and goal attainment. However, metacognition and metamotivation cannot be reduced to one another. The implications of integrating metamotivational processes into SRL for theory, research, and educational practice are discussed.

### ***Motivation, personality, and self-regulated learning skills: An integrative perspective***

**Presenting Author:** Luise von Keyserlingk, University of Tuebingen, Germany

**Co-author(s):** Lisa Bardach, University of Giessen, Germany; Jacque S. Eccles, University of California, Irvine, United States

#### **Abstract**

Research over recent decades has highlighted the importance of both personality and motivation in students' academic success. Yet, integrations of motivation and personality have rarely been adopted in educational psychology. The present article, therefore, places the motivation–personality interplay at the center. We review theoretical perspectives that offer pathways toward integration, focusing on examples from (a) theories from personality psychology that include motivational elements, (b) motivational theories that (implicitly) incorporate personality, and (c) theoretical perspectives that focus on the learning process. We show that existing theories and their extensions provide many opportunities for motivation–personality integration at multiple levels, including dynamic state-level interplay and long-term trait development, and principles of sustainable and self-regulated learning. Additionally, we discuss shared research interests between educational and personality psychology to inspire a collaborative research agenda.

### ***Multifaceted Integrative Motivation Interventions Can Prepare Students For Uncertain Times***

**Presenting Author:** Lisa Linnenbrink-Garcia, Michigan State University, United States

**Co-author(s):** Allan Wigfield, University of Maryland, United States

#### **Abstract**

Over the last 20 years, motivation scholars have developed interventions to enhance different aspects of motivation. These interventions primarily have been targeted ones, meaning that they focus on enhancing one

aspect of motivation, such as utility value. We make the case here that it is time for intervention researchers to take a broader, dynamic systems-based perspective on interventions – specifically to develop and assess multifaceted interventions that integrate across theory to consider multiple forms of motivation and emotion. In doing so, we note Complex Dynamic Systems (CDS) approaches could inform the design of such interventions and provide insights into understanding how students’ motivation, conceptualized as a complex system, is both dynamic and responsive to the broader learning context. To make our case, we present the design and results of two intervention studies that utilized multiple principles derived from motivation and emotion theory to develop instructional approaches for supporting students’ motivation and emotions. The first focused on reading motivation and engagement and was implemented at both the elementary and middle school levels. The second focused on science motivation and engagement at the middle school level. After presenting the results, we consider broader issues regarding the impact of motivation interventions on students’ motivation, achievement emotions, and their interface. We also discuss challenges and promises of doing theoretically integrated intervention work based in CDS approaches.

### ***Motivating Self-Regulation: Utility Value, Interest Development, and the Potential for Intervention***

**Presenting Author:** Carol Sansone, University of Utah, United States

**Co-author(s):** K. Ann Renninger, Swarthmore College, United States; Judith Harackiewicz, University of Wisconsin-Madison, United States

#### **Abstract**

Students in high school and college are expected to take on greater responsibility for regulating their own learning, including decisions about what classes to take, their efforts in those classes, and future career paths. Self-regulation thus increasingly includes making decisions about how to sustain productive engagement, including whether, when, and how to regulate. Motivation is key to this process, but finding and maintaining the necessary motivation is often a challenge for students. We integrate insights from situated expectancy-value theory (Eccles & Wigfield, 2020) and research on utility-value interventions (UVIs) with insights from the four-phase model of interest development (Renninger & Hidi, 2019) to illustrate the motivational dynamics of self-regulation (Sansone, et al., 2019), and identify ways that students can be supported in this process. Value and interest are often closely related, and, when considered separately, each positively predicts student effort. Rather than considering them in isolation, here we consider how they may work together over time. UVIs can help students think about and articulate the usefulness of course topics, which can enhance perceived task value and motivate engagement with course content (Harackiewicz & Priniski, 2018; Wigfield & Eccles, 2020). UVIs may be especially helpful when students have little interest in learning the content, but this effect may become more nuanced as students develop interest. We suggest a framework for integrating these perspectives, we identify self-regulation challenges, and discuss possible ways to support this self-regulatory process. We also highlight future directions for research that emerge from this integration.

## Symposium 10: Understanding Affective Dynamics Through ESM: Context-Related Associations, Profiles, and Well-Being

**Organizer:** Joy Muth, University of Vienna, Austria; Tanja Bross, University of Augsburg, Germany

**Chair:** Joy Muth, University of Vienna, Austria

**Discussant:** Anne Frenzel, Ludwig-Maximilians-Universität München, Germany

### Abstract

Understanding how and why emotions fluctuate in daily life has become vital for supporting regulation and overall well-being. While most studies use trait assessments to examine antecedents and consequences of emotions, state assessments provide more detailed insights into affective dynamics, context-specific influences, and related outcomes. This symposium, therefore, presents four experience-sampling studies examining affective dynamics within different populations involved in the educational context, considering students, teachers, and parents. The first contribution (Austria) explored secondary school students' benign and malicious envy dynamics and their relations to depressive symptoms through dynamic structural equation modelling (DSEM). Results indicate that benign envy inertia buffers depressive symptoms, suggesting that re-framing envy responses might promote resilience. The second contribution (Germany) used multilevel latent profile analysis to identify situational and person-specific emotion regulation patterns among medical students preparing for exams. The patterns were found to be associated with different emotions and contextual factors. The third contribution (Croatia) employed residual DSEM among teachers to reveal that momentary psychological situation characteristics predict both positive and negative emotions, while aggregated situational patterns relate to job satisfaction. The fourth contribution (Luxembourg/UK) examined parents' emotions and emotional expressions over the Christmas period. Results from DSEM showed that parental burnout was associated with reduced genuine emotional expression to their children, which might have detrimental consequences. Together, the symposium advances a dynamic, multilevel understanding of affective processes in everyday life, highlighting methodological innovations and guiding evidence-based interventions from parenting to professional education.

### ***Relationship of student envy and depression over time: An experience sampling study***

**Presenting Author:** Flora Fassl, University of Vienna, Austria

**Co-author(s):** Joy Muth, University of Vienna, Austria; Alina Wunsch, University of Vienna, Austria; Maximilian Hofleitner, University of Vienna, Austria; Thomas Götz, University of Vienna, Austria; Marko Lüftenegger, University of Vienna, Austria

### Abstract

The competitive school context likely fosters envy among students; however, it is unclear whether and how students differ in their individual experiences of envy feelings. Also, while prior studies found benign envy to be positively and malicious envy to be negatively linked to depression, their causal relationship is unclear. This preregistered study investigates students' state envy forms and their dynamic associations with depressive symptoms using the experience sampling method. 83 secondary school students provided ESM data on state benign and malicious envy in 10 English lessons, supplemented by baseline and follow-up assessments of their depressive symptoms. Using dynamic structural equation modeling, we analysed students' envy dynamics over time (i.e., inertia, variability, and person-specific means) as well as bidirectional associations between envy and depressive symptoms. Results showed significant individual differences in dynamic patterns of both envy forms, but no event effect from returned grades. Depressive symptoms were only bidirectionally associated with benign envy inertia, suggesting a buffering

effect of benign state envy on depression. Our study contributes to understanding the dynamics of situational envy in students' daily lives and their links to depressive symptoms. These insights could help to design sustainable interventions conducted by teachers that not only tackle social-emotional classroom dynamics but also support emotionally struggling students.

### ***Students' Emotions and Emotion Regulation Towards an Upcoming Exam***

**Presenting Author:** Tanja Bross, University of Augsburg, Germany

**Co-author(s):** Nadja Karossa, University of Augsburg, Germany; Thomas Rotthoff, University of Augsburg, Germany; Ann-Kathrin Schindler, University of Augsburg, Germany; Sarah Junginger, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany; Ingo Kollar, University of Augsburg, Germany; Ulrike Nett, Augsburg University, Germany

#### **Abstract**

The aim of this study was to examine students' emotions, specifically joy, hope, frustration, and anxiety, and their emotion regulation in the days leading up to an important exam. A total of 154 medical students (Level 2) participated in an experience-sampling study over ten consecutive days, resulting in 3,834 situational assessments (Level 1). Multilevel latent profile analyses identified five situational (Level 1) emotion regulation patterns characterized by distinct combinations of regulation strategies, as well as four profiles at the person-level (Level 2). These findings indicate that students simultaneously use specific emotion regulation strategies and that the use of these different patterns differs across situations and individuals. Moreover, students employed different patterns depending on the experienced emotion, namely joy and hope, the current activity (studying activities vs. non-study-related activities), and whether they were thinking about the exam, underscoring the emotion- and situation-specific nature of emotion regulation. Taken together, the results highlight that students' emotion regulation is flexible and varies depending on the experienced emotion and situation in high-stakes academic contexts.

### ***How Classroom Situations Shape Teacher Emotions and Job Satisfaction? An Experience***

#### ***Sampling Study***

**Presenting Author:** Irena Burić, University of Zadar, Croatia

**Co-author(s):** Tanja Bross, University of Augsburg, Germany

#### **Abstract**

Teacher emotions are an integral part of classroom processes, shaping teaching quality and teachers' occupational well-being. However, classroom situations are highly dynamic, making it difficult to identify situational characteristics that systematically elicit different emotional responses in teachers. Drawing on a lexically derived taxonomy of psychological situation characteristics (PSCs), this study examined within-person dynamic associations between PSCs—Complexity, Adversity, Positive Valence, Importance, Humor, and Negative Valence—and teachers' positive and negative emotions, as well as between-person associations of PSCs and teacher emotions with job satisfaction. A total of 104 secondary school teachers participated in a 10-day experience sampling study with three assessments per workday. Data were analyzed using residual dynamic structural equation modeling (RDSEM) to capture within-person dynamics while accounting for autoregressive effects and temporal trends. At the within-person level, Complexity, Humor, Importance, and Positive Valence showed positive concurrent associations with positive emotions, whereas Complexity, Importance, and Positive Valence were concurrently associated with lower negative emotions. Adversity and Negative Valence were negatively related to positive emotions and positively to negative emotions. At the between-person level, similar patterns of associations emerged. In addition, teachers reporting higher average levels of positive emotions also

reported greater job satisfaction, whereas higher average negative emotions were linked to lower job satisfaction. Regarding PSCs, situations perceived as more important and positively valenced were associated with higher job satisfaction, while adverse situations were associated with lower job satisfaction. Overall, the findings highlight the role of malleable situational characteristics in shaping teachers' emotional experiences and occupational well-being.

### ***Higher parental burnout predicts lower emotional expression in parents during the festive season***

**Presenting Author:** Ziwen Teuber, University of Luxembourg, Luxembourg

**Co-author(s):** Elouise Botes, University of Luxembourg, Luxembourg; Julia Reiter, University of Vienna, Austria; Samuel Greiff, Technical University Munich, Germany; Kaisa Aunola, University of Jyväskylä, Finland; Daniel McNeish, Arizona State University, United States

#### **Abstract**

This study adopted a within-person lens to unpack parental burnout and genuine emotional expression, focusing on their interplay and dynamic patterns – inertia, variability, and person-specific mean – during the Christmas season, an emotionally charged period that offers a valuable time window to study affective dynamics in parenting. Using the experience sampling method, we conducted a 35-day real-time study with 293 U.K. parents (14,451 observations), supplemented by baseline and follow-up assessments. Dynamic structural equation modeling was used to test reciprocal within-person relations between both constructs over time, to assess individual differences in dynamic patterns, and to explore whether these patterns mediated changes in burnout and expression from baseline to follow-up. Results revealed a negative, unidirectional within-person association from parental burnout to genuine expression. Individual differences were found in inertia, variability, and person-specific mean levels for both constructs. Notably, these person-specific mean levels mediated the links between baseline and follow-up levels of parental burnout and genuine expression. These findings offer insights into how short-term dynamics in parental burnout and genuine expression shape longer-term affective (mal)adjustment. They suggest that future intervention programs could benefit from being personalized and delivered in real time, targeting emotion regulation and burnout recovery in parents, particularly during emotionally intense periods such as the holiday season.

## **Symposium 11: Challenges to motivation in learning: Investigating relationships between context and learner**

**Organizer:** Katie Kumasaka, Curtin University, Australia

**Chair:** Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

**Discussant:** Daniela Raccanello, University of Verona, Italy

#### **Abstract**

Understanding the conditions that support or undermine intrinsic motivation remains a central concern for educators and researchers seeking to foster meaningful, self-directed learning. This symposium brings together four studies from diverse international contexts to examine how learner characteristics and environments interact to shape intrinsic motivation. Representing research across Switzerland, Iceland, Hungary, and Australia, the symposium provides a comparative lens on the challenges learners face as they navigate increasingly complex educational settings. Two of the studies focus on secondary school students, highlighting how adolescents' motivational experiences are shaped not only by classroom pedagogy but also by broader sociocultural

expectations. These studies unpack the tensions between learners and external pressures, showing how school structures and relationships can either cultivate curiosity and motivation or unintentionally suppress students' willingness to engage deeply with their learning. Complementing these, two higher education studies explore student motivation in university learning environments undergoing rapid transformation. They illuminate how motivational patterns can disrupt students' sense of competence and belonging yet also reveal conditions under which intrinsic motivation can be strengthened through supportive teaching practices and targeted interventions. Together, these four investigations employed complementary methodologies, including phenomenological research, survey-based modelling, cross-sectional and longitudinal designs. This methodological diversity allows for a rich, multidimensional understanding of motivational processes. By bringing secondary and higher education research into dialogue across different national contexts, this symposium offers new insights into how intrinsic motivation can be better supported and where persistent barriers continue to emerge in contemporary education contexts.

### ***Teacher–student conflict, anger, and identified regulation in secondary school students***

**Presenting Author:** Julia Mori, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

#### **Abstract**

Drawing on self-determination theory (SDT; Ryan & Deci, 2000), control-value theory of achievement emotions (CVT; Pekrun, 2000), and research on teacher–student relationships (Wentzel, 2015), we examined how teacher–student conflict, anger, and identified regulation co-develop during lower secondary school. Using data from the SNSF-funded longitudinal project “Well-Being in School in Switzerland” (WESIR; 2021–2025), the analytic sample comprised 926 students (49.7% male; Mage = 13.0, SD = 0.6) from 44 classes in 17 German-speaking Swiss schools, assessed across three waves (Grades 7–9). We estimated multiple-indicator random-intercept cross-lagged panel models (RI-CLPM; Mulder & Hamaker, 2021) to disentangle stable between-person differences from within-person dynamics while accounting for within-wave covariation. Increases in teacher–student conflict predicted higher subsequent anger at both lags, whereas anger did not reliably forecast later conflict. Anger predicted lower identified regulation at both lags, and conflict showed a negative link with later identified regulation. Identified regulation did not reliably predict subsequent conflict or anger. Taken together, the results indicated that day-to-day relationship strains seem to function as an upstream driver of anger, which in turn undermined identified regulation over time. This underscores the value of interventions that jointly target relationship quality, emotion regulation, and motivational support in secondary classrooms.

### ***Threats to intrinsic motivation: Peer victimization, teacher support, and digital distractions***

**Presenting Author:** Kristján Stefánsson, University of Iceland, Iceland

#### **Abstract**

Grounded in Self-Determination Theory, this study examines how contextual factors threaten adolescents' intrinsic motivation by undermining school belonging—a core component of relatedness. Using post-hoc analyses of large-scale evaluation datasets from Icelandic compulsory schools (Grades 6–10; N = 226,313), we investigated three potential threats: peer victimization, insufficient teacher support, and extensive smartphone use. A linear mixed model indicated that peer victimization strongly predicted lower school belonging ( $\beta = -0.56$ ), while teacher support positively predicted belonging ( $\beta = 0.39$ ). Smartphone use was indirectly linked to belonging through its association with victimization. Students who completed surveys in non-Icelandic languages reported moderately lower belonging ( $d = -0.49$ ), highlighting risks for minority groups. Interaction analyses identified vulnerable subgroups—

girls of foreign origin and girls who extensively use smartphones— who experienced elevated victimization. These findings highlight how social and technological contexts can erode intrinsic motivation by disrupting relatedness. Interventions should prioritize teacher attunement and targeted support for at-risk groups to foster inclusive, motivating environments.

### ***Motivational patterns in student procrastination and links to dropout risk in higher education***

**Presenting Author:** Judit Gabriella Sass, University of Pannonia, Veszprem, Hungary

#### **Abstract**

Academic procrastination - particularly passive, avoidance-driven delay, has been linked to maladaptive motivational patterns, negative affect, and increased vulnerability to dropout (e.g. Behr et al., 2020; Delgado-García et al., 2025). In a Hungarian higher-education context where attrition is a growing concern, it is important to identify motivational constellations that accompany different forms of procrastination and to translate them into differentiated early support interventions. This study integrates Self-Determination Theory (SDT) and contemporary distinctions between active and passive procrastination patterns to map motivational–procrastination profiles among first-year students at a Hungarian university. This in turn may inform an institutional early-warning approach to target interventions.

### ***Barriers to flow in online higher education students***

**Presenting Author:** Katie Kumasaka, Curtin University, Australia

#### **Abstract**

Disengagement and lack of motivation among students learning online in higher education is an enduring challenge that can undermine learning outcomes, retention, and overall student satisfaction. While engagement is widely recognized as essential to academic success, the unique conditions of the online learning environment, such as reduced interpersonal interaction, feelings of isolation, and competing external demands, often hinder meaningful participation and enjoyable experiences. This study in an Australian public University, applied flow theory to better understand the flow experiences of online students in initial teacher education. Qualitative data were collected through written reflections (n = 129), interviews (n = 8), and journaling with Interpretive Phenomenological Analysis framing interpretation of findings. The unique, reflective, and human sensitive methodology of phenomenology, encouraged a richer understanding of flow and offered insights to the internal and external stimuli which are barriers to flow in the online learning environment. The research highlighted how external factors, such as lack of time, resistance to distractions, and lack of authentic learning tasks prevented students experiencing flow, but also internal factors such as lack of interest and self-directed learning also inhibited flow. The implications for students and university educators are to encourage better awareness of distractions and how to focus attention, as well as the potential for dispersed assessment throughout a teaching period to foster more intrinsically motivated experiences, such as flow.

## Symposium 12: Challenges & promises of teacher self-efficacy and continuous professional learning in careers

**Organizer:** Emilie Carosin, University of Mons, Belgium

**Chair:** Emilie Carosin, University of Mons, Belgium

**Discussant:** Helen Watt, The University of Sydney, Australia

### Abstract

Teacher self-efficacy reflects beliefs about capabilities to engage students (Tschannen-Moran & Hoy, 2001) and can be supported by continuous professional learning (CPL) (Chang & Sung, 2024). Using samples from China, Belgium, France, and Australia, contributions explore how teacher self-efficacy and CPL interact to shape teaching quality and teachers' own motivation. The first study investigates how teaching self-efficacy influences students' academic interest through the mediating role of teaching quality (Tschannen-Moran & Hoy, 2001; Burić & Frenzel, 2023; Frenzel et al., 2012). Results draw on data collected amongst 232 teachers and 5,270 students. A multilevel structural equation model highlights the importance of professional learning opportunities in enhancing teaching quality and support provided to students throughout the school year. The second study focuses on second-career teachers in Belgian vocational education. Qualitative analysis of 18 semi-structured interviews reveals 1) personal, institutional and organizational on professional integration, as well as 2) intrinsic and extrinsic motivational contributing to teacher retention (Coppe et al., 2022; Tigchelaar et al., 2014). Results highlight complex dynamics in this process, especially the importance of self-efficacy via CPL at the beginning of their careers. The third study analyses how CPL relates to teacher wellness via self-efficacy. TALIS data from France and Australia suggest that CPL fosters self-efficacy as a function of needs-supplies fit (Núñez-Regueiro et al., 2024). Moreover, self-efficacy relates to optimal teacher wellness (e.g., enjoyment, job satisfaction, stay intention) when accompanied by a strong valuing of the profession, aligning with control-value theory (Pekrun, 2024). A theoretical integration is proposed.

### ***Teaching Self-Efficacy and Teaching Quality Increases Student Academic Interest***

**Presenting Author:** Hui Wang, The Education University of Hong Kong, Hong Kong

**Co-author(s):** Ying Chen, The Education University of Hong Kong, Hong Kong

### Abstract

Student interest is crucial to academic achievement. Teaching self-efficacy as an important indicator of teaching has been shown to be related to student academic interest. However, whether teaching quality functions as the mediating mechanism underlying this relationship remains underexplored. The current two-wave longitudinal study spanning a school semester examines the direct associations between teaching self-efficacy and students' academic interest, as well as the indirect effect of teaching quality from both teacher and student perspectives on the relationships between teaching self-efficacy and student interest. Data were collected from 232 teachers and their 5,270 students in China at the beginning and end of the school semester. Multilevel analyses revealed that teaching self-efficacy, particularly student engagement, was related to student interest at the start of the school semester. Additionally, teachers' self-efficacy in student engagement promoted autonomy support (from teachers' perspective) and student caring (from students' perspective), which in turn benefits students' interest concurrently and longitudinally. These findings shed light on the potential benefits of teachers' teaching self-efficacy in promoting teaching quality and further cultivating students' academic interests. The results provide practical implications for school interventions aimed at supporting teaching and student motivation, with a particular

emphasis on fostering teaching efficacy and enhancing autonomy support and student caring as adaptive teaching strategies for enhancing students' interest.

### ***Teacher self-efficacy promises to retain second-career teachers in French-speaking Belgium***

**Presenting Author:** Estelle Desablens, University of Mons - National Fund for Scientific Research (F. R. S. - FNRS), Belgium; Emilie Carosin, University of Mons, Belgium

**Co-author(s):** Sandrine Lothaire, University of Mons, Belgium; Marc Demeuse, University of Mons, Belgium

#### **Abstract**

Teacher attrition/retention is a growing issue worldwide “that represents two sides of a same coin” (Kelchtermans, 2017, p. 962). The problem is particularly acute in French-speaking Belgian vocational secondary education (Lothaire, 2021). As a result, recruitment pools have been extended to what is known as ‘second-career teachers’ (Coppe et al., 2022; Tigchelaar et al., 2014). Their entry into the profession is often described as a path fraught with pitfalls resulting in a high attrition rate (Coppe, 2022). The study investigates 1) the difficulties encountered during their professional integration (for ex. Job adjustments, professional support, class management, lesson planning, job insecurity), and 2) the factors that contribute to teacher retention (teacher self-efficacy, perceived value/utility, job satisfaction, ...). 18 semi-structured interviews were conducted with second second-career teachers (Mage=48, 44% women) working in secondary vocational education (teaching experience between 5 and 21 years). A qualitative analysis of the transcribed interviews was conducted using the NVivo software. Results following the coding of fragments highlight the complexity of the professional integration process that involve 1) individual (36.3% of fragments), organisational (46.6%), institutional (17.1%) difficulties, and 2) intrinsic (65.9%) and extrinsic (34.1%) retention factors. The results highlight the complexity of the professional integration, especially when second-career teachers enter with no pedagogical training. However, throughout their career participants reported having developed self-efficacy beliefs as professionals as well as a sense of value and utility. This study highlights the importance of professional support and policies that should be included to combat the shortage of teachers in French-speaking Belgium.

### ***Challenges and promises of teacher self-efficacy in supporting teaching careers***

**Presenting Author:** Fernando Nunez-Regueiro, Université Grenoble Alpes, France

**Co-author(s):** Helen Watt, The University of Sydney, Australia; Paul Richardson, Monash University, Australia; Herb Marsh, Australian Catholic University, Australia; Reinhard Pekrun, Australian Catholic University, Australia

#### **Abstract**

We present a study on the psychological conditions under which continuous professional learning (CPL) supports teacher wellness. THEORY: Although CPL is widely recognized as a lever for improving teaching quality, little is known about its potential role in enhancing teachers' own wellness, as defined by their degree of enjoyment, job satisfaction and intention to stay in the profession. We propose an integrative framework linking CPL and teacher wellness. In this framework, it is posited that the CPL may foster teacher control (e.g., self-efficacy beliefs) when actual supplies CPL meet individual needs for CPL (N-S fit); in turn, this sense of control will foster teacher wellness when it coincide with a strong valuing of the profession (C-V balance). AIMS: We examined how CPL needs and supplies combine to predict teachers' C-V processes, and how these processes in turn relate to teacher enjoyment, job satisfaction, and intention to stay. METHOD: Using nationally representative TALIS 2024 data from France (N = 2877) and Australia (N = 3035), we applied cubic response surface analysis to test nonlinear patterns of N-S fit and C-V effects. RESULTS: CPL supplies related positively to teacher self-efficacy only when they exceeded needs, with effects intensifying as misfit increased; in contrast, N-S fit did not relate to teacher value. Moreover, wellness

peaked when teachers felt both efficacious and perceived high social utility in teaching. SIGNIFICANCE: Integrating needs-supplis fit theory and control-value theory, the study delineates conditions under which CPL supports teacher wellness, informing efforts to address rising teacher attrition rates.

## Paper Session 19: Emotions, Curiosity, and Motivation in Learning Contexts

### Achievement emotions in CL: How do they relate to situational and general motivation?

**Presenting author:** Jasmiina Suoraniemi, University of Oulu, Finland

**Co-author(s):** Tiina Törmänen, University of Oulu, Finland; Hanna Järvenoja, University of Oulu, Finland; Eetu Haataja, University of Oulu, Finland; Annika Sulkala, University of Oulu, Finland, Finland

#### Abstract

Achievement emotions and motivation are deeply intertwined in learning, yet their dynamic interplay during authentic tasks remains underexplored. Drawing on Control–Value Theory (CVT) and Situated Expectancy–Value Theory (SEVT), this study investigates how secondary school students’ general motivational beliefs influence emotional interpretations and whether, achievement emotions shape situational motivation during a collaborative science task. Data were collected from 95 Finnish 8th graders (13–16 years) working in 31 small groups on a 90-minute water purification task. Students completed a pre-task questionnaire on general motivational beliefs, repeated situational self-reports on situational motivation at five time points during the task, and stimulated recall interviews on the reasons behind changing situational motivation immediately after the task. Interview data were deductively coded for emotional interpretations dimensions of valence, activation, and object focus. Cluster analysis identified profiles of general motivation, and nonparametric tests explored their association with emotional interpretations. Generalized Linear Mixed Models (GLMM) examined whether emotional dimensions predicted high or increasing situational motivation. Results show that three motivational profiles emerged (highly motivated, moderately motivated, not motivated), but these did not differ significantly in emotional interpretations. Valence alone strongly predicted situational motivation, whereas activation and object focus added no explanatory power. Findings highlight valence as a proximal driver of situational motivation and underscore the situative nature of motivation–emotion interplay in collaborative learning.

### Using a Large-Scale Online Discussion Dataset to Examine Situational Uncertainty and Curiosity

**Presenting author:** Farhan Ali, National Institute of Education/Nanyang Technological University, Singapore, Singapore

**Co-author(s):** Yehong Yang, Beijing Normal University, China; Jia-Hou Poh, National university of Singapore, Singapore

#### Abstract

Uncertainty is theorized to activate curiosity, yet evidence largely comes from laboratory and short-term classroom studies. This paper examines how curiosity unfolds collectively in naturalistic learning environments during extended periods of uncertainty. We introduce and validate a large-scale dataset of adolescent educational discussions from Singapore’s SGExams community (2019–2023; ~667,000 comments). Using question-posing as a behavioral indicator of curiosity, we compare two uncertainty regimes: predictable, high-stakes exam-related uncertainty and diffuse, global uncertainty during the COVID-19 pandemic. Macro-level analyses show that collective curiosity increases reliably during exam preparation and outcome periods, but less consistently during

COVID-19. These findings suggest that curiosity is most responsive to task-proximal, goal-relevant uncertainty rather than general uncertainty. Further, the dataset curated has many potential uses for investigating student motivation and emotion, and their dynamics over different timescales.

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### Achoo! Curiosity and Uncertainty Are Contagious in Online Educational Discussions

**Presenting author:** Farhan Ali, National Institute of Education/Nanyang Technological University, Singapore, Singapore

**Co-author(s):** Serena J.W. Wang, Nanyang Technological University, Singapore

#### Abstract

Curiosity and uncertainty are central to learning, yet they are typically studied as individual psychological states. This study examines whether both unfold socially through interactions in online learning contexts. Using a large-scale dataset from Singapore's largest student-driven educational forum (~39,000 posts; 667,000 comments, 2019-2023), we analyzed hierarchical parent-child comment exchanges in high-stakes exam preparation discussions. Curiosity was operationalized as question-posing using a validated 2x2 question taxonomy. Epistemic, decision, and future-oriented uncertainty were classified via a hybrid lexical-semantic classification approach. Negative binomial models revealed clear contagion effects for both constructs. Curiosity showed broad contagion: question-posing in one comment increased questioning in subsequent replies regardless of question type, suggesting socially generative inquiry processes beyond lexical mimicry. In contrast, uncertainty exhibited narrow contagion, with specific forms of uncertainty preferentially reproducing themselves across conversational turns. These findings advance theory by demonstrating that curiosity and uncertainty are interactionally distributed, likely mediated by different mechanisms, highlighting the social spread of motivation and emotion in high-stakes, peer-driven learning environments.

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### Lecturer enthusiasm and students' epistemic emotions: An experience-sampling study

**Presenting author:** Lena Kegel, University of Münster, Germany

**Co-author(s):** Maike Trautner, Marburg University, Germany; Lennard Buch, Marburg University, Germany

#### Abstract

Enthusiasm is an important lecturer characteristic associated with university students' achievement emotions. The present study explores whether lecturer enthusiasm is also related to epistemic emotions, which are characterized by an object focus on knowledge acquisition and generation. Using an experience-sampling design, we investigated the intraindividual association between lecturer enthusiasm and epistemic emotions in university students. We collected data from N = 101 students over a 14-day period, assessing students' perceived lecturer enthusiasm and epistemic emotions (enjoyment, surprise, curiosity, boredom, confusion, frustration, and anxiety) three times daily NESM = 855. Multilevel structural equation modeling revealed positive within-person relations of lecturer enthusiasm with enjoyment ( $\beta = 0.32$ , p

## Paper Session 20: Motivation, Mindsets, and Achievement Pathways

### Reciprocal Dynamics Between Perceived Teacher Support and State Academic Self-Concept Across Lessons

**Presenting author:** Mirna Šumatić, University of Luxembourg, Luxembourg

**Co-author(s):** Christoph Niepel, University of Luxembourg, Luxembourg

#### Abstract

Teachers are crucial figures in adolescents' academic lives, and teacher support is widely recognised as an important interpersonal factor that shapes engagement, learning and motivation. Academic self-concept (ASC) is established for its importance in students' academic outcomes, however, less is known about its association with students' perceptions of support. While longitudinal studies provide evidence of this association across wider time spans, there is a lack of studies showing how this association functions at the state-level, or across lessons. The present study, therefore, examined within-student dynamics in mathematics lessons using experience sampling. A sample of 372 German Grade 9 and 10 secondary students ( $M_{age} = 15.33$ ,  $SD = 0.68$ ) reported their momentary ASC and perceived teacher support after every mathematics lesson over three weeks. A multilevel first-order vector autoregressive Residual Dynamic Structural Equation Model (RDSEM) was specified to estimate autoregressive and cross-lagged paths, while accounting for time trends and individual variability. The results indicated that both perceived support and ASC showed significant stability from lesson-to-lesson, as well as significant reciprocal effects from one mathematics lesson to the next. The results highlight the importance of understanding state-level teacher support and ASC, and offer initial evidence for the reciprocal effects between these two constructs.

### Is Achievement Motivation a Privilege? The Social Gradient in Students' Achievement Motivation

**Presenting author:** Sarah Grünthal, University of Potsdam, Germany

**Co-author(s):** Lena Keller, Kiel University, Germany; Julia Kretschmann, University of Potsdam, Germany; Hanna Dumont, University of Potsdam, Germany; Martin Brunner, University of Potsdam, Germany

#### Abstract

Achievement motivation shapes students' academic success and influences their educational and career choices. Although students' socioeconomic status has been linked to motivation in school settings, systematic knowledge on this relationship remains limited. This study presents the first integrative data analysis on the association between SES and achievement motivation, using representative individual participant data from the Programme for International Student Assessment. The analysis included 3,581,655 15-year-old students, spanning four SES indicators, eight achievement motivation components, four academic domains, 92 countries, and two decades (2000–2022). A standardized analysis protocol was applied across cycles and countries, and results were synthesized using multilevel random- and mixed-effects models. The average social gradient, defined as the within-country regression coefficient between SES and achievement motivation, was  $\beta = .10$ , 95% CI [.09, .11], indicating a small but consistent association that remained significant, though attenuated, when adjusting for achievement. The social gradient strengthened over time but decreased following the outbreak of the COVID-19 pandemic, highlighting the sensitivity of motivational processes to periods of heightened social uncertainty and disruption. Among SES indicators, the number of books and educational resources at home showed stronger links with achievement motivation than parental education or occupational status. Moreover, component-specific patterns

emerged, with the strongest regression coefficients for self-efficacy. Taken together, these findings highlight the multidimensional and context-dependent nature of the relationship between SES and achievement motivation. While the mechanisms underlying these social disparities require further investigation, the results underscore that achievement motivation is embedded in—and shaped by—structural opportunities and constraints.

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### Children’s mindsets about their abilities: stability and contextual influences

**Presenting author:** Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

**Co-author(s):** Ilona Benneker, Mencia de Mendoza Lyceum, Netherlands; Nil Horoz, Vrije Universiteit Amsterdam, Netherlands; Fanny de Swart, Vrije Universiteit Amsterdam, Netherlands; Nikki Lee, Utrecht University, Netherlands; Marieke Buil, Vrije Universiteit Amsterdam, Netherlands

#### Abstract

The impact of a child’s mindset on their learning motivation and performance has been widely studied, but the stability of mindsets and the role of social context are less well understood. Study 1 (129 adolescent–parent dyads) examines the effect of parental beliefs and feedback on their adolescent’s mindset, including daily fluctuations. Study 2 explores the association of socio-economic status (SES) and teacher’s (N=44) mindset about a child’s reading and math abilities, and elementary school children’s (N=396) own mindset. Study 1 results showed that parents’ growth mindset, but not parents’ failure-is-enhancing belief, was positively related to their adolescents’ growth mindset. Furthermore, we found that although adolescents generally seemed to lean toward a fixed or growth mindset (trait component), their mindset also showed daily fluctuations (state component). Interestingly, these fluctuations were related to parental feedback: adolescents reported a stronger fixed mindset on days when they received more result-oriented feedback from their parents. Study 2 preliminary results show that SES relates to children’s mindset, but differently across domains. SES did not relate to teacher’s mindset about a child. Furthermore, teachers’ mindset about a child seems associated with achievement, but not with the child’s own mindset. Overall, results of both studies point to the important role of the social context in children’s learning motivation and performance; more specifically, the role of parental beliefs and feedback, SES and more tentatively teacher’s beliefs. These insights are important for better understanding how to nourish children’s growth mindset, to positively impact their motivation and performance.

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### Examining the Domain Specific Mediating Role of Growth Mindset Behaviours on Achievement

**Presenting author:** Dagmar Platte, Open University of the Netherlands, Netherlands

**Co-author(s):** Kate Xu, Open University of the Netherlands, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands

#### Abstract

Growth mindset theory suggests that students’ beliefs about intelligence influence their motivation, learning behaviours, and academic performance. While interventions promoting a growth mindset have demonstrated promising outcomes, their effectiveness remains inconsistent, potentially due to a lack of emphasis on translating beliefs into concrete behaviours. In this study we investigate the mediating roles of five mindset-related behaviours and intrinsic motivation in the relationship between growth mindset beliefs and academic achievement in mathematics and language among primary school students in the Netherlands. A sample of 421 students (aged 9–

13) completed questionnaires assessing growth mindset beliefs, motivation, and five aligned behaviours: embracing challenges, learning from mistakes, putting in effort, help-seeking, and self-monitoring. Results showed that mindset beliefs were significantly positively associated with all six proposed mediators in both mathematics and language domains. In mathematics, the direct association between mindset beliefs and academic achievement was non-significant, while the indirect effects were positive and significant through embracing challenges, learning from mistakes, and motivation. In contrast, for language, only embracing challenges showed a positive and significant indirect association with academic achievement. These findings provide insights for designing more effective mindset interventions. By bridging the gap between mindset belief and mindset-related behaviour, this research contributes to enhancing educational practices that foster both motivation and academic achievement.

## Paper Session 21: Teacher Beliefs, Classroom Practices, and Student Engagement

### Teacher mindset, teaching practices, and student mindset: Evidence from a national cohort study

**Presenting author:** Junlin Yu, University of Helsinki, Finland

**Co-author(s):** Pia Kreijkes, Cambridge University Press & Assessment, United Kingdom; Jennifer Symonds, University College London, Institute of Education, United Kingdom; Seaneen Sloan, University College Dublin, Ireland; Gabriela Martinez Sainz, University College Dublin, Ireland; Dymrna Devine, University College Dublin, Ireland

#### Abstract

This multi-informant study investigates the role of teachers as key socializers of primary school students' mindset beliefs. It examines how teachers' mindset and instructional practices—mastery- and performance-oriented practices, autonomy support, and differential treatment based on ability—relate to students' classroom perceptions and their own mindset. The study addresses four questions: How does teacher mindset relate to student mindset? How does teacher mindset relate to both self-reported and student-perceived practices? Which teaching practices are associated with student mindset? To what extent do teacher-reported practices align with student perceptions? Using a nationally representative sample of 2137 fourth graders (age 10) and their teachers from 125 classrooms in Irish primary schools, we employed multilevel structural equation modeling to investigate the relations among teacher mindset, teaching practices (both teacher-reported and student-perceived), and student mindset. Results indicate that teachers with a stronger growth mindset used fewer performance-oriented practices and had students who also reported a stronger growth mindset. Greater use of performance-oriented practices was associated with student perceptions of a stronger emphasis on performance and less autonomy support. Importantly, in classrooms where students shared a stronger perception of autonomy support from teachers, students reported a higher average growth mindset. At the individual level, student who perceived a stronger emphasis on performance relative to their classmates were less likely to endorse a growth mindset. These findings underscore the significance of teacher beliefs and practices in shaping students' growth mindset and suggest promising targets for teacher-focused interventions.

## Need-Supportive Teacher CARE: Development of a Multi-Dimensional Framework & Measurement Instrument

**Presenting author:** Stefan Markus, University of Wuppertal, Germany

**Co-author(s):** Fabian Schächt, Bergische Universität Wuppertal, Germany

### Abstract

Need supportive care is crucial for high-quality teacher-student relationships, students' emotions, and motivation. While Self-Determination Theory highlights competence, autonomy, and relatedness support, the Ethics of Care emphasizes relational responsiveness. Both frameworks, however, face limitations when applied in classrooms, as they either conceptualize care too broadly and operationalize it in overly unspecific ways, or rely on loosely structured descriptions of caring practices. This study integrates both perspectives into a multidimensional framework of need-supportive teacher care and introduces the CARE2 questionnaire, capturing nine theoretically derived facets across attitudes, actions, and reciprocity of need support. Adapted items from existing instruments were complemented with theory-based items; expert evaluations refined the item pool for the main study. Based on cross-sectional data from 1,714 German secondary school students, confirmatory factor analyses supported the correlated nine-factor model. Factor loadings were generally strong, although several dimensions were highly intercorrelated (especially between attitude and action in relatedness and competence support), reflecting the holistic nature of need support as documented in prior research. Most CARE2 subscales demonstrated satisfactory reliability and correlated positively with students' basic psychological need satisfaction and indicators of instructional quality, supporting convergent and concurrent validity. Discriminant validity was largely confirmed, although the distinction between internal states (attitudes) and external practices (actions) may be phenomenologically difficult to disentangle from students' perspectives. The CARE2 framework provides a structured instrument that not only synthesizes but also extends existing models of caring. Its fine-grained assessment may prove valuable for understanding the mechanisms through which caring relationships develop and influence student outcomes.

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## Students' Perceptions of Teacher Mindset and In-Class Experiences

**Presenting author:** Johannes Gale, University of Helsinki, Finland

**Co-author(s):** Junlin Yu, University of Helsinki, Finland; Elina E. Ketonen, University of Helsinki, Finland

### Abstract

Teachers' mindset beliefs and enthusiasm are known to shape students' vulnerability, sense of belonging, and satisfaction of competence, autonomy, and relatedness. However, little is known about how these teacher-related perceptions relate to students' in-class need satisfaction and mindset development during instruction. This study investigates how students' perceptions of their teachers' mindset beliefs and enthusiasm shape students' in-class motivation by using experience sampling in first-year high school physics instruction. A total of 172 students provided 765 in-the-moment reports after lessons, rating their experiences of competence, autonomy, and relatedness. Pre- and post-course surveys assessed perceived teacher enthusiasm, perceived teacher mindset, student mindset, intrinsic motivation, and STEM aspirations. Multilevel modelling was applied to distinguish how between-student differences in (teacher-related) perceptions were related to basic psychological needs across lessons. Students who perceived their teacher as more enthusiastic than other students reported consistently higher in-class competence, autonomy, and relatedness. Perceptions of teacher growth mindset were associated

with higher relatedness, whereas students entering the course with a more fixed mindset experienced lower competence during lessons. Competence experiences predicted greater intrinsic motivation and lower fixed mindset after the course. In-class need satisfaction measures did not predict post-course STEM aspirations. These results highlight competence as a key motivational process linking students' psychological needs experiences to beliefs about intelligence. The findings underscore the role of perceived teacher enthusiasm and mindset in shaping psychologically supportive learning environments.

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## Teachers' reactions to student agentic engagement: An experimental vignette study

**Presenting author:** Eta Krpanec, Institute of Social Sciences Ivo Pilar, Croatia

**Co-author(s):** Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Daphne van den Bogaard, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium

### Abstract

Educational research has increasingly emphasized student voice and agency. Within self-determination theory it is conceptualized as agentic engagement, defined as students' contributions to the quality of instruction they receive. Prior research demonstrates reciprocal associations between agentic engagement and autonomy-supportive teaching, but this evidence largely relies on students' self-reports, leaving teachers' perspectives underexplored. Emerging findings suggest teachers' responses to agentic requests can be negative. It also indicates that vary depending on characteristics of the request and the students, including whether engagement occurs individually or collectively and whether engagement comes from usually engaged or disengaged students. This study examined teachers' responses using a vignette-based experimental design. A sample of 224 Croatian teachers was randomly assigned to one of four conditions in a 2x2 design manipulating the origin of the request (individual vs. group) and students' engagement level (high vs. low). Teachers evaluated the likelihood of accepting requests and reported anticipated responses (autonomy-supportive, structuring, controlling, or chaotic) across three vignettes. MANOVA revealed a significant effect of collective versus individual agentic engagement. Teachers were more likely to accept requests from groups and respond with autonomy-supportive and structuring practices, whereas individual requests elicited more chaotic responses. Students' engagement level had no significant effect, and no interaction emerged. These findings highlight the importance of collective agentic engagement and suggest group dynamics play a key role in shaping teachers' openness to student agency. The study contributes to understanding teachers' perspectives on agentic engagement and informs future research on social and contextual factors influencing agentic processes in classrooms.

## Paper Session 22: Emotional Dynamics and Well-Being in Education

### The Role of the Interaction Between Negative Affect Instability and Inertia in Predicting Well-Being

**Presenting author:** Dmitry Lyusin, HSE University, Russian Federation

**Co-author(s):** Andrey Pushnikov, HSE University, Russian Federation

#### Abstract

Affect dynamics refers to changes in emotions or their components over time. Two key parameters of affect dynamics are instability (the abruptness of moment-to-moment affective changes) and inertia (the persistence of an affective trend). Previous studies have shown that each indicator is negatively associated with human well-being. It can be hypothesized that their interaction is also negatively associated with well-being, as it reflects a person's tendency to experience sharp spikes in negative affect and its slow recovery to the original level. The purpose of the study was to test this hypothesis using pooled data from 13 experience-sampling datasets (N = 1,247 participants) from the EMOTE database. While instability and inertia were found to be significant predictors of well-being, their interaction was not. This result suggests that in the future it is necessary to focus on the within-episode affect dynamics and analyze indicators of reactivity and recovery that reflect changes in affect related to emotional events.

### Motivation and Emotional Transitions of Career-Change Teachers in Master's Programs

**Presenting author:** Kseniia Tsitsikashvili, the National Research University Higher School of Economics, Russian Federation

#### Abstract

Career-change teachers are individuals who enter teaching after completing a bachelor's degree and pursuing professional experience in another field, who have gained increasing attention in international research and policy debates, particularly in response to persistent teacher shortages intensified by labor-market disruption and post-pandemic uncertainty. While career-change pathways are often promoted as pragmatic solutions to workforce needs, their sustainability depends on how motivation and emotion are experienced during professional transition. Existing research demonstrates that decisions to enter teaching are shaped by a combination of pragmatic, altruistic, and personal motives, which are frequently articulated in contexts of uncertainty and career dissatisfaction. Also, career-change teachers encounter distinctive emotional challenges, including identity disruption, loss of expert status. Addressing calls for more context-sensitive empirical research, this study examines motivation and emotional meaning-making among career-change students entering a master's-level teacher education program in Russia. The study is grounded in Self-Determination Theory, which conceptualizes motivation as a continuum of intrinsic, altruistic, and extrinsic orientations, and in research on teacher professional identity, emphasizing emotionally charged processes of identity reconstruction during career transition. Empirical data were collected through semi-structured interviews with 36 career-change students enrolled in a pedagogical master's program at the Institute of Education, HSE University. Using thematic analysis, the study explores how motivational configurations are shaped by emotions and experiences of uncertainty at the point of entry into teacher education. The findings contribute to international discussions on affective dynamics in professional choice, with implications for teacher education policy, program design, and support for career-change entrants.

## Impostor Phenomenon in Education: A Meta-Analysis of Students' Psychological Health and Functioning

**Presenting author:** Ying Ma, Australian Catholic University, Australia

**Co-author(s):** Jiesi Guo, Australian Catholic University, Australia; Johnmarshall Reeve, Australian Catholic University, Australia; Hye-Ryen Jang, Institute for Positive Psychology and Education, Australian Catholic University, Australia

### Abstract

As a perceived fraudulence despite objective evidence of competence, the impostor phenomenon (IP) is prevalent among students and linked to psychological outcomes, yet evidence remains fragmented, with outcomes often treated as undifferentiated. This meta-analysis examined IP in relation to students' psychological health and functioning, distinguishing well-being versus ill-being and adaptive versus maladaptive functioning. A search identified 150 independent studies with 496 effect sizes. All analyses used effect sizes harmonized so higher values reflected better well-being and more adaptive functioning; pooled associations are interpreted by magnitude, with remaining associations reported in their original directions. Three-level random-effects models synthesized associations. Overall, IP was moderately associated with poorer psychological outcomes ( $r = -.31$ ), with stronger associations for psychological health ( $r = -.36$ ) than functioning ( $r = -.25$ ). Within domains, associations were stronger for ill-being ( $r = .41$ ) than well-being ( $r = -.18$ ), and for maladaptive functioning ( $r = .37$ ) than adaptive functioning ( $r = -.18$ ). Moderation was limited, with no consistent effects of IP measurement type, geographic region, or racial composition. In contrast, the IP–ill-being association increased with female proportion and varied by subject area, with a stronger association in multidisciplinary samples ( $r = .50$ ) than in the social, health, and natural/engineering sciences. Educational stage moderated the IP–well-being association, with a stronger association in mixed samples ( $r = -.39$ ) than in undergraduate and graduate samples. By distinguishing psychological health from functioning, this meta-analysis clarifies the psychological profile associated with IP and informs more targeted educational and psychological interventions.

## Short-term joy and long-term anxiety – Relation of goal conflict and synergies with faculty emotions

**Presenting author:** Johanna Ott, University of Augsburg, Germany

**Co-author(s):** Markus Dresel, University of Augsburg, Germany; Martin Daumiller, University of Freiburg, Germany; Ronja Steinhäuser, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany; Oliver Dickhäuser, University of Mannheim, Germany

### Abstract

University faculty often pursue research and teaching goals simultaneously, which can lead to goal conflicts or synergies that shape emotional well-being. Goal conflict typically undermines well-being, while synergy enhances it. We conducted a 14-day diary study with 176 faculty members (1,370 workdays) to examine daily associations between goal conflict, goal synergy, and affective states. Each morning, participants identified three work goals, stated their domain affiliation and self-determination in goal setting; each evening, they rated goal conflict, synergy, and emotions. Multilevel structural equation modeling revealed that, at the within-person level, goal synergy predicted joy and pride, while goal conflict predicted frustration. At the between-person level, higher overall goal conflict correlated with anger, anxiety, frustration, and nervousness, whereas higher goal synergy unexpectedly related to anxiety, shame, and boredom alongside pride. A greater proportion of research-related goals was linked

to less joy and more negative emotions. Self-determined goal setting was positively associated with joy on both levels. Findings suggest that while goal conflict consistently harms emotional well-being, goal synergy may have ambivalent effects, possibly reflecting hidden costs such as underlying pressure and complex dynamics in academic work. Future research should examine which goals are seen as synergistic, whether different synergy types explain emotional differences, and explore their long-term impact on well-being. Interventions should prioritize fostering self-determined goal setting rather than merely increasing perceived synergy.

## Paper Session 23: Motivation in Science-Related Learning Pathways

### Motivational Quantity and Quality: Profiling Test-Taking Motivation in a Low-Stakes Math Assessment

**Presenting author:** Daphné Van Looy, Ghent University, Belgium

**Co-author(s):** Amélie Rogiers, Ghent University, Belgium; Carolien Frijns, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium; Johan van Braak, Ghent University, Belgium

#### Abstract

Test-taking motivation is a critical yet often overlooked factor in the interpretation of large-scale assessment results. While most research focuses on the amount of motivation students display, considerably less is known about why students engage in test-taking. Grounded in Self-Determination Theory, this study adopts a person-centred approach to examine profiles of test-taking motivation among 5881 eighth-grade students participating in a central low-stakes mathematics assessment in Flanders. Using hierarchical and K-means cluster analyses based on intrinsic, identified, introjected, and external motives, four distinct motivational profiles were identified and characterized by both the amount (high- vs. low-motivated test takers) and the quality (autonomously vs. controlled motivated test takers) of motivation. Boys were overrepresented in the low-motivated profile compared to girls. Students' motivation for mathematics informed their test-taking motivation profile, which in turn was associated with test anxiety and test performance, independent of background characteristics and domain-specific mathematics motivation. Autonomously motivated and low-motivated test takers reported the lowest levels of test anxiety, whereas controlled and highly motivated test takers reported the highest levels. Overall, motivational profiles were more strongly associated with test anxiety than with test results, with motivational quality playing an important role in explaining lower levels of test anxiety. Taken together, the findings demonstrate that quantitatively and qualitatively different motivational patterns are associated with different outcomes. The results and their implications for research, policy and practice will be discussed during the paper presentation.

### Affecting interest in mathematics: open problems, prior interest, and intrinsic motivation

**Presenting author:** Stanislaw Schukajlow, University of Münster, Germany

**Co-author(s):** Janina Krawitz, University of Cologne, Germany; Katrin Rakoczy, University of Gießen, Germany

#### Abstract

The types of problems and students' prior interest in mathematics are assumed to play an important role in fostering intrinsic motivation and interest. In particular, real-world problems with an open initial state require students to make assumptions about missing information and thus provide autonomy during the solution process. According

to self-determination theory and interest theory, such autonomy-supportive learning environments are central for the development of students' intrinsic motivation and interest. The present study examined the effects of instruction in solving open versus closed problems on students' posttest interest in mathematics, focusing on intrinsic motivation during learning as a mediating mechanism and considering the role of prior interest. The participants were 295 lower-secondary school students who were randomly assigned to one of two instructional conditions. Each condition received instruction across four 45-minute lessons, focusing either on solving open or closed problems. Students' interest in mathematics was assessed before and after the intervention, and intrinsic motivation was measured during the instruction. The path analysis showed that instruction in solving open problems positively predicted students' posttest interest. Both instruction in solving open problems and students' prior interest positively predicted intrinsic motivation during learning, which in turn was positively associated with posttest interest and mediated the effects of both instructional condition and prior interest. The results support the assumptions of self-determination theory and interest theory by emphasizing the key role of intrinsic motivation. The types of problems used and students' prior interest are two important factors that contribute to motivation in mathematics.

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## Motivation Matters: What Drives Competition Participation in Middle-School Students?

**Presenting author:** Vivien Rieder, Heidelberg University, Germany

**Co-author(s):** Lorena Fleischmann, Heidelberg University, Germany; Birgit Spinath, Heidelberg University, Germany

### Abstract

Participation in student competitions represents a key pathway of talent development for adolescents, yet many qualified students do not take advantage of these opportunities. Drawing on situated expectancy–value theory, this study examines motivational correlates of participation in competitions across domains (languages vs. STEM). Data were collected from 666 middle-school students in grades 7 and 8. Students reported their competition participation, expectancy beliefs, motivational values (intrinsic, attainment, utility), perceived costs (effort, social, psychological), and sociodemographic characteristics. Logistic regression analyses were used to examine associations between motivational components and competition participation, with gender tested as a moderator. Across domains, perceived effort costs were consistently associated with a lower likelihood of competition participation, while expectancies and motivational values showed no consistent associations. At the domain level, social costs were negatively associated with participation in language competitions, whereas psychological costs showed a positive association. Moderation analyses revealed gender-specific patterns: For language competitions, the positive association between psychological costs and participation was observed only among girls. In STEM competitions, intrinsic value was positively associated with participation only among boys, while the association between social costs and participation showed opposite directions for boys and girls. Overall, the findings highlight the central role of motivational costs and suggest that motivational mechanisms underlying competition participation differ by domain and gender.

## Who Persists and Why: Identity, Agency, and Structure in STEM Transfer Pathways

**Presenting author:** Jenefer Husman, University of Oregon, United States

**Co-author(s):** Wen-Ting Chung, University of Oregon, United States; Matthew Graham, University of Oregon, United States; Dean Livelybrooks, University of Oregon, United States

### Abstract

This qualitative study examined how community college students in the United States who transferred to a university to major in science made meaning of their transition. Ten students from a university transfer-support program participated in multiple interviews, primarily conducted before and after transfer, incorporating a McAdams-style life story protocol along with questions focused on their transfer experiences. The transcripts were analyzed using Interpretative Phenomenological Analysis. Students reported transfer shock, but trajectories diverged. On-track students (who retained financial support and maintained strong academic records) tended to narrate challenges agentically, framing setbacks as growth opportunities and leveraging resources to shape evolving identities and career aspirations. In contrast, Science-persisting students (who remained in their major but lost financial support due to academic difficulties) and the transitioned-out student (who left the university) more often described barriers as externally imposed. Financial support and future-oriented advising provided a sense of security, while demanding coursework constrained engagement in professional opportunities beyond the formal curriculum. Overall, the findings suggest that pre-transfer identity strength—developed through prior self-exploration and struggle—serves as a key motivational asset. The results also highlight identity agency as an important motivational resource during the transfer process.

## Paper Session 24: Reading Emotions, Self-Efficacy, and Assessment

### Reading anxiety's associations with reading skills and interest from second to third grade

**Presenting author:** Shengyun Cui, University of Jyväskylä, Finland

**Co-author(s):** Daria Khanolainen, University of Jyväskylä, Finland; Tuire Koponen, University of Jyväskylä, Finland; Jenni Salminen, University of Jyväskylä and University of Stavanger, Finland; Minna Torppa, University of Jyväskylä, Finland

### Abstract

To support literacy acquisition, abundant research has focused on cognitive predictors. However, reading processes also involve affective factors. The present study explored a largely overlooked phenomenon—reading-related anxiety and its longitudinal associations with reading skills and reading interest among a sample of 790 Finnish children followed from Grade 2 to Grade 3. The 2-wave assessments administered in the classrooms included the children's self-reported reading anxiety and reading interest, followed by reading fluency skills tests in Grade 2 and Grade 3. Multiple regressions were conducted with thorough investigations on potential model biases. The results showed that having poorer reading fluency in Grade 2 predicted experiencing higher reading anxiety in Grade 3. Poorer reading was also associated with subsequent lower reading interest, particularly among girls. The separate gender group analyses found that reading interest supported girls against developing anxiety in reading. The results suggest that the developmental associations between reading skills, interest, and anxiety emerge early on and that to prevent reading anxiety, both reading skills and interest can be useful targets.

## Building or Breaking Confidence? Sources of Reading Self-Efficacy Among Struggling Readers

**Presenting author:** Pilvi Peura, University of Jyväskylä, Finland

**Co-author(s):** Tuija Aro, University of Jyväskylä, Finland; Jaeyun Han, University of Chicago, United States; Ellen Usher, Mayo Clinic, United States; Heidi Korpipää, University of Jyväskylä, Finland; Mikko Aro, University of Jyväskylä, Finland

### Abstract

Children with difficulties in reading are often characterized as having lower reading related self-beliefs and more negative learning experiences in reading compared to their typically achieving peers. However, substantial individual variation in learning experiences and self-beliefs within this group may be overlooked when focusing solely on group-level differences. Similarly, we know little how reading related self-beliefs are formed within this group of children. In social cognitive theory, four sources of self-efficacy are theorized to build reading related self-efficacy. In this study, we broaden earlier research by examining not only efficacy-building experiences (mastery experiences, positive verbal persuasion and positive emotional states) but also potentially efficacy-lowering experiences (failure experiences, negative persuasion and negative emotional states) in reading. Participants were 358 Grade 3–4 primary school children with reading difficulties. First, we investigated how efficacy-building and efficacy-lowering experiences were associated with reading self-efficacy. Second, focusing on individual differences, we examined whether diverse profiles of sources of self-efficacy are formed using LPA and studied these profiles' associations to children's reading self-efficacy. Overall, there was significant variation in both reading self-efficacy and its sources as well as in the association between the sources and self-efficacy. Moreover, the profiles reflected individually varying combinations of sources of self-efficacy, showing both adaptive and maladaptive profiles. The findings highlight that individual variation within low performing readers' learning experiences and self-beliefs should be considered when planning support for children who struggle with reading.

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## The Read To Me Checklist: Supporting motivation in oral reading assessment and feedback

**Presenting author:** Karianne Megard Grønli, University of Stavanger, Norway

**Co-author(s):** Bente Walgermo, University of Stavanger, Norway; Per Henning Uppstad, Norwegian Reading Center, Norway; Erin Margaret McTigue, University of Stavanger, Norway

### Abstract

This study examines how the Read To Me Checklist can support teachers' assessment and feedback practices in early reading instruction. When young students learn to read, they often read aloud and receive guidance and feedback from their teachers. Research shows that in these crucial moments, teachers' feedback tends to center on technical aspects of text reading, while overlooking factors that support reading motivation and meaning-making. Grounded in research on reading as an interpretative skill, student-centered feedback, and student agency, the aim of this study was to examine whether the Read To Me Checklist can support more agentic and motivationally responsive assessment and feedback practices in oral reading, and whether such changes are associated with increased student agency. The study employed a mixed-methods, within-subjects pre-post design involving 52 primary school teachers from nine Norwegian schools. Teachers assessed and provided feedback on two oral reading cases before and after the intervention. Student outcomes were examined in a subsample using self-report measures of reading-related agency. Quantitative analyses revealed significant increases in teachers' focus on motivation and comprehension in assessment and suggested feedback, while attention to decoding remained stable. Implicit and student-centered feedback strategies increased significantly, whereas explicit corrective

feedback showed no decrease. Student self-reports indicated small but significant gains in persistence and intentionality. Qualitative analyses of teachers' reflections supported these findings. Overall, the results suggest that a low-cost, checklist-based intervention can meaningfully reshape feedback practices in oral reading and support motivationally relevant dimensions of student agency.

## Effects of dialogic feedback on secondary school students' writing expectancy and value perceptions

**Presenting author:** Jan-Sébastien Dion, Université de Sherbrooke, Canada

**Co-author(s):** Stéphane Duchesne, Université Laval, Canada; Jonathan Smith, Université de Sherbrooke, Canada

### Abstract

Monologic feedback, i.e. information communicated to students about the quality of their work and ways to improve it, is considered an effective practice for supporting learning progression. However, its effects do not always meet expectations. Students may misinterpret feedback, dismiss it due to negative emotions, or struggle to apply it. To address these limitations, education researchers and practitioners have shown increasing interest in a feedback approach that takes the student perspective into consideration. Dialogic feedback responds to this intention by emphasizing two-way communication, enabling to verify students' cognitive and behavioral understanding, and to mitigate negative emotions when necessary. This approach also makes feedback more actionable and fosters positive teacher-student interactions, thereby increasing the likelihood that students will use feedback effectively. A key question nonetheless remains: does dialogic feedback actually motivate students and, if so, in which dimensions does it operate? To answer these questions, we trained 8 L1 French teachers in 4 secondary schools in the province of Quebec, Canada, to implement a dialogic feedback intervention in selected classes. All of their students (12-14-year-olds), including both those who received dialogic feedback and those who did not, are being surveyed (three times) to identify changes in their perceptions of their abilities and the value of writing activities, with a comparison aim. This presentation will offer a first insight into the effects of dialogic feedback on students' writing expectancy and value perceptions. Findings will be interpreted in light of the limited available evidence, and practical implications will also be discussed.

## Paper Session 25: Measuring Emotions, Self-Regulation and Motivation

### Mapping the Core of Self-Compassion Across Four Measures

**Presenting author:** Ramona Schöne-Hoffmann, Universität des Saarlandes, Germany

**Co-author(s):** Veronika Ploke, Karl Landsteiner Privatuniversität für Gesundheitswissenschaften, Austria; Dorota Reis, Universität des Saarlandes, Germany; Franziska Perels, Universität des Saarlandes, Germany

### Abstract

Self-compassion is understood as compassion toward one's own suffering, involving tolerating uncomfortable feelings and the recognition that difficulties are part of a shared human experience (common humanity). Beyond its relevance for mental health, self-compassion is important in academic contexts, where it promotes adaptive responses to mistakes. In times of heightened uncertainty—marked by fluctuating emotional demands and changing educational conditions—it may serve as a stabilizing affective resource. Previous research shows that

self-compassion buffers failure-related distress and fosters adaptive engagement. Despite its application, the construct's conceptualization and operationalization remain debated. Multiple instruments exist, reflecting different theoretical frameworks, necessitating systematic comparison. Therefore, the aim of this contribution is to compare four major scales in an academic sample using Item Pool Visualization (IPV) to identify facets most closely aligned with the latent core. Data from  $N = 416$  university students were analyzed (78.1% female,  $M = 23.53$ ,  $SD = 4.60$ ). Participants completed the Self-Compassion Scale (SCS), Compassionate Engagement and Action Scales (CEAS), Sussex-Oxford Compassion for the Self Scale (SOCS-S), and Compassionate Motivation and Action Scales (CMAS). A general factor model was estimated across all items, and subscales were evaluated using their distance to the core factor. Results of the IPV show that all instruments assess related constructs, with the SOCS-S demonstrating the closest alignment to the core. Common Humanity, tolerance of uncomfortable feelings, and compassion toward one's own suffering emerged as the most central facets. These findings refine the assessment of academic self-compassion and highlight its value as an affective resource.

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## A PRISMA-COSMIN review of anger regulation instruments for adolescents

**Presenting author:** Fernanda Guedes, University of Beira Interior, Portugal

**Co-author(s):** Cláudia Silva, University of Beira Interior, Portugal; Ludovina Ramos, University of Beira Interior, Portugal

### Abstract

Assessment of anger regulation in adolescents is conceptually and methodologically inconsistent, with anger frequently conflated with related constructs such as aggression or hostility. Although assessing anger regulation is a crucial step for effective psychological intervention, there is limited guidance available on which instruments demonstrate adequate measurement properties for this population. This systematic review aimed to identify current instruments used to assess anger regulation in adolescents and to evaluate the validity and reliability of these tools. Searches were conducted in Scopus, Web of Science, PubMed, SciELO, and LILACS. Studies written in Portuguese, Spanish, or English were included if they reported measurement properties of anger regulation instruments adapted for adolescents. The COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) was used for risk of bias assessment and results rating. The GRADE approach was applied to determine the quality of evidence. A total of 17 reports and 16 instruments were included. Structural validity and internal consistency were the most frequently reported measurement properties. Most of the instruments (56.25%) were considered to have potential for recommendation. Overall, measures have been examined with respect to a limited number of measurement properties and studies. Further psychometric studies are needed to establish stronger and more comprehensive evidence for these instruments. Until such evidence becomes available, the use of anger regulation measures should be interpreted with caution.

## Primary School Math Motivation: Cross-National Validation of the Revised Expectancy–Value Scale

**Presenting author:** Francisco Peixoto, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

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### Abstract

Reliable measurement of motivational beliefs in middle childhood is essential for understanding early trajectories in mathematics engagement and for evaluating interventions. Situated Expectancy–Value Theory (SEVT) highlights multiple value components (intrinsic, attainment, utility) as well as cost, yet cost is often difficult to assess in younger students. This study refined, revised and validated the Expectancy–Value Scale (EVS) for primary students' mathematics motivation, with particular attention to improving the cost component. Participants were 12,997 students in six European countries (Estonia, Finland, Norway, Portugal, Serbia, Sweden) assessed at two waves one year apart (Year 3–4 at Wave 1). In Study 1, the sample was split to conduct ESEM (half 1) and CFA (half 2), resulting in a 25-item, five-factor solution (intrinsic value, attainment value, utility value, cost, perceived competence) with adequate fit. However, convergent and discriminant validity for cost were weaker than for other dimensions, motivating refinement. In Study 2, two additional cost items were tested and the cost set was optimized (five items balancing effort- and opportunity-cost content), yielding a well-fitting 25-item scale with improved convergent validity and reliability. Scalar invariance across country, gender, and grade supported meaningful group comparisons. Associations with enjoyment and achievement followed SEVT expectations (positive for perceived competence and values; negative for cost), and one-year correlations indicated moderate stability. The Revised Expectancy–Value Scale (R-EVS) provides a psychometrically robust tool for early identification of motivational strengths and vulnerabilities in mathematics.

## From Concepts to Measurement: Teachers' Emotion-Motivation Knowledge

**Presenting author:** Christine Feiss, University of Teacher Education St.Gallen, Switzerland

**Co-author(s):** Selina Bühler, University of Teacher Education St.Gallen, Switzerland; Valeria Signer, University of Teacher Education Thurgau, Switzerland; Benita Affolter, University of Teacher Education Thurgau, Switzerland; Sonja Büchel, University of Teacher Education St. Gallen, Switzerland

### Abstract

Professional teaching is significantly shaped by emotional-motivational processes, which influence both teachers' experiences and the quality of teaching-learning processes (Frenzel et al., 2021; Pekrun, 2006). Yet teachers' knowledge in these areas remains largely unsystematized and insufficiently operationalized. This study addresses this gap by theoretically conceptualizing emotion- and motivation-related knowledge as integrated knowledge of emotional and motivational processes in teaching, learning, and social interactions. For empirical assessment, this knowledge is structured into three content areas (emotions, motivation, their interaction) and two cognitive demand levels (remembering/retrieving, understanding/applying). The central research question examines whether this knowledge can be reliably and validly modeled and empirically measured across these dimensions. A test

instrument was developed based on this conceptualization and piloted with pre-service teachers (N≈100) and practicing teacher (N≈20). Psychometric evaluation uses Item Response Theory. We expect to find that the three content areas and two cognitive levels are empirically distinguishable, and theory-driven validity assumptions will be supported. This study contributes to the theoretical foundation of this critical competence area and offers a verifiable instrument, opening new avenues for research on the interplay of professional knowledge, emotions, and motivation in teaching, while offering a diagnostic tool for teacher education.

## Paper Session 26: Parental Practices and Child Adjustment

### Young adults' narratives of parental support during their school path

**Presenting author:** Arto Lehtola, University of Jyväskylä, Finland

**Co-author(s):** Miia Sainio, University of Jyväskylä, Finland; Tanja Vehkakoski, University of Jyväskylä, Finland; Noona Kiuru, University of Jyväskylä, Finland; Kati Vasalampi, University of Jyväskylä, Finland

#### Abstract

Young people's mental health is shaped by the interplay of developmental contexts, with early parenting experiences—both adverse and supportive—having lasting effects. Yet, how young adults narratively integrate these early relational experiences into their evolving narrative identities remains less understood. This study aims to address this research gap by asking how young adults position their parents and themselves when narrating parental support during their school path. The research data consists of interviews with thirty-three young adults (18 women, 14 men, and one "other" gender) aged 22–23. The data were analyzed narratively using Bamberg's Positioning Theory. The results revealed five distinct narrative types which positioned parents in the following ways: (1) Parents who have supported their child emotionally, (2) Parents who have advocated for their child, (3) Parents who have nudged their children related to schooling, (4) Parents who have pressured their child, and (5) Parents who have ignored their child. The results emphasize the need for tailored support that integrates parental involvement, school collaboration, and young people's agency in learning and wellbeing.

### Contingent Self-Esteem as a Mediator between Parental Academic Conditional Regard and School Burnout

**Presenting author:** Ziwen Teuber, University of Luxembourg, Luxembourg

**Co-author(s):** Nora Vitali, University of Luxembourg, Luxembourg; Guy Roth, The Ben-Gurion University of the Negev, Israel; Theresa Dicke, Australian Catholic University, Australia

#### Abstract

Contingent self-esteem (CSE) denotes evaluations of self-worth based on external factors. In academic settings, high CSE reflects reliance on performance outcomes and feedback, and is linked to negative psychological and academic outcomes. Parenting practices play a central role in shaping self-esteem in adolescence. One key contributor to CSE is parental academic conditional regard: expressing warmth or approval contingent on children's fulfillment of parental academic expectations. This study examined whether CSE mediates the link between parental academic positive conditional regard (PACPR) and school burnout using longitudinal data from Luxembourg, an understudied population so far. Latent change score models were performed in Mplus 9 (CLUSTER

burnout while promoting adaptive parenting. This study examined longitudinally whether parental burnout mediates the relationship between parental grit and adolescent adjustment. Data were drawn from a three-wave longitudinal study including 1,373 U.S. parents of adolescents in Grades 6–9 (M<sub>age</sub> = 42.83, SD = 9.38). A cross-lagged panel model showed good fit ( $\chi^2(328) = 993.95, p < .001$ ; CFI = .96; RMSEA = .04, 90% CI [.04, .04]; SRMR = .06). Higher levels of parental grit predicted lower levels of parental burnout ( $\beta = -.06, p = .01$ ), and vice versa ( $\beta = -.10/-.11, p < .001$ ). Higher levels of parental burnout were associated with more adolescent internalizing problems ( $\beta = .24, p < .001$ ). Mothers showed higher levels of parental grit than fathers ( $\beta = .09, p = .001$ ). Parents of children with disabilities reported lower levels of parental grit ( $\beta = -.07, p = .02$ ) and higher levels of burnout ( $\beta = .16, p < .001$ ). The findings suggest that parental grit may buffer against burnout and highlight the importance of parental well-being for child development.

## Paper Session 27: Teacher Discourse, Instructional Quality, and Student Motivation

### Emotions in teacher engaging messages: Their interplay with student outcomes

**Presenting author:** Samuel Falcon, University of Atlántico Medio, Spain

**Co-author(s):** Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Jaime J Leon, ULPGC, Spain

#### Abstract

This study examines how teachers' emotional prosody in engaging messages relates to students' motivation and academic performance. We analysed 353 audio-recorded messages from 55 secondary school teachers using an AI-based speech emotion recognition tool. Each message was classified according to its frame (gain vs. loss) and motivational appeal (autonomous vs. controlled). Then, we performed a latent profile analysis to identify patterns of emotional expression. Across all message types, two profiles emerged: low and high emotional prosody. Low emotional prosody in gain-framed messages was linked to higher student motivation, whereas high emotional prosody in loss-framed messages was linked to better academic performance. These findings show that the impact of teachers' emotional delivery may depend on how messages are framed. A calm tone, not too intense in the expression of emotions, may help in motivating students when hearing positively framed messages. On the other hand, a more emotionally expressive tone may strengthen both motivation and performance in loss-framed ones. By combining natural classroom recordings with AI-based emotion analysis, this study provides new evidence on how teachers' discourse conveys emotion in everyday teaching. The results point to practical implications for teacher education, suggesting that awareness and regulation of emotional tone can improve how engaging messages support motivation and performance.

### Motivational Beliefs as Predictor or Outcome of Instructional Quality?

**Presenting author:** Charlott Rubach, University Rostock, Germany

**Co-author(s):** Luise von Keyserlingk, University of Tuebingen, Germany; Jacquelynne Eccles, University of California, Irvine, United States; Jutta Heckhausen, University of California, Irvine, United States

#### Abstract

The SEVT (Eccles & Wigfield, 2020) posits that students' motivational beliefs emerge from learning environments but also actively guide how students make sense of learning environments. However, little knowledge exist on how motivational beliefs influence students' ratings of instructional quality and its differs by motivational belief and

dimension of instructional quality. Addressing this research gap, we used data from 1,745 undergraduates from a public U.S. university. Single trait-multistate models indicated that students with higher interest value and expectancy for success rated instructional quality higher. The correlations of both motivational beliefs were overall stronger for ratings of cognitive activation than for ratings of classroom organization and student support. In summary, these results suggest that motivational beliefs are not merely shaped by instructional quality, but actively guide how students interact with learning environments.

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### Teacher fulfilment and student sense of relatedness: The role of emotion in teacher discourse

**Presenting author:** Samuel Falcon, University of Atlántico Medio, Spain

**Co-author(s):** Elisa Santana Monagas, University of Las Palmas de Gran Canaria, Spain; Maria Esther Rodriguez-Gil, University of Las Palmas de Gran Canaria, Spain; María Nayra Rodríguez-Rodríguez, University of Las Palmas de Gran Canaria, Spain

#### Abstract

Teacher discourse constitutes a central mechanism through which classroom relationships are formed, yet little empirical work has examined how its emotional content reflects teachers' internal states and influences students' sense of relatedness. This study investigated whether teachers' personal fulfilment predicts reduced discourse neutrality, and whether this, in turn, relates to students' perceived teacher-student relatedness. Participants were 30 secondary teachers and 888 students across multiple schools in Spain. Teachers audio-recorded natural classroom lessons, which were transcribed and then analysed with a sentiment-analysis model to quantify discourse neutrality. A mediation analysis tested whether discourse neutrality mediated the association between teachers' fulfilment and students' relational perceptions. In addition, a qualitative linguistic analysis was conducted using a large language model to identify markers of interpersonal expression in teachers' discourse. Results showed that higher teacher fulfilment predicted less neutral and more emotionally expressive discourse. On the other hand, teachers reporting lower fulfilment displayed more neutral, affectively flattened language. These findings indicate that teachers' inner experience is reflected in their discourse and carries implications for students' relational experiences in the classroom. Supporting teacher fulfilment may therefore represent a key pathway to fostering emotionally responsive discourse and cultivating positive relational climates in schools.

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### Teachers' Controllability Attribution of Students' Low Performance and the Self-serving Bias

**Presenting author:** Anna Maria Höfli-Leitz, DIPF | Leibniz-Institut für Bildungsforschung und Bildungsinformation, Germany

**Co-author(s):** Hannah Kleen, DIPF | Leibniz Institute for Research and Information in Education, Germany; Mareike Kunter, DIPF | Leibniz Institute for Research and Information in Education, Germany

#### Abstract

Low performance in primary school students has long-term consequences for their academic and professional development, and its prevalence is rising globally, creating uncertain dynamics in educational systems. Teachers' attributions (a motivation theory about causes of success and failure) shape their support behavior, mediated by emotions and attitudes. Yet, attributions are prone to bias. Especially, the self-serving attributional bias (SSAB) may reduce teachers' perceived responsibility for low student performance, affecting support for low-performing students (LPS). SSAB is assumed to be context-dependent, potentially triggered by high self-awareness when facing failure. This study examines (1) how teachers' controllability attribution—both student- and teacher controllability—

relates to attitudes toward supporting LPS as well as support behavior, and (2) whether heightened self-awareness triggers biased attributions. An online survey with 171 primary school teachers assessed quantitative (attributional dimensions) and qualitative measures (open-ended questions) of attribution and its consequences. Structural equation modeling (SEM) tested mediation of attitudes between controllability attribution and support. (2) A mixed-methods approach investigated 659 attribution statements under three self-awareness conditions, applying content analysis and subsequent inference-statistical group comparisons to identify SSAB tendencies. Results indicated that (1) teachers' perceived controllability attributions predicted attitudes: lower student controllability and higher teacher controllability were associated with more positive attitudes toward supporting LPS. However, neither attitudes nor controllability significantly predicted support behavior, likely due to ceiling effects. Regarding biased tendencies (2), high self-awareness activated a focus on student-related causes, supporting a context-dependent SSAB. Conclusion: Attributions predict attitudes and are malleable by context, underscoring context sensitivity when investigating attribution.

## Poster Session 6. Literacy, Writing, and Language-Learning Motivation

### P32-Reading Motivation in Early Elementary Education: What Does a Person-Centered Approach Reveal?

**Presenting Author:** Raquel De Sixte, University of Salamanca, Spain

**Co-author(s):** Álvaro Jáñez, University of Salamanca, Spain; Javier Rosales, University of Salamanca, Spain; Marta Ramos, Salamanca University, Spain

#### Abstract

Reading motivation plays a key role in literacy development during early elementary education. Most existing research has adopted variable-centered approaches, focusing on relationships between specific motivational constructs and reading performance. These studies have provided valuable insights, consistently showing positive associations between autonomous motivations (intrinsic and identified) and reading outcomes, and negative associations for controlled motivation (introjected and external regulations). However, less is known about how different motivations interact within individuals, and person-centered approaches remain underexplored in this context. This study aims to examine whether variable-centered and person-centered analyses yield comparable interpretations of reading motivation data. Participants were 365 Spanish elementary students (ages 6-9). Reading motivation was assessed using the Elementary School Motivation Scale (ESMS-E), and reading performance through PROLEC-R decoding measures (reading time and correct words). Correlation analyses supported previous findings: intrinsic and identified motivations correlated positively with performance, whereas controlled motivation correlated negatively. In contrast, person-centered analysis using cluster methods revealed four motivational profiles—High Quality, High Quantity, Low Intrinsic, and Primarily Extrinsic—with no significant differences in reading performance among profiles. These findings suggest that person-centered approaches offer a complementary perspective to traditional analyses, capturing the coexistence of multiple motivations within individuals. Further research is needed to understand how these profiles evolve and interact with reading development over time. Incorporating person-centered approaches may enrich our understanding of motivational dynamics and inform more tailored educational strategies to foster reading engagement in early learners.

### P33-Checklist-Guided Feedback as a Tool for Enhancing Agency in Elementary Writing

**Presenting Author:** Bente Walgermo, University of Stavanger, Norway

**Co-author(s):** Per Henning Uppstad, Norwegian Reading Center, Norway; Karianne Megard Grønli, University of Stavanger, Norway; Hilde Hagerup, University of Stavanger, Norway; Bjørn Arild Erland, University of Stavanger, Norway

#### Abstract

This study investigates how a Writing Engagement Checklist influences teacher feedback practices and students' motivation and agency in elementary writing instruction. Grounded in research on effective, student-centered, and agentic feedback, the intervention aimed to shift teachers' attention from form-focused assessment toward meaning-oriented and agency-supportive responses, while enhancing students' interest and intentional engagement in writing. The sample included 54 teachers and 592 elementary-grade students in a short-term intervention lasting 2-4 weeks, using a pre-post design. Teachers from all subjects except gymnastics implemented the checklist as part of a cross-curricular writing intervention. Teacher feedback was analyzed for changes in focus and characteristics, and student outcomes were examined using self-report measures of writing motivation and agency. Results indicate significant changes in teacher feedback practices. Form-focused feedback decreased substantially, while agentic feedback increased, accompanied by reductions in directive feedback and praise oriented toward performance and form. Teachers' self-reported attitudes toward feedback practices did not show significant change over time. Student measures demonstrated good internal consistency. Nonparametric analyses revealed small but statistically significant increases in writing interest, intentionality, and perceived choice, while no significant changes were observed in students self-perception, persistence, or interactivity. Taken together, the findings suggest that even a brief, checklist-based intervention can meaningfully reshape feedback practices and support motivationally relevant dimensions of student agency in writing.

### P34 - L2 motivation in Society 5.0: a Japan-Taiwan hybrid online primary EFL project

**Presenting Author:** Machiko Kobori, Hosei University, Japan

#### Abstract

This study forms part of a grant-in-aid Japan-Taiwan co-research project on language education in Society 5.0 and investigates affective dynamics of L2 motivation of primary EFL pupils engaging in a cross-border hybrid online English programme. Online lessons were provided by undergraduate students from Japan to 6th-grade pupils (age 11+) in two state primary schools in Kaohsiung, Taiwan, across three phases (T1-T3) from March to May 2024. Pupils participated from their regular classrooms in an offline whole-class setting while individually joining online lessons via personal or school-provided devices. A bilingual (English/Chinese) questionnaire based on a 5-point Likert scale was administered at each phase, primarily focusing on four motivational constructs: enjoyment, engagement, comprehension, and satisfaction. Data from 148 pupils at T1/T2 and 84 pupils at T3 were analysed using descriptive statistics and one-way ANOVA. Results showed that motivation to learn English through online lessons remained robustly positive across T1-T3, with all construct means above 4.0 at every phase. Enjoyment and comprehension remained statistically stable over time, whereas engagement and overall satisfaction exhibited slightly significant declines (engagement:  $F(2, 381) = 4.16, p = .016$ ; satisfaction:  $F(2, 381) = 4.54, p = .011$ ), implying more discerning evaluation as the pupils became familiar with the online environment rather than demotivated. These findings highlight the motivational potential of hybrid online primary EFL and point to the importance of continually enriching lesson contents and designs to sustain L2 motivation in English education in Society 5.0. Keywords: Society 5.0, online, hybrid, primary EFL, Taiwan

### P35 - Testing the Feasibility of Interest-Based Personalization in Foreign Language Learning

**Presenting Author:** Liene Brandhuber, Karlsruhe University of Education, Germany

**Co-author(s):** Cora Parrisius, Karlsruhe University of Education, Germany; Stephen Bodnar, University of Tübingen, Germany

#### Abstract

Personalizing learning materials to students' individual interests (i.e., context personalization) has been shown to enhance motivation and learning outcomes in mathematics. These effects are theorized to arise from fostering enjoyment- and value-based situational interest and linking content to students' prior knowledge. It remains unclear whether these mechanisms operate similarly in foreign language learning, where instructional content is inherently narrative and context-rich. We conducted a first pilot study with 60 undergraduate teacher students, randomly assigned to either personalized texts matching their topic preferences or non-personalized texts. Contrary to expectations, students in the personalized condition reported lower situational interest and task value, with mixed emotional responses: higher confusion and lower enjoyment co-occurred with less boredom and greater curiosity. Motivation nevertheless remained moderate to high across both conditions, suggesting relative rather than absolute differences in motivation. These findings may indicate the activation of different motivational mechanisms, with interest matching and autonomy support through choice contributing differently across conditions. This interpretation motivates a second pilot study using a 2 x 2 design that systematically varies interest-based personalization and choice. Data collection for this pilot and a larger follow-up study is ongoing, with results expected by the time of the conference.

### P36 - Reading motivation as the key to career choice? The influence of reading in prevocational programs

**Presenting Author:** Eveline Wuttke, Goethe-Universität Frankfurt, Germany; Vinzent Weber, Goethe-University Frankfurt, Germany; Jule Hangen, Goethe University Frankfurt, Germany

#### Abstract

In Germany, adolescents who do not transition directly from secondary school into vocational education and training often enter the transition system, where prevocational programs aim to strengthen competences and support career orientation. A key obstacle for many of these students is limited reading literacy, which may restrict access to career-related information and reduce self-efficacy during application processes. Drawing on Social Cognitive Career Theory, this mixed-methods study investigated the role of reading-particularly reading motivation and reading self-concept-for career orientation among students in the transition system in Hesse, Germany. A total of 87 students completed a standardized questionnaire assessing reading self-concept and reading motivation, and 59 of them participated in guided interviews. Quantitative data were analyzed descriptively and through correlations and t-tests. Interview data were examined using inductive qualitative content analysis and used to categorize students' career orientation as unspecific, domain-specific, or occupation-specific. Survey results showed that most students used the internet (82.9%) and conversations (75.6%) to explore occupations, while 41.5% relied on teachers. Interviews revealed substantial difficulties in understanding occupation-specific terminology, evaluating online sources, and judging realistic access to training positions. Exploratory analyses indicated that higher reading competence and reading motivation were associated with more specific career orientation, although correlations were not significant. The strongest readers were found among students aiming to obtain a higher school-leaving certificate. Overall, reading motivation appeared moderately developed in this group

and may represent a promising lever for interventions combining reading promotion and career orientation in prevocational programs.

### P37 - From pages to emotions: an online reading experiment in primary school

**Presenting Author:** Agnese Nanni, University of Zurich, Switzerland

**Co-author(s):** Tino Endres, University of Zurich and University of Freiburg, Switzerland; Sascha Schneider, University of Zurich, Switzerland

#### Abstract

Students increasingly face learning situations that involve uncertainty and decision-making, which can evoke both positive and negative emotions. While providing choice is often intended to enhance motivation, it may also create emotional ambivalence, particularly among younger learners whose decision-making abilities are still developing. Drawing on Self-Determination Theory and Control-Value Theory, this study examines how autonomy support through choice and the provision of explanatory rationales influence students' affective activation and learning outcomes. Hypothetical results suggest that positive activation increases progressively from the no-choice + no-rationale condition to the choice + rationale condition, while negative activation decreases. Positive activation is expected to mediate the relationship between autonomy-supportive conditions and learning outcomes. These findings highlight the importance of combining autonomy support with meaningful explanations, suggesting that choice becomes most effective when accompanied by rationales that enhance perceived task value and emotional engagement. A total of 154 fourth- and fifth-grade students from two Italian primary schools participated in an online reading experiment. Using a 2 × 2 between-subjects design, the study manipulated the presence of choice (choice vs. no choice) and explanatory rationale (rationale vs. no rationale) when presenting alternative text layouts. Students then read an informational text about ant navigation and completed measures of positive and negative activation, motivation, and learning outcomes, including retention, comprehension, and transfer.

## Poster Session 7. Mindsets, Expectancy-Value, Goals, and Self-Beliefs

### P38 - A New Expectancy-Value Tool for Assessing Parents' Motivational Beliefs on Bilingual Upbringing

**Presenting Author:** Julia Pfeiffer, University of Fribourg, Switzerland

**Co-author(s):** Jean-Louis Berger, Department of Education Sciences, Switzerland

#### Abstract

Motivational beliefs are recognized as key determinants of educational engagement. However, little is known about the complexity of parents' motivational beliefs in the context of bilingual upbringing, and their potential multidimensionality remains underexplored, with no validated tools currently available to assess them. This poster drew on the Expectancy-Value model to investigate the multidimensionality of parents' motivational beliefs in bilingual upbringing. Across two studies (N1 = 295, N2 = 290), we developed and validated the "Motivational Beliefs on Bilingual Upbringing Scale" (MoBBilUS), a tool developed and tested in French. Findings confirmed a robust nine-factor structure reflecting the dimensions of Expectation of success and Subjective task value while demonstrating high internal consistency. Correlations revealed strong relationships supporting the tool's construct validity. Family language policy and prior bilingual parenting experience were significantly related to parents' motivational beliefs. The MoBBilUS offers a valid and reliable tool for a nuanced understanding of parents' motivational beliefs, which could guide resource development, inform support for families engaged in bilingual upbringing, and serve to examine how parents' motivational beliefs impact bilingual practices and children's bilingual outcomes.

### P39 - Mindset and expectancy-value-cost beliefs as predictors of students' situational achievement goals

**Presenting Author:** Claudia Daniela Alama Torres, University of Helsinki, Finland; Junlin Yu, University of Helsinki, Finland

#### Abstract

Achievement goals may represent general orientations, yet they also fluctuate over short periods of time. Despite their dynamic nature, few empirical studies have examined situational achievement goals and their antecedents. Investigating the processes that shape situational achievement goals is important for promoting adaptive motivational patterns, as these goals can significantly impact students' emotions and academic performance. Thus, the present study examines how mindset and expectancy-value-cost beliefs predict situational achievement goals, using the experience sampling method (ESM). Participants were 331 students ( $M = 16.03$  years) from two upper-secondary schools in southern Finland, enrolled in a mandatory physics module. At the beginning of the module, they completed a questionnaire assessing their mindset and expectancy-value-cost beliefs. Throughout the module (3 times per lesson), they completed ESM questionnaires on their situational achievement goals (3484 responses). Multilevel regression analyses showed that students with a stronger growth mindset adopted greater situational mastery goals. Students who held higher attainment value also endorsed greater situational mastery goals and performance-approach goals. In contrast, students who perceived higher cost adopted greater situational performance-avoidance goals. No significant effects of the expectation of success on situational achievement goals were observed in the present study. The findings indicate that situational achievement goals are shaped by broader motivational beliefs, offering useful insights for promoting adaptive motivational experiences in classroom settings.

### P40 - Reciprocal associations between growth mindset, achievement goals, and academic achievement

**Presenting Author:** Jasmin Seppälä, University of Helsinki, Finland

**Co-author(s):** Junlin Yu, University of Helsinki, Finland; Kirsti Lonka, University of Helsinki, Finland

#### Abstract

Students' mindsets are traditionally conceptualized as an antecedent for subsequent achievement goals and achievement, creating a coherent meaning system. However, recent studies show that there might be reciprocal associations between these motivational constructs and achievement. Drawing from the mindset theory and achievement goal theory, focusing on students' growth mindset, math achievement goals, and math achievement, this two-wave cross-lagged study aims to explore the reciprocal associations in students' meaning systems. Participants were over 3000 Finnish adolescents followed over the first two years of secondary education, from 7th to 8th grade. The preliminary correlation analyses indicate moderate to strong associations among achievement goals within and across timepoints, as well as weak to moderate associations between growth mindset and achievement goals with math achievement. These descriptive patterns create a baseline to continue with the cross-lagged panel model (CLPM). The preliminary correlation analyses indicate sufficient to strong autoregressive relations over time with growth mindset ( $r = .39, p < .001$ ), mastery goal ( $r = .60, p < .001$ ), performance-approach ( $r = .31, p < .001$ ), performance-avoidance goal ( $r = .46, p < .001$ ) and math achievement ( $r = .85, p < .001$ ). Results also show multiple (21/25) significant non-zero cross-time and cross-construct correlations between the constructs, justifying the use of CLPM. This study aims to describe the reciprocal effects model in relation to growth mindset, achievement goals, and academic achievement (see Appendix 1), seeking to answer the "chicken-egg"-question, and further results will be presented at the conference.

## P41 - How parental mindsets on intelligence and failure shape responses to students' academic performance

**Presenting Author:** Anna Delis, University of Helsinki, Finland

**Co-author(s):** Junlin Yu, University of Helsinki, Finland; Katja Upadyaya, University of Helsinki, Finland

### Abstract

Parental expectations and involvement are among the strongest predictors of students' academic outcomes. However, less is known about why parents differ in how they respond to their children's performance. Emerging research suggests that parents' implicit beliefs-particularly intelligence mindsets (beliefs about the malleability of ability) and failure mindsets (beliefs about whether failure is harmful or beneficial)-may shape these responses. This study examines how students' academic achievement predicts parents' perceptions of ability, involvement, and educational expectations, and whether these associations are moderated by parents' intelligence and failure mindsets. Using parent survey data combined with official achievement records, analyses were conducted among 487 Finnish lower and upper secondary students and their parents. Preliminary analyses showed that parental perceptions of child's ability in language and mathematics closely tracked achievement in the respective subject but were also shaped by failure mindsets. Notably, failure mindset moderated the relationship between achievement and perceptions of language ability; positive failure mindset strengthened the relationship between performance and perceived competence. No moderation effects were observed for mathematics. In contrast, parental involvement was only weakly predicted by achievement but was positively related to parents' intelligence mindsets, indicating higher involvement among parents who viewed intelligence as malleable regardless of performance. Lastly, parental educational expectations were strongly grounded in performance and learning needs, with no main or moderating effects of parental mindsets. The findings suggest that parental mindsets operate through distinct belief-driven pathways, shaping how parents interpret performance and sustain involvement, with educational expectations driven primarily by objective performance cues.

## P42 - Timing of Interest and Interest Change connections with Performance and Self-efficacy

**Presenting Author:** Alex Shum, The University of Hong Kong, Hong Kong

**Co-author(s):** Luke Fryer, The University of Hong Kong, Hong Kong; Chunqi Li, Jiangxi Normal University, China

### Abstract

Interest is a dynamic motivational variable that is strongly connected to affect and knowledge. Although the Four-Phase Model of Interest Development and the Model of Domain Learning describe interest as developing from situational towards individual interest, few quantitative, large-scale tests of connections within these models have been undertaken. A greater individual interest is consistent with a more developed interest. In the current study, a quantitative change in individual interest provided an indicator of interest development (or deterioration). Furthermore, connections with relevant motivational (i.e., self-efficacy) and performance (i.e., prior knowledge and demonstration of knowledge through quizzes) variables were examined. Participants (n=311, Female=140, Pacific-Asian university) were enrolled in a first-year 15-week semester-long undergraduate course in mathematics, a context where students' interest is known to substantially decline. Participants completed four waves of an individual interest measure, an initial self-efficacy measure, a prior knowledge measure, and five quizzes. Latent change score analysis was used to form latent difference variables between consecutive interest measures. These were embedded into a fully-forward longitudinal structural equation model. Performance on the prior knowledge measure predicted initial motivational variables, and middle-of-course interest change. Initial self-efficacy was a short-term predictor of early interest change and early-course performances. Initial interest predicted a mid-course

performance. Change in Interest predicted the last performance. The results suggest timing differences on how each of self-efficacy and interest (including its change) interplay with performance, pointing to considerations for theoretical integration. Theoretical and practical implications are discussed.

### P43 - Unlocking Potential: Two Sides of Motivation in High-Ability Learners

**Presenting Author:** Inbal Shani, University of Haifa, Israel

#### Abstract

High-ability learners are often assumed to be intrinsically motivated, driven by curiosity and a natural orientation toward challenge. However, educational and clinical experience suggests that motivation among these learners is frequently more complex and emotionally vulnerable than commonly assumed. High expectations, fear of failure, and sustained exposure to uncertainty may shape motivational processes in ways that are not always apparent in conventional learning contexts. Providing meaningful challenge is widely regarded as essential for addressing the cognitive needs of high-ability learners and supporting engagement. At the same time, challenging learning environments inherently involve uncertainty, delayed solutions, and repeated encounters with difficulty or temporary failure. While such conditions may align with learners' cognitive strengths, they also introduce substantial emotional demands, requiring tolerance of ambiguity, regulation of frustration, and persistence without immediate success. Challenge therefore plays a dual role, functioning as both a source of motivation and a potential point of strain. This contribution draws on examples from clinical and educational work with gifted and high-ability children within a challenge-based intervention incorporating puzzle- and game-based activities. Selected challenge situations illustrate how moments of impasse, uncertainty, and error are accompanied by shifts in emotional experience and motivation. These examples highlight the dynamic interplay between high cognitive ability, emotional sensitivity, and motivational engagement, underscoring that the realization of high potential depends not only on ability and challenge, but also on the emotional conditions that allow motivation to be sustained over time.

## Poster Session 8. Student Well-Being, Burnout, and Anxiety Across Educational Stages

### P44 - Achievement Emotions in Primary and Middle School: The Role of Personality and Emotion Regulation

**Presenting Author:** Giada Vicentini, University of Verona, Italy

**Co-author(s):** David Putwain, Liverpool John Moores University, United Kingdom; Roberto Burro, University of Verona, Italy; Daniela Raccanello, University of Verona, Italy

#### Abstract

According to the Control-Value Theory, achievement emotions are shaped by various antecedents. Although some of them have been extensively studied, others remain less explored, especially among primary and middle school students. Accordingly, we examined how demographic variables (sex and age), personality traits, and four behavioral/cognitive emotion regulation strategies relate to 10 achievement emotions. A sample of 330 fourth, sixth, and seventh-graders self-reported their Big Five personality traits, two behavioral (Actively Approaching and Withdrawal) and two cognitive (Positive Refocusing and Catastrophizing) emotion regulation strategies they can use to handle stress situations, and five positive (enjoyment, pride, hope, relief, and relaxation) and five negative (anxiety, anger, shame, hopelessness, and boredom) school-related emotions. We conducted 10 hierarchical

multiple regressions in SPSS. Females reported higher anxiety and less boredom compared to males. Additionally, older students reported experiencing less positive and more negative emotions than their younger counterparts. Regarding personality traits, Extraversion, Conscientiousness, and Openness served as protective factors, whereas Neuroticism was identified as a risk factor, despite its positive association with relief. Actively Approaching and Positive Refocusing showed adaptive relational patterns, in contrast to Withdrawal and Catastrophizing. Despite limitations (e.g., sample size and cross-sectional design), our findings highlight the significance of both relatively stable traits (personality) and more malleable factors (emotion regulation strategies) in understanding school-related emotions. From a practical perspective, these results can inform the development of evidence-based interventions aimed at enhancing students' emotion regulation skills.

### P45 - Early Primary School Children's Well-Being: Does Today's Happiness Predict Tomorrow's Well-Being?

**Presenting Author:** Sabrina Förster, University of Wuppertal, Germany

**Co-author(s):** Diana Raufelder, University Greifswald, Germany; Juliane Schlesier, University of Wuppertal, Germany

#### Abstract

Well-being in school is internationally recognized as a key educational goal. It is conceived as a multidimensional, school-situated construct spanning cognitive, emotional, and social facets, and it is closely linked to students' motivation and achievement. However, research findings from primary school contexts remain limited and are scarce in conceptual, cross-sectional, and longitudinal terms. To address this gap, the present study examines longitudinal relations among key indicators of children's well-being across the first school term in primary school with two waves. Well-being was operationalized with three subscales according to the SSK-mini: enjoyment (positive affect), negative affect (anger, sadness/loneliness, anxiety), and somatic stress symptoms. A cross-lagged panel model (CLPM) in children from early primary school ( $N = 219$ ; grades 1 and 2) was run to disentangle the interplay of these sub-facets of well-being. Results of the CLPM show besides appropriate fit indices and substantial autoregressive effects as expected also significant cross-lagged links: earlier anxiety predicts lower subsequent enjoyment ( $\beta = -.43$ ,  $p < .001$ ); earlier sadness is associated with higher subsequent enjoyment ( $\beta = .26$ ,  $p = .04$ ); and earlier anger predicts stronger subsequent somatic stress symptoms ( $\beta = .22$ ,  $p = .02$ ). Conversely, earlier somatic stress symptoms predict later sadness ( $\beta = .21$ ,  $p = .02$ ) and anxiety ( $\beta = .23$ ,  $p = .01$ ). The findings substantially indicate an intertwining of somatic and emotional facets of primary school students' well-being and underscore the need for multidimensional screening and preventive, pedagogically grounded arrangements.

### P46 - Educational Track Differences in School Engagement and Burnout Across Upper Secondary Transition

**Presenting Author:** Fiia Söderholm, University of Jyväskylä/University of Eastern Finland, Finland

**Co-author(s):** Kati Vasalampi, University of Jyväskylä, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Joona Muotka, University of Jyväskylä, Finland

#### Abstract

Upper secondary education is a critical period for student well-being, as it involves a transition to a new educational context with different demands. Although differences in school burnout between academic and vocational tracks have been reported, less is known about how school engagement and burnout develop jointly across this transition. Using longitudinal data from 632 Finnish students followed at three time points from the final year of lower secondary school to the final year of upper secondary education, this study examined profiles of school engagement and burnout, their stability and change over time, and the role of educational track. Latent profile

analyses identified three profiles at each time point: engaged, burned out-engaged, and average. Latent transition analysis indicated substantial stability in profile membership, alongside both positive and negative transitions occurring via the average profile. Educational track was associated with profile membership and transitions at the end of lower secondary school and at the beginning of upper secondary education. Vocational-track students were more likely than academic-track students to belong to the burned out-engaged profile. Transitions from the average to the engaged profile were more likely among vocational-track students, whereas academic-track students were more likely to transition from the average to the burned out-engaged profile. These differences weakened over time and were no longer evident by the third year of upper secondary education. The findings highlight the importance of identifying burnout and engagement patterns prior to the transition to upper secondary education, as these may influence students' educational choices.

### P47 - The development of exhaustion, cynicism, and inadequacy in general upper secondary education

**Presenting Author:** Jaana Viljaranta, University of Eastern Finland, Finland

**Co-author(s):** Fiia Söderholm, University of Jyväskylä/University of Eastern Finland, Finland; Riikka Hirvonen, University of Eastern Finland, Finland; Heta Tuominen, University of Eastern Finland, Finland; Kristiina Lappalainen, University of Eastern Finland, Finland; Leena Holopainen, University of Eastern Finland, Finland

#### Abstract

Previous research has shown some evidence of an increase in school burnout in recent years among youth, and especially studying in academically demanding educational settings has been found to be a risk factor for burnout. Therefore, in this study the long-term development of different burnout dimensions, that is, exhaustion, cynicism and inadequacy, was examined among students in general upper secondary education. In addition, the role of perceived and received support, school engagement, as well as gender in this development was taken into account. The study followed 210 Finnish students studying in so-called academic track over their three-years studies. The results showed that from three burnout dimensions cynicism and inadequacy increased, while exhaustion remained stable over the years. Moreover, the three dimensions were strongly interrelated. The support that students perceived negatively predicted initial burnout levels. In addition, students' affective engagement negatively affected exhaustion and inadequacy, whereas cognitive engagement negatively affected cynicism. Further, girls reported higher exhaustion and inadequacy than boys. The findings provide new insight on the importance of engagement and perceived support as an antecedent of burnout - promoting students' engagement and sufficient support for studies can help to reduce and prevent burnout among academically oriented students.

### P48 - Student engagement profiles in upper secondary education: Relations to school burnout

**Presenting Author:** Elina Sinkonen, University of Eastern Finland, Finland

**Co-author(s):** Fiia Söderholm, University of Jyväskylä/University of Eastern Finland, Finland; Jaana Viljaranta, University of Eastern Finland, Finland; Heta Tuominen, University of Eastern Finland, Finland

#### Abstract

Student engagement is a fundamental part of student well-being. This study aimed to examine what kinds of student engagement profiles can be identified among students in upper secondary education, how academic and vocational track students are distributed in these profiles, and how these profiles differ regarding school burnout. In this study, student engagement was examined taking into account three sub-dimensions of affective engagement (teacher-student relationships, peer support, family support), two sub-dimensions of cognitive engagement (control and relevance of schoolwork, future aspirations and goals), behavioral engagement, and schoolwork-related engagement. The data from WELL2 study consisted of 2628 upper secondary school students. Six engagement profiles were identified: "Highly engaged", "Engaged", "Moderately engaged", "Low support, high

enthusiasm and relevance", "High belonging, low relevance", and "Disengaged". Vocational track students were overrepresented in the Highly engaged profile, but also in the Disengaged profile, Low support, high enthusiasm and relevance profile and in the Moderately engaged profile. Academic track students were overrepresented in the Engaged and in the High belonging, low relevance profile. Regarding burnout, Highly engaged students had lowest and Disengaged students had highest scores in exhaustion and cognitive impairment. The results further suggest that all profiles differed significantly from each other regarding mental distance, but there was no significant difference between the Highly engaged and Low support, high enthusiasm and relevance profile. Results concerning emotional impairment showed that the differences between profiles were less significant compared to other dimensions. The results highlight the need to understand the individual differences in engagement and well-being.

#### P49 - Intolerance of Uncertainty and Academic Achievement: The Mediating Role of Test Anxiety

**Presenting Author:** Zita Zeimer, Universität Münster, Germany

**Co-author(s):** Wendy Symes, University of Münster, Germany; Stephanie Lichtenfeld, Universität Münster, Germany

##### Abstract

Examination situations are a central challenge in everyday school life, yet students differ considerably in how they cope with uncertainty in evaluative contexts. Intolerance of Uncertainty (IU) describes a dispositional tendency to perceive uncertain situations as aversive and is an important factor in emotional vulnerability. In academic settings, IU is particularly relevant, as examinations involve ambiguous evaluative criteria and limited controllability, which can make them especially challenging for some students. The present longitudinal study investigates the relationships between IU, state test anxiety, and academic achievement across one school year in a sample of 735 A-level students. IU was assessed at the beginning of the school year (T1), state test anxiety regarding the upcoming A-level examinations was measured mid-year (T2), and academic achievement was operationalized via final examination grades at the end of the year (T3). The central research question of this study is whether IU relates to academic achievement indirectly through state test anxiety. Accordingly, we hypothesize that higher IU is associated with higher levels of test anxiety (H1) and that higher test anxiety is associated with lower academic achievement (H2), resulting in an indirect effect of IU on academic achievement via test anxiety (H3). Data collection is complete, and analyses are planned using structural equation modeling. By identifying test anxiety as a mediating mechanism linking IU to academic performance, the study highlights a specific psychological pathway that can be targeted in interventions, enabling educators to support students at risk and reduce the negative impact of uncertainty on examination outcomes.

### Poster Session 9. Reviews, Syntheses, and Intervention Design in Motivation and Emotion

#### P50 - How Are Academic Emotions and Affective Disorders Related in School Students? A

##### Systematic Review

**Presenting Author:** Lina Wirth, Leuphana University Lüneburg, Germany

**Co-author(s):** Poldi Kuhl, Leuphana Universität Lüneburg, Germany

##### Abstract

Academic emotions, such as momentary feelings of anxiety, enjoyment, and boredom, are central to students' learning and achievement. However, recent research suggests that these emotions are linked not only to academic outcomes, but also to students' mental health. Intense and persistent negative academic emotions are particularly

associated with psychological distress and the risk of affective disorders. The present study provides a systematic review synthesizing empirical evidence on the relationship between academic emotions and affective disorders in school students. Following the PRISMA 2020 guidelines, four major databases (Scopus, APA PsycInfo, ERIC, and Web of Science) were searched using predefined keywords related to academic emotions and affective disorders. After screening 1,856 studies, eight quantitative studies published between 2017 and 2024 met the inclusion criteria. Most studies focused on test anxiety and school enjoyment and their relation to symptoms of depression and anxiety disorders. The findings consistently show that test anxiety is strongly correlated with symptoms of depression and anxiety disorders. Longitudinal evidence indicates bidirectional effects. In this context, a network analysis additionally showed that test anxiety and affective disorders are closely related but nevertheless represent distinct constructs. Additionally, weak yet significant negative relationships were found between school enjoyment and depressive symptoms. Overall, the results highlight the importance of integrating emotion and mental health research in educational contexts and emphasize the need for future studies to enhance our understanding of the underlying emotional processes and to examine how fostering positive academic emotions may mitigate affective disorders and promote academic success of all students.

### P51 - Reviewing evidence on effects of lecturer enthusiasm in postsecondary education

**Presenting Author:** Maike Trautner, Marburg University, Germany

**Co-author(s):** Lena Kegel, University of Münster, Germany

#### Abstract

Teacher enthusiasm is a critical factor influencing student motivation, well-being, and learning outcomes in educational settings. While extensively studied in primary and secondary education, its role in postsecondary contexts remains underexplored. This systematic review, conducted following PRISMA guidelines, examines how lecturer enthusiasm is conceptualized, measured, and linked to student and lecturer outcomes in higher education. A comprehensive search yielded 3,578 records, of which 64 studies (72 samples) met inclusion criteria. Most studies employed cross-sectional designs ( $k = 47$ ), with limited experimental research ( $k = 20$ ). Enthusiasm was primarily assessed from students' perspective, mostly using high-inference instruments that lacked validation and consistent use in terms of item number and response scale. Only three studies included lecturer self-reports. Students of enthusiastic lecturers reported higher intrinsic motivation, task value, and enjoyment, and lower boredom. However, no consistent associations were found between lecturer enthusiasm and achievement, effort, persistence, and extrinsic motivation. Enthusiastic lecturers were perceived as more supportive, credible, humorous, and engaging, and are more likely to use active, autonomy-supportive, and well-structured teaching strategies. Notably, links between enthusiasm and lecturers' well-being were scarcely investigated, highlighting a significant research gap. The review underscores the need for more valid, context-specific instruments to assess enthusiasm in higher education, clearer conceptual differentiation from related constructs (e.g., warmth, friendliness), and longitudinal or experimental designs to uncover causal mechanisms. Overall, this review emphasizes the potential of lecturer enthusiasm to enhance student engagement and well-being in postsecondary education, calling for greater theoretical and empirical attention to this vital teaching quality.

### P52 - Uniting Two Separate Conversations with a Systematic Review: Motivational Interventions and Dropout

**Presenting Author:** Nilani Suriakumar, University of Education Karlsruhe, Germany

#### Abstract

Student dropout in higher education is widely considered an issue as it is associated with individual and fiscal costs. To prevent student dropout, various strategies have been implemented and tested in the past, typically involving

mentoring, institutional changes, or academic skill programs. While such interventions may effectively reduce the risk of student dropout, they are relatively cost-intensive. Further-and most importantly-, they may not address the most effective leverage point for preventing student dropout, as they fail to target the psychological costs associated with remaining in higher education. It is well established that student dropout and retention are closely linked to motivational and affective variables. Consistently, studies from motivation research have demonstrated that motivational interventions can yield positive effects on retention-when evaluated. Nevertheless, motivational interventions have received comparatively little attention in the dropout literature. Moreover, due to the unsystematic reporting in prior motivational intervention studies, it remains unclear which types of motivational interventions are particularly promising for addressing student dropout. This systematic review aims to provide a systematic integration of these mutually promising fields-dropout research and motivational intervention research-by examining the extent to which motivational interventions can promote retention in higher education.

### **P53 - Positive Academic Risk-Taking in Adolescence - A Scoping Review**

**Presenting Author:** Jule Schretzmeir, Vrije Universiteit Amsterdam, Netherlands

**Co-author(s):** Ita Puusepp, Vrije Universiteit Amsterdam, Netherlands; Myrthe Vel Tromp, Universiteit van Amsterdam, Netherlands; Johannes C. F. Ket, Medical Library, Vrije Universiteit Amsterdam, Netherlands; Tieme Janssen, Faculty of Behavioural and Movement Sciences, Vrije Universiteit Amsterdam; LEARN! Institute, Netherlands; Hilde M. Huizenga, Universiteit van Amsterdam, Netherlands; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

#### **Abstract**

Positive academic risk-taking (pART), refers to legal, relatively safe behaviors that adolescents can practice within educational contexts, with the potential to positively impact their motivation and learning. pART can manifest in behaviors such as concept exploration, challenge seeking, and can be influenced by factors like growth mindset, and a sense of autonomy. As a result, adolescents may experience positive learning outcomes such as academic skill development, better self-regulation abilities, and improved emotional well-being. However, pART is referred to with a multitude of terminologies, theoretical frameworks, definitions, and methods of investigation. A synthesizing overview of this heterogeneous body of literature has yet to be made to understand the breadth of pART behaviors, their predictors, outcomes, and impact on adolescents' motivation and learning. The objective of this scoping review is to 1) assemble and synthesize definitions and instruments associated with, positive academic risk-taking (pART), 2) identify and map evidence of factors influencing pART, and 3) identify and present evidence for short- and long-term outcomes of pART. Using the Joanna Briggs Institute's (JBI) methodology, a protocol for this scoping review was preregistered and we are now in the screening-process. Data will be extracted and categorized using an open coding framework and thematic analysis will be presented per research objective.

### **P54 - REGUL-EM-I Program: Enhancing Emotional Competencies in Early Childhood**

**Presenting Author:** Sílvia Severino-Fanero, Universitat Rovira i Virgili, Spain

**Co-author(s):** Josepa Canals-Sans, Universitat Rovira i Virgili, Spain; Núria Voltas-Moreso, Universitat Rovira i Virgili, Spain

#### **Abstract**

This study presents the REGUL-EM-I intervention, an emotional education programme created for preschool children and implemented in classrooms at two schools in the province of Tarragona (Catalonia, Spain). Aligned with the educational and legislative framework, the intervention aims to enhance emotional competencies. 53 children (5 years) participated, with emotional self-identification assessed before and after each of the eight sessions using an emotional traffic light tool. Results indicate a general tendency towards pleasant emotional

states following the sessions, with increased emotional awareness and limited persistence of negative states. We suggest the potential of the REGUL-EM-I intervention to promote early emotional awareness in educational contexts.

### P55 - Co-designing an Adolescent Mental Health Intervention: Five Lessons From Youth Participation

**Presenting Author:** Harriet Kabo, UCL- Institute of Education, United Kingdom

**Co-author(s):** Sarah Dolaty, Institute of Education, University of London, United Kingdom; Bonamy Oliver, Institute of Education, University of London, United Kingdom; Susie Peter, University College London, United Kingdom; Anna Raynaud, Birkbeck, University of London, United Kingdom; Matthew P. Somerville, UCL Institute of Education, United Kingdom; Marthe Wiggers, University College London, Institute of Education, United Kingdom

#### Abstract

Youth participation in mental health research is increasingly recognised as mutually beneficial for young people and for researchers (Rowland et al., 2024). Researchers and youth advocacy groups alike have called for improved assimilation of young people into intervention design and implementation, making them meaningful partners and co-researchers. This perspective piece outlines key lessons learned from incorporating young people as part of a research team to co-design a school-based intervention reframing emotion beliefs with UK secondary school students aged 16-18. Here we present five lessons learned through the co-design process which highlight both the value of genuine collaborative co-design with youth researchers and offer practical considerations for improving the quality and impact of adolescent emotion-based interventions. Three lessons focus on effective intervention engagement: (1) building credibility and authenticity; (2) keeping suggestions practical and relevant; and (3) honouring complexity. Two additional lessons related to the participatory co-design process itself: (4) valuing honest critique and (5) maintaining a focus on youth co-researchers as equal members of the research team. Our findings are valuable for mental health researchers designing and implementing emotion-based interventions for adolescent populations and, we hope, highlight the value of genuine collaborative co-design with young people.

## Poster Session 10. Specific Youth Populations, Educational Transitions, and Inequality

### P56 - Motivating behavioural change in delinquent youths: Evidence from a Systematic Review

**Presenting Author:** Lieke Brouwer, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands

**Co-author(s):** Andrea Donker, Hogeschool Utrecht (University of Applied Sciences Utrecht), Netherlands

#### Abstract

Lasting behavioural change depends heavily on intrinsic motivation. According to the self-determination theory, this requires feelings of autonomy, competence and relatedness, and also a purpose or direction according to goal setting theory (Locke & Latham, 2002). This is no different for justice-involved youths. Yet professionals struggle to cultivate and maintain intrinsic motivation in (semi)forensic contexts. The aim of this study is to provide a practice-oriented framework to help professionals that work with justice-involved youths to connect with their ideas and wishes and stimulate lasting behavioural change. Research questions are (1) which professional methods for stimulating autonomy, competence, relatedness and purpose are supported by empirical evidence; and (2) what conditions enable effective use of these methods in (semi)forensic settings. This study will combine interviews with experts in psychology, pedagogy and psychiatry with a systematic literature review. Databases such as PsycINFO, Pubmed and Web of Science will be searched for peer-reviewed empirical studies with justice-involved youths (16-

27) in (semi)forensic settings from 2000 up to the present, following the PRISMA-standard. Anticipated findings regarding professional methods include for instance motivational interviewing, shared decision-making and peer support practices. This study aims to provide an empirically grounded practice-oriented framework to help professionals working with justice-involved youths to connect with their ideas and wishes and stimulate lasting behavioural change. The practice-oriented framework will be presented at the conference.

### **P57 - A Longitudinal Investigation of Prolonged Social Withdrawal Through Social Rank Theory**

**Presenting Author:** Junwen Chen, the Australian National University, Australia

**Co-author(s):** Angus Cowan, the Australian National University, Australia; Alysia Robertson, the Australian National University, Australia; Tegan Cruwys, the Australian National University, Australia; Olivia Evans, the Australian National University, Australia

#### **Abstract**

Social withdrawal involves the voluntary disengagement from social interactions and may be driven by avoidance (i.e., a strong dislike of social interaction) or unsociability (i.e., low social interest). Hikikomori represents an extreme, prolonged, and pathological form of social withdrawal, characterised by confinement to the home and non-attendance at work or school for at least six months. First identified in Japan, hikikomori has increasingly been recognised as a modern-society-bound syndrome with growing global prevalence. Given its negative consequences, there is a pressing need for a theoretical framework that can guide a universal understanding of hikikomori. The current study developed a novel framework grounded in social rank theory to examine predictors of hikikomori. Using a three-wave longitudinal survey of Australian adults (N = 3,860), we tested whether social rank predicted hikikomori over time and whether this relationship was mediated by psychological distress, loneliness, and self-esteem. Results indicated that 7.56% of participants met the criteria for hikikomori. Lower social rank at Wave 1 significantly predicted a higher likelihood of hikikomori at Wave 3, with Wave 2 loneliness mediating this relationship. Wave 2 psychological distress also independently and positively predicted hikikomori at Wave 3, while no other effects were significant. These findings provide partial support for the social rank framework in understanding hikikomori. Given that school non-attendance has been suggested as a risk factor or early manifestation sharing psychological mechanisms with hikikomori, the present findings have important implications for the prevention and management of both hikikomori and school attendance problems.

### **P58 - Affective dynamics of adolescent biodiversity concern in an outdoor learning context**

**Presenting Author:** Laura Leon Perez, University of Geneva, Switzerland

**Co-author(s):** Emmanuel Sander, University of Geneva, Switzerland; Catherine Audrin, University of Teacher Education Lausanne, Switzerland; Julien Mercier, HEIG-VD, Switzerland

#### **Abstract**

This study investigates adolescents' affective engagement with biodiversity in the context of outdoor education, with particular attention to differences between concern for animals and plants and the moderating role of connection to nature. Although cognitive understanding is essential, environmental engagement is also shaped by emotional and motivational factors, and stronger connection to nature is generally associated with greater environmental responsibility. Yet public knowledge about biodiversity remains limited, and "plant blindness"-the tendency to undervalue plants compared with animals-poses a persistent educational challenge. Outdoor learning has been suggested as an effective way to foster emotional involvement and strengthen ecological understanding through direct contact with the natural environment. A total of 170 students aged 12-17 participated in a three-session pedagogical program including an outdoor activity around a lake embedded within prior and subsequent

classroom work. Connection to nature was assessed using the Inclusion of Nature in Self scale, and concern for biodiversity was measured separately for animals and plants using the Environmental Concern Scale. Baseline analyses revealed significantly higher concern for animals than plants, confirming plant-related under-concern. Repeated-measures analyses indicated that overall biodiversity concern increased over time, particularly between the second and third sessions. However, trajectories were not homogeneous: changes depended on participants' initial levels of plant and animal concern, as well as on their connection to nature, which positively moderated concern development. Overall, the findings suggest that outdoor pedagogical experiences can enhance adolescents' affective engagement with biodiversity, while also highlighting the importance of individual differences, especially initial concern and prior connection to nature.

### **P59 - Contrast and Assimilation Effects on Motivation Across the Primary-Secondary School Transition**

**Presenting Author:** Isabelle Plante, UQAM, Canada

**Co-author(s):** Kathryn Chaffee, Université du Québec à Montréal, Canada; Catherine Fréchette-Simard, Université de Montréal, Canada; Annie Dubeau, Université du Québec à Montréal, Canada; Frederic Guay, Laval University, Canada

#### **Abstract**

Achievement motivation plays a central role in students' academic success, aspirations, and engagement. Prior research emphasizes the importance of social comparison processes in the development of motivational beliefs, particularly academic self-concept. Two opposing mechanisms have been identified: contrast effects, such as the big-fish-little-pond effect, whereby students report lower self-concept in high-achieving environments, and assimilation effects, whereby belonging to a high-achieving group may enhance self-perceptions through basking in reflected glory. Although both mechanisms have received empirical support, contrast effects appear more robust, especially during the transition to secondary school—a period marked by increased competition and heightened social comparison. However, less is known about whether these effects extend beyond academic self-concept to other motivational and behavioral indicators, such as expectancies of success, task values, and school engagement. Using data from 1,569 Canadian students transitioning to secondary school, the present study examined whether classroom-level achievement predicts multiple motivational outcomes over and above students' prior achievement. Students completed validated measures of academic self-concept, expectancy-value beliefs, and school engagement at the beginning and end of Grade 7. Results showed that higher classroom achievement was associated with lower expectancies of success, but with higher—albeit marginally—task values and school engagement, and was unrelated to academic self-concept. These findings suggest that high-achieving contexts may simultaneously undermine some motivational beliefs while supporting others, highlighting the complexity of social comparison processes during educational transitions.

### **P60 - The Role of Stereotype Awareness and Psychological Barriers in Explaining Educational Inequalities**

**Presenting Author:** Dora Popović, Institute of Social Sciences Ivo Pilar, Croatia

#### **Abstract**

Previous research has shown that students from lower-SES families are at constant higher risk of academic failure, a finding that has largely been attributed to the numerous structural barriers they face. More recent research, however, points to the role of psychological barriers in the emergence and maintenance of educational inequalities, as well as to the importance of contextual factors in this process. The aim of this study was to examine selected components of the Identities in Context Model in explaining educational inequalities in primary education in

Croatia. A total of 1012 6th-year and 7th-year students participated in this two-wave study. Students completed several questionnaires measuring subjective SES, psychological barriers, academic achievement, educational aspirations, and perceptions of stereotypes about poor people in their social environment. The results showed that students from lower-SES backgrounds indeed experience higher levels of psychological barriers in the academic context, which partially explains the association between SES and educational outcomes. Additionally, lower-SES students who were more aware of the presence of harmful stereotypes reported higher levels of psychological barriers, confirming the moderating role of wider sociocultural context the students reside in. This study supports specific assumptions of the Identities in Context Model, while also highlighting the complexity of studying educational inequalities across different social contexts and the need for comprehensive measurement of family SES and psychological barriers.

### P61 - Motivational Trajectories for Career Choices in Young Adulthood

**Presenting Author:** Nina Udvardi-Lakos, University of Tübingen, Germany

**Co-author(s):** Jakob Schwerter, Hector Research Institute of Education Sciences and Psychology (HIB), University of Tübingen, Germany; Hui Wang, The Education University of Hong Kong, Hong Kong; Robert Klassen, University of Oxford, United Kingdom; Tim Fütterer, University of Tübingen, Germany; Thomas Gfrörer, Initiative Zukunftsbildung, Germany

#### Abstract

After secondary school, young adults need to choose a career path and typically need to pursue studies or vocational training for that career choice. However, young adults might be unsure of their career path and change their career choice. In this study, we examine the motivational factors influencing the decision to remain in a career path or to change to a new one. This study makes a novel contribution by combining the situated expectancy-value framework of motivation, the motivational theory of lifespan development, as well as the personality types theory of career development, as a basis to explain motivational trajectories during career pathways of young adults. We will look at variables relating to participants' expectancy (e.g., performance expectations), value (e.g., attitudes towards studies), vocational interests, and control (e.g., school performance, as limiting factor for access to studies) for their current studies, vocational training, or job. We investigate whether changes in these motivational variables predict changes in career choice, as reflected in the changes of studies or vocational training participants engage in, and whether motivation then adapts to the new career path. In a longitudinal study following a representative sample with (at least)  $N = 1,236$  adults over eight timepoints, we will use multi-level models to analyze motivational trajectories for career choices after secondary school. We expect that motivational variables for studies, vocational training, or one's job predict whether people change or stay in their current career path, and that changes in career choices can predict changes in motivational variables.

## Keynote 3



**Tim Urdan**

Professor of Psychology  
Santa Clara University (USA)

### *The Relationship between Motivation and Self-Regulated Learning: A Complexity Perspective*

Self-regulation and motivation are intertwined in a dynamic and reciprocal way. As Zimmerman argued, and a wealth of research has demonstrated, motivational constructs such as goals, values, self-efficacy, and emotions are involved in the planning, performance, and self-reflection stages of self-regulated learning (SRL). Effective use of SRL strategies can also boost motivation, including self-efficacy, valuing, and positive emotions. In this talk, I review some of Zimmerman's work examining the connection between motivation and SRL. Then, I consider the motivation-SRL relationship from a complex-dynamic systems perspective, paying particular attention to two prominent theories of motivation: achievement goal theory and situated expectancy-value theory. Next, I offer suggestions for methodologies that can be used to examine the motivation-SRL relationship in a complex way, borrowing from mixed-methods examples used by other researchers. Finally, I consider two factors that may contribute to active resistance against engaging in self-regulated learning practices.

## Paper Session 28: Feedback, Emotional Regulation, and Performance Appraisals

### Who Gets Anxious? Understanding Students' On-Task Affective Responses to Mistakes

**Presenting author:** Reetta Kynnäräinen, University of Turku, Finland

**Co-author(s):** Veli-Matti Vesterinen, University of Turku, Finland; Elisa Vilhunen, University of Helsinki, Finland; Mikko-Jussi Laakso, University of Turku, Finland

#### Abstract

There is a growing body of research on students' affective responses to mistakes; however, a notable gap remains in studies focusing on how students react to mistakes on task and in authentic contexts. In this study, the phenomenon was approached through an ecological momentary assessment design, providing repeated self-report data on students' affective experiences in situ. The study was conducted among university students (N=256) in the embodied context of a chemistry laboratory course, where students are prone to yielding unexpected results and making mistakes. Mistakes are conceptualized as a specific learning phenomenon, and thus, we focus on how they influence students' situational engagement and activity-related emotions (excitement, relaxation, frustration, anxiety, and boredom). We also examine individual differences related to gender identity, performance level, and motivational factors. The data were analyzed within a multilevel structural equation modeling framework, and the results suggest that in mistake situations, students experience lower levels of positive emotions, perceived competence, and interest, as well as higher levels of negative activating emotions and perceived challenge. The effects are situational and do not seem to carry over to later instances. Moreover, the findings indicate individual differences: in mistake situations, low-performing students experienced a more intense increase in frustration and anxiety, along with a decrease in relaxation. Similarly, students with high emotional costs experienced a substantial rise in anxiety levels, suggesting a plausible fear of failure. The findings support the conceptualization of mistakes as a situated phenomenon and underline the importance of approaching them at a situational level.

### Puzzling emotions: How emotion regulation shapes the appraisal of competence related feedback

**Presenting author:** Fé De Mulder, Ghent University, Belgium

**Co-author(s):** Joachim Waterschoot, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium

#### Abstract

Students frequently receive feedback, especially in an educational setting. However, while some take this as an opportunity to learn, others feel threatened or demotivated by it. Currently, little is known about what prompts these individual differences. However, students' use of emotion regulation styles (ERS) might be a potential key factor. Drawn from a self-determination theory perspective (SDT), three ERS are distinguished, based on their degree of autonomy and volition. Integrative emotion regulation (IER) refers to an adaptive, autonomous ERS where individuals engage with their emotions in an open, non-defensive and authentic manner. In contrast, suppression and dysregulation are two maladaptive ERS, characterized by low levels of volition. In line with SDT, individuals who employ more IER are expected to benefit from their more autonomous attitude towards emotions. 93 first-year psychology students took part in an experimental study. They were randomly assigned to either an easier (competence satisfying) or harder (competence frustrating) Tangram puzzle task condition. In the first condition, students additionally received corresponding positive feedback about their performance, while students in the

latter condition received negative feedback. Participants reported on their habitual use of ERS at baseline and their situational ERS during the experiment. Moreover, competence fulfilment, negative affect and feedback appraisal were assessed throughout the experiment. Data collection is almost completed with data analysis expected to start soon. The current study is expected to provide insights into the role of ERS in managing challenging situations and feedback.

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## Adaptive reactions to errors: Results from a prompting approach with primary school students

**Presenting author:** Jana Spear, University of Augsburg, Germany

**Co-author(s):** Donna Bryce, University of Augsburg, Germany; Cara-Sophie Enste, University of Education Weingarten, Germany; Robert Grassinger, University of Education Weingarten, Germany; Markus Dresel, University of Augsburg, Germany

### Abstract

Errors provide valuable opportunities for learning by revealing misconceptions and knowledge gaps. However, learning from errors requires students to respond adaptively. Such adaptive reactions to errors are characterized by the maintenance of learning motivation and the effective emotion regulation (affective-motivational reactions to errors) as well as an action-related adaptation of the learning process (action-related reactions to errors). Although adaptive reactions to errors have been linked to improved learning outcomes in older students, experimental evidence enabling causal inferences remains scarce—particularly among younger learners. Hence, we conducted a field-experimental study with primary school students in which adaptive reactions to errors were experimentally manipulated in two domains (math and German) to investigate their effects on the learning process and knowledge acquisition. At pretest, prior knowledge and baseline reactions to errors were assessed. A total of 268 third- and fourth-graders were then randomly assigned to a 2(affective-motivational) x 2(action-related reactions to errors) design. Treatment-specific psychoeducational content and prompts were embedded in subject-specific digital learning environments that additionally enabled the collection of state and behavioral measures (restudy index of previous learning material following errors). In a posttest, students retrospectively reported indicators of the learning process and completed domain-specific knowledge tests. While the treatments did not affect state or retrospective measures of adaptive reactions to errors, the action-related treatment significantly increased effort investment, elaboration, the behavioral restudy index, and enjoyment. Knowledge acquisition, however, remained unaffected. The limited effectiveness of the treatments suggests important consequences for the development of interventions for young students.

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## Success vs. Failure: How Repeated Summative Feedback Shapes Emotions and Working Memory Performance

**Presenting author:** David Sachs, Ludwig-Maximilians-Universität (LMU), Germany

**Co-author(s):** Sara Laybourn, Ludwig-Maximilians-Universität (LMU), Germany; Anne Frenzel, Ludwig-Maximilians-Universität (LMU), Germany; Martin Constant, University of Geneva, Switzerland

### Abstract

Summative feedback is fundamental to educational assessment. Feedback of success should yield positive, feedback of failure negative emotional responses, and these emotional experiences may shape subsequent performance over time. Although such reciprocal effects between emotions and performance have been shown to

unfold longitudinally over the course of schoolyears (Pekrun et al., 2017), little is known about how repeated assessment and exposure to summative feedback affects their short-term processes. To address this gap, N = 104 participants completed eight blocks of the Color Wheel Task, a visual working memory paradigm. After each block, participants received differential feedback that was either more positive (Success condition) or more negative (Failure condition) than their actual performance. Positive and negative affect were assessed using the AEQ after each block, and task accuracy served as the performance outcome. Mixed-effects ANOVAs revealed significant main effects of condition, such that the Success condition showed higher positive, and lower negative affect across all blocks compared to the Failure condition. There was no significant main effect on performance. Furthermore, within-person centered Bayesian CLPMs showed suggestive evidence towards the cross-lagged paths of positive and negative affect on performance, but no evidence towards the reversed paths of performance on affect. These findings highlight that repeated summative feedback shapes affective trajectories that could impact subsequent performance. In educational contexts, these results underscore the importance of feedback that balances accuracy with encouragement; thereby helping learners maintain positive emotions and performance under repeated evaluation.

## Paper Session 29: Expectancy-Value Dynamics Across Time and Contexts

### Longitudinal Effects of Academic Self-Concept of Ability and Intrinsic Task Value in Adult Learning

**Presenting author:** Kiara-Noel Kamp, Universität zu Köln/ University of Cologne, Germany

**Co-author(s):** Luca Farina Hollricher, Universität zu Köln/ University of Cologne, Germany; Julia Gorges, Universität zu Köln/ University of Cologne, Germany

#### Abstract

This study investigates how general academic, course topic-specific, and school subject-specific self-concepts of ability (SCA) and intrinsic task values (ITV) shape expectancy of success and course-specific subjective task value (STV) among adult learners participating in further education. Drawing on Expectancy-Value Theory, we hypothesized that SCA and ITV at general, course topic-specific, and subject-specific levels affect adults' initial levels of course-specific expectancy of success and STV as well as their development during course participation. Using a four-wave longitudinal design, data were collected from 454 adults enrolled in English and IT courses at German adult education centers. Latent change score models show that expectancy of success and its development over time is strongly predicted by baseline SCA, with general academic SCA exhibiting the largest effects. Course topic- and school subject-specific SCA also predict both initial expectancy and its change over time, though more modestly. Regarding ITV, models show a similar pattern: general academic and course topic-specific ITV predict initial course-specific STV, whereas school subject-specific beliefs show weaker associations. Across models, changes in STV remained largely unexplained, partly due to minimal intraindividual variation and methodological constraints.

## Heterogenous Trajectories of Expectancy, Value, and Cost in Undergraduate Chemistry

**Presenting author:** Kristy Robinson, McGill University, Canada

**Co-author(s):** Patrick N. Beymer, University of Cincinnati, United States

### Abstract

Research on STEM motivation often documents average declines in students' expectancy and value beliefs and increases in cost beliefs, yet these averages mask substantial heterogeneity. In addition, the timing and pace of motivational change may matter for students' longer-term motivational beliefs and achievement-related outcomes. Using a situated expectancy-value framework, we examined trajectories of weekly expectancy, value, and cost among 1,730 students enrolled in a gateway general chemistry course in the United States. Students completed a baseline survey, 13 weekly surveys, and an end-of-semester survey, and achievement data were obtained from course records. Growth mixture modeling revealed four distinct classes of trajectories for each belief. For expectancy and value, 34-38% of students exhibited high and stable trajectories, whereas 27% showed low and stable cost. Other classes reflected steep early declines or increases with late recovery, gradual declines/increases, or initial increases followed by later declines. Trajectory membership predicted end-of-semester motivational beliefs, STEM intentions, and exam performance with high/stable expectancy and value and low/stable cost generally being associated with the most beneficial outcomes. However, late decline trajectories in some cases differed from early decline trajectories on key outcomes. Findings underscore that the shape and timing of motivational changes matter for STEM persistence and achievement. This study advances theory by linking dynamic course-specific experiences to more trait-like motivational beliefs and intentions, highlighting the importance of capturing heterogeneity in motivational development.

## Reference Frames Matter: Comparative Stems Shape Trait-State Variance in Expectancy-Value Beliefs

**Presenting author:** Patrick Beymer, University of Cincinnati, United States

**Co-author(s):** Daria Katharina Benden, University of Bonn, Germany

### Abstract

Research grounded in situated expectancy-value theory (SEVT) increasingly uses intensive longitudinal designs to study motivational processes in authentic learning situations. SEVT posits that students evaluate expectancy and task values in light of prior experiences and relative to current alternatives, comparative processes often left implicit in weekly survey items. We tested whether comparative stems embedded in weekly survey items affect the trait-state structure and reliability of expectancy-value measures and whether interindividual differences emerge consistently across comparative stems. Using 1,714 weekly reports from 215 students in statistics and biochemistry courses, we examined multilevel multitrait-multistate models separating stable between-student (trait-like) variance from week-to-week, occasion-specific variability. We compared three stems: temporal ("compared to last week"), dimensional-concurrent ("compared to other current courses"), and dimensional-retrospective ("compared to past courses"). Results showed both construct and stem differences. Across stems, perceived costs were substantially more trait-like than competence beliefs and interest/importance values, which were more state-like. Consistent with this pattern, motivational beliefs assessed at the start of the semester more strongly predicted the trait components of costs than those of competence beliefs and values. Across expectancy-value beliefs, temporal stems showed lower trait-like variance and lower reliability than dimensional stems,

indicating that reference frames shape what weekly measures capture. Gender differences in trait-like competence beliefs and interest/importance values were most pronounced for temporal comparisons. Overall, the findings indicate that reference frames shape how much weekly SEVT measures reflect stable differences versus week-to-week fluctuations and highlight that costs may function as a more stable, trait-like appraisal than positively-valenced task values.

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## When Do Competence Beliefs and Motivation Influence Each Other? A Timescales Perspective

**Presenting author:** Fernando Nunez-Regueiro, Université Grenoble Alpes, France

**Co-author(s):** Julien Chanal, University of Geneva, Switzerland

### Abstract

This communication examines the reciprocal relations between students' competence beliefs and intrinsic motivation by adopting a timescales continuum perspective. **THEORY:** Self-determination theory and related motivational frameworks posit that competence beliefs are a primary antecedent of intrinsic motivation, while also allowing for reciprocal influences whereby motivation may contribute to competence beliefs through learning experiences. However, empirical tests of these reciprocal relations have yielded mixed findings, including nonsignificant effects, particularly in primary school samples. We argue that these inconsistencies may reflect a misalignment between the time intervals of measurement designs and the timescale at which motivational processes unfold. **AIMS:** The present study investigates whether the detection of reciprocal relations between competence beliefs and intrinsic motivation depends on the timescale at which effects are examined, distinguishing faster effects from slower effects, and whether these patterns vary across academic domains. **METHOD:** Using two large-scale longitudinal datasets of primary school students assessed at intervals of approximately four to five months, we examine associations between competence beliefs and intrinsic motivation under alternative temporal specifications. **RESULTS:** Preliminary findings indicate that competence beliefs consistently predict intrinsic motivation at shorter timescales, whereas reverse effects are weaker and less systematically observed. Moreover, focusing exclusively on slow effects appears to obscure competence-to-motivation effects. **SIGNIFICANCE:** These results suggest that apparent null findings in prior studies may be attributable to temporal misspecification rather than to the absence of reciprocal motivational processes, underscoring the importance of aligning measurement intervals with the speed of psychological dynamics.

## Paper Session 31: Belonging, Motivation, and Dropout Risk

### Affective ties and motivation in uncertainty: pathways against university dropout intentions in Peru

**Presenting author:** Dora Herrera, Pontificia Universidad Católica del Perú, Peru; Marjhorí Gómez Matos, Pontificia Universidad Católica del Perú, Peru

**Co-author(s):** Lennia Matos, Pontificia Universidad Católica del Perú, Peru; Rafael Gargurevich, Pontificia Universidad Católica del Perú, Peru; Benjamin Lira, University of Pennsylvania, United States; Rogger Anaya, Pontificia Universidad Católica del Perú, Peru

#### Abstract

In Peru, persistent regional disparities, the unregulated expansion of universities, and high dropout rates are conditions that threaten human development. University attrition is a multicausal phenomenon that requires examining sociodemographic, institutional, academic and psychological factors. Adopting a quantitative approach, this study aims to identify how the affective or social-interpersonal factors (social skills and social support), as mediated by motivational or cognitive-individual ones (goal-efficacy and planning), are related with dropout intentions among university students. The sample comprised 536 students from eight public and private universities across three regions of Peru. Findings show that students reporting higher levels of social support and social skills are less likely to develop dropout intentions, particularly when these factors are mediated by goal-efficacy and planning. Differences by sex and region were also observed. Overall, the study underscores the central role of affective and motivational factors as protective psychological mechanisms against dropout intentions. Identifying these processes can help university leaders design multidimensional strategies for student retention. This study could contribute to support public policies aimed at reducing the loss of highly educated individuals who could positively transform Peruvian society.

### University Students' Motivational Profiles, Sense of Belonging and Drop-out Intentions

**Presenting author:** Henriikka Juntunen, University of Eastern Finland, Finland

**Co-author(s):** Jaana Viljaranta, University of Eastern Finland, Finland; Riikka Hirvonen, University of Eastern Finland, Finland; Markku Niemivirta, University of Eastern Finland, Finland; Heta Tuominen, University of Eastern Finland, Finland

#### Abstract

In this study, we examined (1) what kind of motivational (expectancy-value-cost) profiles can be identified among university students, (2) how sense of belonging predicts the likelihood of belonging to different motivational profiles, and (3) how the differently motivated students differ in their drop-out intentions. Altogether, 780 Finnish university students participated in the study. By using latent profile analysis, five distinct profiles were identified: Disengaged (6%), Indifferent (11%), Moderately motivated (21%), Struggling ambitious (27%), and Positively ambitious (29%). Having a higher sense of belonging was associated with an increased likelihood of membership into the Positively ambitious and a decreased likelihood into the Indifferent or Disengaged, compared to the Moderately motivated. There was no significant difference between the Moderately motivated and Struggling ambitious in terms of sense of belonging, or the drop-out intentions. The Positively ambitious reported the lowest drop-out intentions, whereas the Disengaged reported the highest. The two groups with high values, but different levels of costs differed in terms of sense of belonging and drop out intentions: having higher sense of belonging was associated with a higher

likelihood to belong to the Positively ambitious than the Struggling ambitious, that was further associated with more drop-out intentions. Overall, the Positively ambitious students seemed to be the most adaptive profile and the Disengaged the most maladaptive. The findings showed that a sense of belonging is strongly connected to students' overall motivational profile and that having low values and high costs is the most detrimental configuration for persistence in studies.

## Psychological Needs Satisfaction Is Related to Increased Engagement through Lower Levels of Distress

**Presenting author:** Ma. Jenina N. Nalipay, The Education University of Hong Kong, Hong Kong

**Co-author(s):** I Marie Joy S. Gallemit, The Chinese University of Hong Kong, Hong Kong; Ronnel Bornasal King, The Chinese University of Hong Kong, Hong Kong

### Abstract

Academic engagement significantly contributes to the academic success of university students. Hence, it is important to identify and understand factors associated with it. Past studies have provided evidence that both basic psychological needs satisfaction (BPNS) and psychological distress have significant associations with academic engagement, yet the mechanism of how these two constructs are related to engagement is yet to be understood. In this study, we examined a model in which BPNS is associated with increased engagement through lower levels of distress among university students. A survey was conducted among 4,872 students from the Philippines and the data were analyzed using structural equation modeling. Results showed that the model has excellent fit. BPNS was found to be related to lower levels of psychological distress, which in turn, were associated with increased academic engagement. The study highlights how social-contextual factors are related to students' psychological states, and how they are linked to motivational outcomes.

## Motivation, school belonging, and peer relationships as predictors of middle school grade retention

**Presenting author:** Joana Pipa, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

**Co-author(s):** Francisco Peixoto, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

### Abstract

Grade retention is a widely used yet highly controversial educational measure applied to students experiencing academic difficulties. Although academic underachievement is the primary justification for retention, growing evidence suggests that factors beyond academic performance contribute to retention decisions. In particular, the role of students' psychosocial characteristics remains underexplored. This study aimed to examine whether motivational orientations, school belonging, and peer relationships predict grade retention among elementary and lower secondary school students. Participants were 801 fifth- and seventh-grade students ( $M_{age} = 11.84$ ,  $SD = 1.40$ ; 49% girls). Students completed self-report measures of motivational orientations and school belonging, as well as sociometric tasks assessing peer acceptance during recess and collaborative group work. Results indicated that boys were more likely to be retained. Beyond sociodemographic factors, lower levels of school belonging and higher levels of avoidance goal orientation were associated with an increased likelihood of retention. Peer-related findings revealed a complex pattern: higher peer acceptance to play in the recess was associated with a greater likelihood

of retention, whereas lower selection for group work was also linked to retention risk. Taken together, these results suggest that lower peer acceptance in academic contexts, particularly collaborative learning activities, is associated with an increased probability of grade retention. Overall, the findings indicate that students display motivational, affective, and peer-related vulnerabilities prior to grade retention. The study contributes to existing research by highlighting the importance of psychosocial determinants and underscores the need to consider affective and social dimensions, alongside academic achievement, when making decisions regarding grade retention.

## Paper Session 32: Motivation, Program Design and Interventions Effectiveness

### Autonomous Motivation in Higher Education: A Systematic Review of Interventions and Effectiveness

**Presenting author:** Rani Dujardin, KU Leuven (BE), Belgium

**Co-author(s):** Fien Eelen, KU Leuven (BE), Belgium; Lynn Van den Broeck, KU Leuven (BE), Belgium; Ilke Grosemans, KU Leuven (BE), Belgium

#### Abstract

In times of rapid change and uncertainty, understanding how to foster students' motivation for learning is critical for higher education. This systematic literature review examined interventions aimed at enhancing autonomous motivation in higher education, with a focus on the types of interventions implemented and the measures used to evaluate their effectiveness. Five main intervention types were identified: instructional design interventions, gamification interventions, personal development interventions, research-based learning interventions, and collaboration interventions. Across studies, the assessment of autonomous motivation relied predominantly on pre-post self-report questionnaires, often measuring overall autonomous motivation, intrinsic motivation, or academic motivation. Few studies incorporated behavioural or process-sensitive measures, highlighting a gap in capturing the nuanced ways motivation is experienced during learning activities. Some studies also combined quantitative and qualitative methods, including interviews, open responses, and reflective logs, to better contextualize motivational outcomes. The review underscores the diversity of approaches used to both foster and measure autonomous motivation, offering guidance for future intervention design and evaluation in higher education.

### Responsiveness to Quotation-Based Relevance Interventions: Comparing Closed and Open-Ended Responses

**Presenting author:** Luis Fischer, University of Konstanz, Germany

**Co-author(s):** Cora Parrisius, Karlsruhe University of Education, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany; Ulrich Trautwein, University of Tübingen, Germany; Hanna Gaspard, University of Konstanz, Germany; Markus Kleinhanst, Institute for Educational Analysis Baden-Württemberg (IBBW), Germany

#### Abstract

Relevance interventions can increase student motivation and achievement, for instance by asking students to read and evaluate quotations that elaborate on the usefulness of a given subject. However, not all students might

respond equally well to such activities, and this might explain why their effects are limited to some groups of participants. Evidence on different indicators of student responsiveness to quotation-based interventions, however, is scarce. The purpose of this study is to (1) investigate how closed and open-ended responsiveness indicators in a relevance intervention are linked, (2) to identify their key predictors, (3) and to examine how they are associated with changes in utility value as the target outcome of this intervention. To this end, we analyzed data from  $N = 1,120$  academic track school students in Germany, who had participated in a quotation-based relevance intervention aimed at increasing motivation in mathematics. Answers to closed and open-ended responsiveness items were weakly correlated. Responsiveness was predicted by different student characteristics, including their prior mathematics motivation, gender, and vocational interests, although more significant associations emerged for closed than open-ended responses. Both indicators of responsiveness predicted changes in perceived utility value up until months after the intervention. Our findings suggest that closed and open-ended responses to the intervention are linked, lending support to using both of them for better understanding the effects of relevance interventions. Moreover, our evidence paves the way for personalized relevance interventions in the future.

### Evaluation of an online tool so support students' subject choices in secondary education

**Presenting author:** Hanke Korpershoek, University of Groningen, Netherlands

#### Abstract

In the Netherlands, 9th grade students in preparatory tracks for higher education have to choose a (combination of) school subjects in which they will take their final school examinations. These are important decisions, because many higher education programs have entry requirements. To support students in making well-informed decisions, we developed an online tool which provides personalized recommendations based on students' interest in the topics that are part of the national exams for each school subject. An algorithm calculates how proximal or distal the various options are to the student. The aim of this study was to evaluate the usefulness and workings of the tool, and explore whether such tool can help reduce students' uncertainty about educational choices. A sample of 2,442 students was used to evaluate the tool. The tool proved to be a suitable tool for supporting students and can help students with decision-making under uncertainty, by letting students weigh the pros and cons of each school subject regarding their personal interests.

### Can a STEAM Teacher Programme Shift Students' Satisfaction of their Basic Psychological Needs?

**Presenting author:** Juliana Abra-Olivato, EDUNOVA.ISPA - Interdisciplinary Research Centre in Education, Portugal

**Co-author(s):** José Castro Silva, ISPA-Instituto Universitário, Portugal

#### Abstract

In uncertain educational times, schools increasingly adopt innovative approaches (e.g., STEAM projects) that aim to strengthen students' engagement and well-being. Drawing on Basic Psychological Needs Theory, one of the six mini-theories of Self-Determination Theory (Vansteenkiste et al., 2020), this study examines whether a school-based STEAM professional development (PD) pathway for primary teachers is associated with short-term change in pupils' perceived autonomy, competence, relatedness, and novelty in the classroom. Using a quasi-experimental pre-post design, pupils in Grades 2–4 ( $n = 181$ ; experimental  $n = 119$ ; control  $n = 62$ ) completed the Basic Psychological Needs in the Classroom Scale (BPN-CS) at two time points (October–December 2025). Item-level

change scores ( $\Delta = \text{post} - \text{pre}$ ) were compared between groups using Mann–Whitney U tests, and within groups using Wilcoxon signed-rank tests; Holm correction addressed multiple testing across 17 items. Uncorrected analyses suggested small item-level differences favouring the experimental group on autonomy items ( $p < .05$ ), yet no between-group effects remained after correction. Within-group analyses indicated robust change for one autonomy item in both groups. We discuss methodological and contextual explanations for limited detectable change and outline a mixed-methods triangulation strategy to identify mechanisms through which STEAM PD may support pupils' motivational and affective experience.

## Paper Session 33: Motivation Regulation and Self-Regulated Learning

### Motivation regulation strategies among collaborative groups with varying situational motivation

**Presenting author:** Marjo Turunen, University of Oulu, Finland

**Co-author(s):** Tiina Törmänen, University of Oulu, Finland; Hanna Järvenoja, University of Oulu, Finland

#### Abstract

Research increasingly demonstrates that students' motivation fluctuates across learning contexts, tasks, and moment-to-moment. Prior research shows that learners manage these fluctuations with motivation regulation strategies as part of self-regulated learning (SRL), and that such regulatory processes can also be shared among peers through socially shared regulation of learning (SSRL). However, empirical research on motivation regulation at socially shared levels remains limited. This study addresses this gap by identifying shared motivation regulation strategies and examining their relation to groups' situational motivation during collaborative learning. Secondary school students ( $N = 95$ ) worked in small groups ( $N = 31$ ) on a collaborative science task. Group interactions were video recorded, and students completed situational motivation self-reports five times during the task, enabling groups to be categorized as High and Increasing or Medium and Decreasing situational motivation. Qualitative video analysis was used to identify groups' regulatory behaviors, including metacognitive monitoring and controlling strategies. Transition Network Analysis (TNA) was applied to model transition probabilities between the groups' regulatory behaviors, and a TNA subtraction plot was used to compare transition probabilities between the categories. The results indicate that groups relied on emotion regulation when experiencing motivational challenges, whereas efficacy talk was used to reinforce or sustain motivation. TNA further revealed that some strategies occurred repeatedly within the same regulation episodes (e.g., emotion regulation) while others followed each other sequentially (e.g., mastery-goal regulation – performance-goal regulation). The study advances understanding of how motivation regulation operates at a socially shared level and how these processes relate to fluctuating group motivation.

### How Metacognitive Knowledge of Motivation Shapes Regulation in Collaborative Learning

**Presenting author:** Emma Lehtoaho, University of Oulu, Finland

**Co-author(s):** Aishah Bakhtiar, University of Tasmania, Australia; Tiina Törmänen, University of Oulu, Finland; Kristiina Mänty, University of Oulu, Finland; Hanna Järvenoja, University of Oulu, Finland

#### Abstract

This study examines how secondary school students' ( $N = 95$ ) metacognitive knowledge of motivation (MCKM) relates to regulation processes during collaborative learning in small groups ( $N = 31$ ). Using a theoretical lens that integrates multiple motivational constructs, individual interviews were analyzed through deductive qualitative

content analysis to categorize students' descriptions of motivation into three perspectives: efficacy judgments, willingness to engage, and perceived significance. Based on these categories, students were classified as having either Broad or Narrow MCKM. Group-level profiles were then derived from member composition: Broad profile groups, Narrow profile groups, and Mixed profile groups. Video recordings of group work were coded for monitoring or controlling of motivation or cognition, and Ordered Network Analysis (ONA) was applied to explore structural and sequential patterns of regulation at both group and individual levels. Results suggest that Broad profile groups integrated motivation monitoring more consistently into regulation, often preceding cognitive control, while Narrow profile groups relied on task-anchored controlling. At the individual level, Broad MCKM supported longer sequences combining motivational and cognitive regulation, whereas Narrow MCKM favored shorter loops centered on task-execution. These findings underscore the importance of metacognitive knowledge of motivation for sustaining engagement and coordinating regulation in collaborative learning.

### Profiles of primary school students' regulation strategies and their link to student-related factors

**Presenting author:** Jenni Latva-aho, University of Jyväskylä, Finland

**Co-author(s):** Héctor J. Pijera-Díaz, University of Jyväskylä, Finland; Essi Vuopala, City of Oulu, Finland; Kristiina Mänty, University of Oulu, Finland; Piia Naykki, University of Jyväskylä, Finland

#### Abstract

To succeed in schoolwork, students need actively regulate their learning by using cognitive, metacognitive, and motivational strategies. Learning to use these strategies are crucial for students' academic success and lifelong learning, but little research has been devoted to strategy use in primary school, where students set the basis for their further learning. The aim of this study is to explore how primary school students (N = 473) perceive their cognitive, metacognitive and motivational strategies and how their gender, age, school attitude, achievement, and parental support are associated with these perceptions. Four significantly different profiles of primary school students perceived strategy use were found, differing on their activeness and motivation towards learning, namely high strategic learners, medium-high strategic learners, medium-low strategic learners and low strategic learners. The profiles, in turn, differed significantly in terms of students' gender, age, school attitude, achievement, and parental support. The results indicate that both the school attitude and the parental support play a crucial role in the use of students' cognitive, metacognitive, and motivational strategies, and attention should be given to these aspects starting from primary school. Furthermore, since gender and age influence the use different strategies, these factors should be considered when supporting primary school students' schoolwork. These findings deepen understanding of how primary school students use cognitive, metacognitive, and motivational strategies during schoolwork, highlighting that early profile identification can guide more personalized and effective scaffolding in these skills.

### Promoting Self-Regulated Learning: a Model-Based Evaluation of Learning Diaries

**Presenting author:** Thomas Martens, Medical School Hamburg, Germany

**Co-author(s):** Christian Weissert, Medical School Hamburg, Germany

#### Abstract

Self-regulated learning (SRL) is a key prerequisite for successful learning across educational contexts, yet interventions to foster SRL often yield heterogeneous results. This contribution reports a program of research examining learning diaries as a structured intervention to promote SRL, grounded in the Integrated Model of Learning and Action (IMLA). The IMLA conceptualizes learning as a cyclical process comprising a motivation phase

(taking responsibility for a learning gap), an intention phase (selecting a learning action), and a volition phase (performing a learning action), interconnected through short-, medium-, and long-term feedback loops. Five quasi-experimental, partly mixed-methods studies were conducted in secondary and higher education (total  $N = 665$ ). Quantitative measures assessed key IMLA constructs such as self-efficacy, outcome expectancy, and self-congruent monitoring, complemented by qualitative interviews. Results showed consistent positive effects on motivational and self-regulatory processes in secondary school students when reflection discussions were conducted by trained university students. Effects could not be replicated when older peers served as trainers or when the intervention was implemented with first-semester medical students, where stress, fear of failure, and entrenched learning habits impeded change. Delayed but stable effects were observed in upper secondary students at follow-up. Overall, learning diaries can effectively promote SRL under specific conditions: sufficient intervention duration ( $\geq$  six weeks), qualified trainers, manageable stress levels, and learners' willingness to reflect. The findings highlight the importance of contextual and developmental factors and caution against uniform SRL interventions across educational settings.

## Paper Session 34: Peer Relations, Social Networks, and Classroom Climate

### Friendship Networks and the Development of Math Motivation: A Longitudinal Social Network Analysis

**Presenting author:** Utku Caybas, Michigan State University, United States

**Co-author(s):** Lisa Linnenbrink-Garcia, Michigan State University, United States

#### Abstract

Friends often resemble one another in their motivational beliefs, yet it is difficult to determine whether such similarity emerges because students select friends who are already alike (i.e., selection) or because friendships gradually shape students' beliefs (i.e., influence). This study uses Stochastic Actor-Oriented Models (SAOM) to disentangle these selection and influence processes in the context of middle school students' math motivation. Guided by Situated Expectancy-Value Theory, we examined four motivational constructs (competence beliefs, interest value, utility value, and cost perceptions) across one academic year. Participants were 665 students in grades 5-7 from 21 classrooms in Turkey, who completed surveys of motivational beliefs and nominated their close friends across five waves with six-week intervals. SAOMs were estimated separately for each classroom to capture peer processes within distinct social environments, and effect estimates were aggregated using meta-analysis. Selection effects indicated that students were more likely to form and maintain friendships with classmates who shared similar levels of competence beliefs, interest value, and utility value. Influence effects suggested that friends played a role in shaping students' interest and utility value over time, with only marginal evidence for competence beliefs. Overall, findings show that friendship networks are an important socialization context for math motivation.

### Fluctuations in Affect and the Role of Occupation with Schoolwork in Secondary School Students

**Presenting author:** Johannes Serfontein, Open University of the Netherlands, Netherlands

**Co-author(s):** Linda van Zutphen, Open Universiteit, Netherlands; Laura Huiberts, Open Universiteit, Netherlands; Johan Lataster, Open Universiteit, Netherlands; Renate de Groot, Open University of the Netherlands, Netherlands

#### Abstract

The declining mental well-being of secondary school students highlights negative consequences for their school performance. Little is known whether the experience of positive and negative affect (PA; NA) is poor in general or if

the contextual factor of being occupied with schoolwork could play a role. The goal of this study is to investigate whether fluctuations in students' PA and NA over the week and over the day depend on whether they are occupied with schoolwork or not. Sixty-two secondary school students received 10 brief questionnaires each day for seven consecutive days collecting data on context (being occupied with schoolwork or not) and the experience of PA and NA, using the Experience Sampling Method. It was shown with multilevel regression analyses that momentary PA increased, and NA decreased across the days of the week, and over the day. Being occupied with schoolwork was associated with less PA and more NA, but did not show a moderation across the days of the week or over the day. The findings indicate that the experience of lower levels of PA and higher levels of NA tend to fluctuate as a function of being occupied with schoolwork (i.e., context) and should therefore not be approached as a general issue in secondary school students.

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### Students' relationship quality in class: Latent profiles, latent transitions and links to motivation

**Presenting author:** Juliane Schlesier, University of Wuppertal, Germany

**Co-author(s):** Ramona Obermeier, Johannes Kepler Universität Linz, Austria; Michaela Gläser-Zikuda, University of Erlangen-Nürnberg, Institute for Educational Science, Germany

#### Abstract

Early secondary school students' perceptions of their social relationships in class are closely linked to their levels of motivation. However, person-centred research examining patterns of social relationships with both peers and teachers remains limited. This study explored the existence, stability and transitions of latent profiles of students' social relationships over time, as well as their interconnectedness with students' motivation, gender, immigration background and educational track. The sample included 1343 5th grade students in Germany (first year after transitioning to secondary school), assessed at three time measurement points. Latent profile analysis (LPA) was used to identify patterns of students' perceived social relationship quality. We also applied latent transition analysis (LTA) to explore the stability and transitions between profiles over time, taking into account students' motivation, gender, immigration background and educational track. We identified four profiles of social relationship quality at each time point: low (P1), moderate (P2), high (P3) and solid (P4). Profiles with lower-quality relationships were the least stable across time. Intrinsic motivation was a key predictor of profile transitions, with higher motivation increasing the likelihood of moving to profiles with lower-quality relationships. Gender, immigration background and educational track influenced initial profile assignment significantly. The findings highlight the dynamic nature of perceived social relationships in early secondary school. Interventions that enhance intrinsic motivation might be useful in promoting students' social development.

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### Social Network Centrality and Emotional Dynamics in Classroom Learning: A Multilevel Approach

**Presenting author:** Alla Hemi, University of Haifa, Israel

**Co-author(s):** Adar Ben-Eliyahu, University of Haifa, Faculty of Education, Israel; Martin Daumiller, Institute of Psychology, Germany

#### Abstract

Background: Emotions are central to students' cognitive engagement and social adaptation, shaped by structural (social positioning) and affective (classroom climate) dynamics. Social network centrality contributes to emotional

experiences: proactive students may face exhaustion from sustained social demands, while popular students can benefit from peer validation but may encounter performance pressures. Classroom emotional climate, conceptualized as the collective intensity of emotional activation, may amplify or buffer these effects. Despite evidence linking social positioning or climate to emotions independently, integrative models examining their interplay remain rare. Aims: This study examined the role of social positioning (in-degree and out-degree centrality) in students' emotional experiences across four dimensions (positive/negative, activated/deactivated) and whether classroom emotional climate moderates these relationships. Methods: Data were collected from 1,284 high school students (50.5% female,  $M_{age} = 16.26$ ,  $SD = 0.88$ ) nested within 56 classrooms. Multilevel structural equation modelling examined relationships between social network centrality, emotions, and emotional climate as a moderator. Results: Higher out-degree centrality predicted reduced positive activated and deactivated affect, while in-degree centrality was linked to lower negative activated and deactivated affect. Classroom climate moderated these relationships: positive climate buffered emotional distress for students with high out-degree, while negative climate mitigated the buffering role of high in-degree. Conclusions: Social network centrality acts as both a resource and a stressor, moderated by classroom climate. These findings could inform interventions supporting emotionally sustainable social positioning and adaptive classroom climates.

## Symposium 13: Alternative Certified Teachers' Entry: Emotions and Motivation from a Multilevel Perspective

**Organizer:** Natalia Molina Otero, University of Bern, Switzerland

**Chair:** Julia Mori, University of Bern, Switzerland

**Discussant:** Helena Granziera, UNSW AUSTRALIA, Australia

### Abstract

Teacher shortage is an ongoing issue for governments and policy makers around the world (UNESCO & International Task Force on Teachers for Education 2030, 2024). In response, many countries have established alternative pathways into teaching. Within Europe, several education systems have introduced such routes (European Commission: EACEA, 2023). In this context, alternative certified teachers are those who enter teaching from other professions and/or outside traditional teacher training programs (Dadvand et al., 2024; Lucksnat et al., 2023). They often begin teaching with limited pedagogical knowledge and classroom experience (Kwok & Cain, 2023), making their induction/transition into the profession particularly significant. Along with pedagogical demands, emotional experiences and motivational processes are central for a successful transition into the teaching profession. Emotional experiences play an important role during the first years of teaching, as they influence burnout risk and shape coping responses that may include leaving the profession (Chang et al., 2013; Lindqvist et al., 2023). Motivational processes are equally important, as they interact with teachers' emotions and are associated with quitting intentions (Frenzel et al., 2016; Richardson & Watt, 2010). Given the importance of emotional experiences and motivational processes, the symposium examines how they unfold for alternative certified teachers and how they are perceived by mentors and school principals. By adopting this multilevel perspective, the four contributions from Austria, England, and Germany in the symposium offer a holistic view of the topic, aiming to stimulate discussion on how to best support alternatively certified teachers during job entry and strengthen their long-term retention.

### ***Alternative Certified Teachers' Emotions, Emotional Exhaustion & Intention to Quit During Induction***

**Presenting Author:** Natalia Molina Otero, University of Bern, Switzerland

**Co-author(s):** Silja Rohr-Mentele, University of Zurich, Institute of Education, Switzerland; Sarah Forster-Heinzer, University of Fribourg, Switzerland; Doreen Flick-Holtsch, Institute of Education, University of Zurich, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

#### **Abstract**

Teacher emotions at the beginning of their careers play an important role in their burnout tendencies and decisions to stay or quit the profession. In particular, positive and negative emotions relate differently to teachers' emotional exhaustion and intentions to quit. These associations have been separately examined on traditionally certified teachers, however how they unfold for alternative certified teachers remains under-explored. Alternative certified teachers are often recruited as a response to teacher shortages, so their retention is particularly relevant. This study examined the tendency of alternative certified teachers to experience positive and negative emotions and their associations with emotional exhaustion and intention to quit during the induction year, when they assume full teaching responsibilities while simultaneously beginning their pedagogical training. 218 alternative certified teachers completed an online questionnaire at the end of their first semester in an Austrian teacher training program. Teachers reported on four emotions (joy, pride, anger and anxiety), their emotional exhaustion, and their intention to quit the profession. Descriptive statistics and structural equation modeling were analyzed to study their emotional tendencies and the associations among the constructs. Results show that alternative certified teachers tend to experience high positive and low negative emotions in this phase. Positive emotions were negatively associated with emotional exhaustion, which associated positively with intention to quit; the indirect pathway was significant only in the positive emotions model. Together, the findings suggest a possible protective value of positive emotions and present a view of alternative certified teachers' emotional tendencies during the induction phase.

### ***Alternative Certified Teachers' Emotions, Motivation & Intention to Quit: Self and External Reports***

**Presenting Author:** Matthias Huber, University of Teacher Education Carinthia, Austria; Christine Haupt, University of Teacher Education Carinthia, Austria

#### **Abstract**

The first year of teaching represents a critical and emotionally demanding transition that substantially shapes teachers' motivation, well-being, and retention. This phase appears particularly challenging for teachers entering the profession through alternative pathways, who often face heightened demands alongside strong initial commitment. Previous research has established close links between teacher emotions, motivation, self-efficacy, and intention to quit, yet largely relies on self-reports and rarely integrates external evaluations or systematically compares entry pathways. Therefore, this study examines emotional and motivational dynamics during the induction phase. Teachers completed validated self-report measures of emotions, intrinsic and extrinsic motivation, self-efficacy, and intention to quit, while mentors provided parallel external evaluations of their mentees. The sample comprises 515 early career teachers and 145 mentors (N = 660) from Austria. Data were collected via an online questionnaire in December 2025, approximately three months after entry into the teaching profession. Alternative certified teachers report higher intrinsic motivation and elevated positive emotions compared to regularly trained teachers. Across all groups, intention to quit is strongly associated with negative emotions and lower self-efficacy, with these relations being more pronounced among alternative entry pathways.

Mentor evaluations partly align with teachers' self-reports but are generally more critical, indicating systematic self–other divergences. Teacher emotions mediate the link between motivation and intention to quit, with self-efficacy acting as a stabilizing resource. The findings highlight the central role of emotions in early career teachers' retention and underscore the importance of differentiated induction and mentoring approaches that account for diverse entry pathways and integrate external professional perspectives.

### ***Alternative Certified Teachers' Motivations & Experiences in School-Based Science Teacher Education***

**Presenting Author:** Violeta Negrea, National Institute of Teaching, United Kingdom

#### **Abstract**

Teacher motivation plays a critical role in recruitment, retention, and professional learning, particularly for alternatively certified teachers entering the profession through school-based routes. This study explores how a school-centred initial teacher training (SCITT) programme in England supports the motivation and professional development of trainee science teachers training via alternative certification pathways. Drawing on qualitative data from questionnaires, observations of training activities, and semi-structured interviews, the study examines how specific instructional features influence trainees' motivation, teaching orientations, and sense of efficacy. Thematic analysis reveals that experiential learning, modelled pedagogical practices, and structured opportunities to share prior professional experiences function as key motivational drivers, supporting the development of student-centred approaches and confidence in teaching science. These features contributed to trainees' intrinsic motivation by enhancing perceptions of competence, relevance, and professional growth. However, participants also identified challenges, including inconsistent feedback and limited guidance in lesson planning, which undermined confidence and engagement at critical stages of training. Framed through concepts of pedagogical content knowledge and teacher self-efficacy, the findings highlight how school-based programmes can either strengthen or constrain motivation during the transition into teaching. The study contributes to understanding how motivationally supportive pedagogies within initial teacher education can enhance learning, confidence, and commitment among alternatively certified teachers, with implications for the design of training programmes aimed at addressing teacher shortages and improving retention in science education.

### ***Career Entry of Alternatively Certified Teachers as an Organizational Task: Principals' Perspectives***

**Presenting Author:** Nicole Zaruba, Hochschule Magdeburg-Stendal, Germany; Raphaela Porsch, University of Vechta, Germany

#### **Abstract**

Germany's ongoing teacher shortages have prompted a growing dependence on alternative certification routes. These pathways allow individuals to join the teaching profession without having completed traditional teacher education. Instead, they undergo parallel qualification programs while actively working as teachers (Author et al., 2023). Existing research on alternative certification has predominantly focused on teachers' perspectives, highlighting relevance of mentoring and social support (Richter et al., 2022; Author et al., 2023). Other studies have examined the perspective of school principals, who document both potentials and challenges during career entry (Bellenberg et al., 2020; Arndt, 2024) while describing school-based support as resource-intensive (Author, 2025). This raises questions about how responsibility for support during early career entry is attributed across organizational levels. Drawing on an organizational socialization perspective (Bauer & Erdogan, 2011), this

qualitative study examines school principals' views on the career entry of alternatively certified teachers in Germany and their attribution of responsibility for support structures. Semi-structured interviews were conducted with seven principals from secondary schools and analyzed using thematic coding. Findings show that principals perceive high initial motivation among alternatively certified teachers, which they regard as fragile due to high teaching loads, limited opportunities for gradual entry, and challenges related to classroom management, lesson planning, and organizational routines. While some principals report school-based support structures, others identify mentoring and reduced workloads as necessary but locate responsibility for their implementation primarily beyond the school level. The findings highlight the need to clarify responsibility and establish binding organizational support structures in alternative certification pathways.

## Symposium 14: Contemporary Research on Gender & STEM: From Childhood to Adolescence Across International Contexts

**Organizer:** Helen Watt, The University of Sydney, Australia

**Chair:** Helen Watt, The University of Sydney, Australia

**Discussant:** Jacquie Eccles, University of California, Irvine, United States

### Abstract

**Objectives.** Four paper presenters and Discussant are contributors to the upcoming Edward Elgar Research Handbook on Gender and STEM, exploring gendered influences on STEM experiences, engagement and participation. Persistent under-representation of girls/women in advanced mathematics and physical sciences continues to restrict access to equal pay and career status. Declining participation in these STEM fields also fuels to meet the demands for more 'STEM'-qualified workers. **Overview.** Papers encompass primary/elementary (Papers-1&2) and secondary schooling (Papers-3&4) by researchers from diverse countries: Finland, USA, Korea, Germany, Australia. Designs span empirical naturalistic modelling (Papers-1&4), interventions (Paper-2) and a systematic review (Paper-3). Foci include dimensional comparisons as influences on childhood mathematics motivations (Paper-1); interventions with children and parents targeting mathematics confidence (Paper-2); development of gendered adolescent STEM expectancy-values (Paper-3); links between adolescents' gendered mathematics motivations, academic buoyancy and teacher supports and senior secondary mathematics aspirations (Paper-4). All researchers attend to implications for children/adolescents' futures and developments for policy/practice. **Significance.** The Handbook offers the possibility to comprehensively map the field spanning theoretical, policy, historical, and domain-specific perspectives. This can serve as a 'road-map' for scholars into diverse perspectives and we hope constructively guide policy levers to address gendered STEM futures. **Structure.** Each paper presentation will be 17 minutes followed by short clarification questions, followed by our Discussant (10 minutes) to draw out overarching themes, contrast and interpret complementary findings, and distill important directions for next policy steps and partnerships. We close with 10 minutes open questions and exchange with audience (90 minutes total).

### ***Gendered motivational trajectories and dimensional comparison processes across elementary school***

**Presenting Author:** Anna Widlund, Åbo Akademi University, Finland

**Co-author(s):** Heta Tuominen, University of Eastern Finland, Finland; Markku Niemivirta, University of Eastern Finland, Finland; Johan Korhonen, Åbo Akademi University, Finland

#### **Abstract**

Mathematics motivation seems to decline for many across school years, especially among girls, leading to increasing gender differences in students' math-related motivational beliefs. Therefore, it seems relevant to investigate whether gender differences might be rooted in dimensional comparison processes across different school domains. This study examined the role of gender in the development of self-concept and interest in mathematics and L1 (i.e., a contrasting academic domain) across primary education, and whether dimensional comparison processes between these key domains differ between genders. To compare growth trajectories and cross-domain relations between boys and girls, multigroup latent growth modeling was applied to a sample of Finnish students (N = 560, 54% girls), followed up through grades 4–6 (ages 10–12) in 2022–2024. The findings suggested that while boys' math self-concept remained high and stable across grades 4–6, a significant decline was detected among girls. In L1, declines in self-concept and interest were detected among both genders. When studying cross-domain relations, we found dimensional comparisons among boys that seemed to strengthen their math motivation, whereas girls' language arts self-concept was related to a steeper decline in math interest. These findings suggest that dimensional comparison processes emerge already in elementary school. Coupled with gendered domain-specific stereotypes, these may function to strengthen boys' math motivation, while they might have negative consequences for girls' math interest.

### ***Addressing gendered math confidence in primary school: Interventions targeting math ability beliefs***

**Presenting Author:** Hyun Ji Lee, Hunter College, CUNY, United States

**Co-author(s):** Mimi Bong, Korea University, Republic of Korea

#### **Abstract**

The gender imbalance in STEM fields has long been a societal concern, which has been partly attributable to the gendered development of math competence beliefs. Recent research has identified children's general beliefs about the nature of math ability, such as math ability mindsets and gender stereotypes, as crucial contributing factors. In this study, we introduce our recent intervention efforts targeting 3rd and 4th graders and their parents in Korea, where parents are particularly influential socializers of children's self-beliefs and stereotypes. These intervention programs were designed to improve children's confidence in math by addressing their ability mindsets and gender stereotypes, as well as those of their parents. The findings from the three intervention studies suggest that interventions targeting these beliefs and actively involving parents may be a promising avenue to fostering math confidence for both girls and boys.

### ***A systematic review on gendered adolescent development of expectancy-values in STEM-related fields***

**Presenting Author:** Rebecca Lazarides, University of Potsdam, Germany

**Co-author(s):** Wendy Symes, University of Münster, Germany

#### **Abstract**

Girls' lower participation in science, technology, engineering and mathematics (STEM) activities and careers contributes to persistent gender segregation, unequal pay and economic inequality. Situated expectancy-value theory (SEVT; Eccles & Wigfield, 2020) provides a comprehensive framework for understanding how motivational beliefs—shaped by cultural, societal and socialization influences—guide educational and occupational choices. Drawing on SEVT, this systematic review synthesizes empirical evidence on gender differences in (a) the levels and developmental changes of expectancies and values in STEM domains during adolescence, and (b) the role of socializers' beliefs and behaviors in these motivational trajectories. We searched the Web of Science and PsycInfo databases for empirical studies and meta-analyses published in the past 20 years in leading peer-reviewed journals in educational and developmental psychology. Across studies, boys consistently reported higher motivational beliefs in STEM subjects than girls throughout adolescence. This gender gap was robust across types of motivational belief (expectancies and values), developmental period (early and late adolescence), STEM domain (mathematics and science) and cultural context. Gender differences were further found in the change in motivational beliefs throughout adolescence. Differences persisted over time due to a tendency for girls to maintain higher levels of motivational belief in non-STEM versus STEM domains. Parents' and teachers' gendered beliefs and stereotypes emerged as key contributors to these disparities. Overall, SEVT offers a powerful lens for explaining girls' underrepresentation in STEM. Future research should explore socialization processes and cross-cultural variations to better understand and ultimately reduce the gender gap in STEM motivation and participation.

### ***Adolescents' mathematics intentions: How teacher support and academic buoyancy shape motivations***

**Presenting Author:** Erin Mackenzie, Southern Cross University, Australia

**Co-author(s):** Kathryn Holmes, Western Sydney University, Australia; Helen Watt, The University of Sydney, Australia; Nathan Berger, Western Sydney University, Australia

#### **Abstract**

Declining enrolments in advanced senior secondary mathematics, alongside persistent gender disparities, raise concerns about meeting future STEM workforce needs. Understanding student attitudes and intentions in junior secondary school is critical. While ability perceptions and task values are known predictors of mathematics enrolment, the role of teacher support and academic buoyancy in mathematics is less well understood. This study aimed to determine the extent to which adolescents' perceived support from mathematics teachers, together with their mathematical academic buoyancy, predict their mathematical ability perceptions and task values, and how these relate to intended level of senior secondary mathematics enrolment. Participants were 1153 grades 7 to 10 adolescents from 20 schools in Australia. Structural equation models tested the hypothesised model, where teacher support and mathematical academic buoyancy predicted intended level of mathematics study, via perceived talent, intrinsic and utility values, and psychological cost (mathematics anxiety). Academic buoyancy predicted all motivation factors; teacher support predicted intrinsic and utility values. Intrinsic value was the strongest predictor of intended mathematics enrolment level, then perceived talent and utility value. Academic buoyancy had a stronger relationship with intrinsic value and lower mathematics anxiety for girls, while teacher

support had a stronger relationship with intrinsic value for boys. Girls also reported lower perceived mathematical talent and academic buoyancy, and higher mathematics anxiety than boys. The findings suggest that girls especially may benefit from interventions targeting academic buoyancy in mathematics. At the same time, pedagogical interventions to increase intrinsic value should increase girls' and boys' enrolments in advanced mathematics.

## Symposium 15: Achievement goal orientations: Patterns, antecedents, and outcomes across educational levels

**Organizer:** Ita Puusepp, Vrije Universiteit Amsterdam, Netherlands

**Chair:** Ita Puusepp, Vrije Universiteit Amsterdam, Netherlands

**Discussant:** Martin Daumiller, Institute of Psychology, Germany

### Abstract

Students' motivation plays an important role in how they engage in learning and cope with academic challenges, ultimately shaping a diverse set of student outcomes from achievement to well-being. At the same time, students' motivation is an aspect that can be influenced and shaped to support better learning and outcomes. Therefore, it is especially important to understand such motivational and affective dynamics during uncertain times. While various frameworks exist to describe and explain student motivation, the studies in this symposium focus specifically on achievement goal orientations – generalized tendencies to pursue specific goals in academic settings. Spanning Finland, Estonia, and the Netherlands, the studies in this symposium involve participants from late elementary school through university. The studies examine the factors influencing which goals students set in learning (Papers 1, 3, and 4) as well as how these orientations relate to learning and outcomes such as motivational beliefs and effort, academic achievement, and ill-being (Papers 2–4). By including both variable- and person-oriented studies and cross-sectional as well as longitudinal designs, this symposium provides a comprehensive view of achievement goal orientations. Additionally, the findings offer considerable practical value by highlighting potential antecedents of these goal orientations and by identifying specific student subgroups that may need tailored learning support due to their different motivational profiles.

### *Personal, classroom, and perceived teacher goals: Interrelationships over a transition*

**Presenting Author:** Anna Rawlings, Åbo Akademi University, Finland

**Co-author(s):** Johan Korhonen, Åbo Akademi University, Finland; Heta Tuominen, University of Eastern Finland, Finland

### Abstract

Classroom goal structures are seen as directing students' personal goals. However, multi-year longitudinal studies on the relationship between personal goals and the perceived goals of classroom peers and teachers during early to mid-adolescence are relatively sparse. Furthermore, achievement goal orientation profiles have been found to remain quite stable across the transition from primary to lower secondary school. Given that this transition entails major changes in classroom composition as well as the way in which instruction is arranged, this observed stability suggests relative independence of personal goals from classroom goals. In the present research, we examined the stability and interrelationships between students' achievement goal orientations, classroom goal structures, and perceived teacher goals in the domain of mathematics from 6th to 8th grade, in a cross-lagged panel model design. Effects from classroom goals and perceived teacher goals on student achievement goal orientations were found to

be rather sparse and small, whereas the predictions from achievement goal orientations on classroom goals and perceived teacher goals were stronger and more numerous. The findings highlight the significance of students' domain-general personal goal orientations as directing their perceptions of the domain-specific goals of significant others, such as classroom peers and teachers.

### ***Achievement goal orientations, motivational self-regulation and persistence: A person-oriented study***

**Presenting Author:** Eve Kikas, Tallinn University, Estonia

**Co-author(s):** Ita Puusepp, Vrije Universiteit Amsterdam, Netherlands

#### **Abstract**

Guided by the Metacognitive and Affective Model of Self-Regulated Learning (MASRL; Efklides & Schwartz, 2024), we examined how the Person-level indicators of achievement goal orientations relate to the Task x Person level indicators of motivation regulation strategies and task persistence. The sample included 538 10th grade students. Mastery-intrinsic, mastery-extrinsic, performance-approach, performance-avoidance, and work-avoidance orientations and task persistence were assessed with a questionnaire, motivation regulation strategies with an open-ended scenario-based task. Based on latent profile analysis, four achievement goal orientation profiles were identified: Nonadaptive, Mastery-Oriented, High-All, and Average-All. Motivation regulation strategies were categorized into intrinsic, extrinsic, learning strategies, and other strategies. Configural frequency analysis was used to identify types (statistically over-represented patterns) and antitypes (statistically under-represented patterns) among the configurations of (1) motivation regulation strategies, (2) achievement goal profiles and motivation regulation strategies, and (3) goal profiles and task persistence levels. Results revealed several types of goal profile and strategy configurations, including types indicating that High-All profile typically mentioned only extrinsic strategies, while Average-All and Mastery-Oriented profiles typically described intrinsic alongside extrinsic strategies. Regarding task persistence, students in Nonadaptive and Average-All profiles were typical in the lowest persistence quartile, whereas those in High-All profile were typical in the highest persistence quartile. These findings provide insight for supporting students' motivation and metacognition, offering practical implications for teacher education. The study contributes to the MASRL model, empirically demonstrating expected relations between indicators at the Person- and the Task x Person level.

### ***Making the grade but feeling exhausted? Achievement goal orientations, perfectionism, and well-being***

**Presenting Author:** Heta Tuominen, University of Eastern Finland, Finland

**Co-author(s):** Henriikka Juntunen, University of Eastern Finland, Finland; Anna Kuusi, University of Eastern Finland, Finland

#### **Abstract**

Although studies have shown that both achievement goal orientations and perfectionism contribute to well-being, the associations between these three factors have rarely been investigated. In this study, we applied a person-oriented approach and examined 1) what kinds of achievement goal orientation profiles can be identified among general upper secondary school students, 2) how perfectionistic tendencies predict the likelihood of belonging to different profiles, and 3) how the profiles differ with respect to study-related burnout. The participants were 1950 Finnish general upper secondary school students. Using latent profile analysis, five profiles were identified: indifferent (37%), performance-oriented (23%), success-oriented (17%), mastery-oriented (17%), and avoidance-oriented (7%). Profile membership was predicted by perfectionistic tendencies, for example, higher levels of

perfectionistic strivings increased the likelihood of belonging to the success- and mastery-oriented groups, while higher levels of perfectionistic concerns and socially prescribed perfectionism increased the likelihood of belonging to the performance-oriented group. Further, the profiles differed significantly in burnout. For instance, mastery-oriented students reported very low levels of all burnout symptoms, whereas avoidance-oriented students displayed rather high levels of burnout, especially mental distance. Mastery- and success-oriented students expressed equally low mental distance, but success-oriented students scored higher on all other burnout symptoms. Performance-oriented students were characterized by relatively high cognitive impairment. The findings indicated that students' perfectionistic strivings, perfectionistic concerns, and socially prescribed perfectionism are differently related to their motivational profiles, which have important implications for students' academic well-being. There appears to be a link between perfectionistic concerns, a focus on performance, and study-related burnout.

### ***Undergraduate mindset profiles: Associations with motivation, effort, achievement, and burnout***

**Presenting Author:** Ita Puusepp, Vrije Universiteit Amsterdam, Netherlands

**Co-author(s):** Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Meimei Liu, Vrije Universiteit Amsterdam, Netherlands; TuongVan Vu, Vrije Universiteit Amsterdam, Netherlands; Junlin Yu, University of Helsinki, Finland; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

#### **Abstract**

Background: Students' beliefs about the malleability of abilities (a.k.a. mindset) are suggested to organize their effort beliefs and achievement goals into a meaning system – a framework that shapes how they construe meaning in learning situations. Growth mindset is assumed to be coupled with positive effort beliefs and mastery goals and fixed mindset with negative effort beliefs and performance goals. However, recent studies paint a more complex picture: groups of students characterized by alternative combinations of these constructs exist. Aim: The aim of this study was to identify distinct combinations of mindset, effort beliefs, and achievement goals (i.e., mindset profiles) among undergraduates and to examine between-profile differences in a diverse set of academic outcomes: motivation, effort, achievement, and well-being. Sample: Self-report questionnaire data was collected from 849 undergraduates. Methods: Latent profile analysis was conducted using mindset, effort beliefs, and achievement goals. Results: Four profiles emerged: fixed mindset – low performance goals (FM-LPG; n=38), mixed mindset – moderate performance goals (MM-MPG; n=275), growth mindset – low performance goals (GM-LPG; n=123) and growth mindset – high performance goals (GM-HPG; n=413). Growth mindset profiles demonstrated better outcomes than other profiles on several indicators, with the GM-HPG having the most advantageous outcomes. Conclusions: Mindset profiles identified in earlier studies among adolescents were replicated, with better academic outcomes for growth mindset profiles. However, the theory-divergent GM-HPG profile showed even better outcomes than the GM-LPG profile. This contrasts findings among adolescents, where the GM-HPG profile was less adaptive than profiles with lower performance goals.

## Symposium 16: Perceived and objective difficulty – how are they related to motivation and performance?

**Organizer:** Luke Fryer, The University of Hong Kong, Hong Kong

**Chair:** Katariina Nuutila, University of Helsinki, Finland

**Discussant:** Maria Tulis, University of Education Weingarten, Germany

### Abstract

Objective and perceived difficulty can hamper performance and motivation while potentially supporting task processing. Also, difficulty might alter the effects of motivational and contextual factors on students' experiences. However, research on the effects of perceived and objective difficulty on motivation and learning is limited, as is the work on factors influencing perceived difficulty. Thus, the present symposium will address the antecedents and consequences of perceived and objective difficulty across four papers. Paper 1 and 2 focused on mathematics tasks with a micro analytical design: Paper 1 examined predictions between adults' perceived difficulty, self-efficacy, and situational interest, results showing them to be differently connected across several time points. In Paper 2, predictions between adolescent students' perceived difficulty, self-efficacy, and anxiety during mathematics tasks were investigated, findings showing anxiety to have a consistent effect on perceived difficulty. Paper 3 focused on how difficulty level moderates the effects of self-efficacy and different classroom qualities on elementary and secondary school students' mastery experiences, the findings demonstrating self-efficacy to impact mastery experiences the most when tasks were hard. Last, in Paper 4, the non-linear relationship between perceived difficulty and physiological arousal was investigated with adult participants in a laboratory setting. Findings indicated that arousal was highest when perceived difficulty was moderate. Overall, the findings from the four papers highlight the complex role objective and perceived difficulty have in task processing. Bringing the papers with their different perspectives together in the symposium will bridge different theoretical frameworks and methods applied in research on difficulty.

### ***Are task interest and task difficulty sources of self-efficacy?***

**Presenting Author:** Luke Fryer, The University of Hong Kong, Hong Kong

**Co-author(s):** Alex Shum, The University of Hong Kong, Hong Kong

### Abstract

Background: Self-efficacy is perhaps the most important latent educational individual difference for explaining academic success. It is therefore critical to reach beyond Bandura's foundational sources of self-efficacy and build upon budding research seeking to understand how specific academic tasks might contribute to self-efficacy. Two aspects of the task experience which have demonstrated robust connections to future self-efficacy are situational interest and task difficulty. Research Questions: After controlling for prior knowledge and self-efficacy, the interconnections between task specific situational interest and perceived difficulty, and their contribution to future self-efficacy was tested. Methods: An online study was designed and conducted drawing on participants from Prolific: Ages 18-22, USA, n=395 (a priori power analysis conducted); 20-30 mins 6 USD for completion. Participants completed 4 algebra questions (word problems) regarding personal finance; completing pre-post measures and short self-report after each task. The data was modelled fully-forward, latent SEM. Results: SEM findings highlight the pervasive, separate roles of prior knowledge and self-efficacy for task experiences. The unique, somewhat counterintuitive role of perceived difficulty (single large negative  $\beta$ ) and situational interest (multiple large positive  $\beta$ s) presents a basic picture for the complexity of personal task experience contributions to academic self-efficacy.

Discussion/Conclusions: The value of the present crowd-participant based approach to unpicking complex inter-relationships towards the refinement of theory, and the emerging sketch of how academic tasks support/impair self-efficacy development will be discussed.

### ***Predictions between students' anxiety, self-efficacy, and perceived difficulty during math tasks***

**Presenting Author:** Katariina Nuutila, University of Helsinki, Finland

**Co-author(s):** Jari Metsämuuronen, University of Turku, Finland; Mikko-Jussi Laakso, University of Turku, Finland; Heta Tuominen, University of Eastern Finland, Finland; Anna Tapola, Åbo Akademi University, Finland; Katarina Alanko, University of Turku, Finland

#### **Abstract**

Math anxiety (i.e., feeling of tension and anxiety that interferes with the solving of mathematical problems; Richardson & Suinn, 1972) impairs performance and decreases mathematics motivation (Ashcraft, 2002). It influences and is influenced by self-efficacy (i.e., confidence in one's ability to perform well; Bandura, 1986), but these relationships have mostly been studied at the level of more generalised beliefs and traits, and less is known about their on-task relationships. Perceived difficulty (i.e., subjective appraisal of task difficulty; Efklides, 2009) may also influence emotions such as anxiety, but its role in motivation and performance has been overlooked (Eccles & Wigfield, 2020). Thus, the present study examined these temporal on-task relationships during mathematics tasks. In order to do this, adolescent students (8th and 9th graders, N = 333) completed a booklet comprising 79 task items in an online learning environment during a 75-90 min session. In three different tasks, students rated their anxiety, self-efficacy, and perceived difficulty before and after the task. By utilising structural equation modeling, their mutual predictions and effects on performance were examined. Results showed that anxiety predicted higher perceived difficulty in all of the tasks, and self-efficacy, in turn, to predict performance positively in each task. The finding that anxiety predicted perceived difficulty, even though it was mostly unrelated to performance and not predicted by prior ability, implies that anxiety affects task perceptions independent of actual skills, and the consequences of higher perceived difficulty should be investigated more in the future.

### ***Classroom quality and self-efficacy effects on mastery experiences for easy, medium, and hard tasks***

**Presenting Author:** Karin Street, Western Norway University of Applied Sciences, Norway

**Co-author(s):** Lars Malmberg, University of Oxford, United Kingdom; Ulrich Dettweiler, University of Stavanger, Norway; Gabriel Stylianides, University of Oxford, Cyprus

#### **Abstract**

Mastery experiences are a key source of students' self-efficacy, promoting academic performance, motivation, and engagement. Students are expected to experience mastery when the teaching environment is conducive to learning and tasks are at an optimal level of challenge. To examine the effects of observed classroom quality on students' difficulty-graded mastery experiences in mathematics (measured at the end of the lesson), we investigated the roles of classroom quality—encompassing emotional support, classroom organisation, instructional support, and student engagement—and lesson-specific self-efficacy (measured at the beginning of the lesson). The study included 170 sixth- and tenth-grade students in Norway, each observed during one of several four-lesson sequences in which a new mathematics topic was introduced. Consistent with Bandura's idea of challenge or difficulty-graded beliefs, during each lesson the students reported on both lesson-specific self-efficacy (how well they thought they could carry out tasks) and on mastery experiences (how well they thought they did on the tasks) for easy, medium difficulty, and hard mathematics tasks. Students' mastery experiences varied considerably

across lessons. Cross-classified structural equation models demonstrated that mastery at the end of each lesson was predicted by self-efficacy for more difficult tasks at the beginning of each lesson, and by higher instructional support and student engagement (but not emotional support or classroom organisation). Overall, the findings corroborate the idea that high instructional support (e.g., promotion of higher order thinking, appropriate teacher feedback) and student engagement (e.g., collaborative learning, enjoyment, positive interactions) can enhance mastery experiences in mathematics.

### ***Psychophysiological Responses to Changes in Perceived Task Difficulty***

**Presenting Author:** Franziska Eckerskorn, LMU Munich, Germany

**Co-author(s):** Miriam Wünsch, Ludwig-Maximilians-Universität München, Germany; Lars Malmberg, University of Oxford, United Kingdom; Anne C. Frenzel, Ludwig-Maximilians-Universität München, Germany; Reinhard Pekrun, Ludwig-Maximilians-Universität (LMU), Germany

#### **Abstract**

This study explores the relationship between perceived difficulty and physiological arousal during an achievement task, moderated by perceived task value. Drawing on emotional and motivational theories such as control value theory (Pekrun, 2024) and motivational intensity theory (Brehm & Self, 1989), we hypothesize a curvilinear association between difficulty appraisal and physiological arousal at the within-person level. In a repeated-measures design, 68 female adult participants completed five blocks of a numerical reasoning task with varying difficulty. During task completion, various physiological measures — skin conductance, heart rate, and heart rate variability — were recorded, alongside self-reports of perceived difficulty and value following each block. Multilevel linear models revealed a significant quadratic relationship between perceived difficulty and physiological arousal: lower physiological arousal at both very easy and very difficult levels, with the strongest arousal at moderate difficulty. This pattern was more pronounced when perceived task value was high. Our findings align with previous work, mainly from the realm of motivational intensity theory (Brehm & Self, 1989), suggesting that effort, and therefore, physiological arousal, peak at moderate difficulty. These results emphasize that overly high perceived task difficulty can lead to disengagement, as predicted by emotional and motivational theories. They also suggest that physiological measures may be able to serve as unobtrusive indicators of task appraisal, offering potential for real-time monitoring and optimizing learning experiences.

## **Symposium 17: Reducing the Fragmentation of Motivational Constructs and Theories: A call to the field**

**Organizer:** Aline Alves-Wold, University of Stavanger, Norway; Thomas Martens, Medical School Hamburg, Germany

**Chair:** Aline Alves-Wold, University of Stavanger, Norway

**Discussant:** Jenefer Husman, University of Oregon, United States

#### **Abstract**

This symposium seeks to illustrate strategies to overcome fragmentation in motivation research (e.g., Greene, 2022; Koenka, 2020; Mischel, 2008; Pekrun, 2024; Wigfield & Koenka, 2020) by theoretical and methodical differentiation and integration. The first contribution outlines the problems of overlapping constructs and theories and proposes strategies for theoretical integration. The second presentation discusses perspectives for comparing

motivational constructs across studies. The third contribution introduces a database approach to strengthen construct validity. The fourth contribution presents WARM-E, a collaborative platform designed to systematize motivational constructs and propositions and to provide tools for integration and visualization. The contributions are discussed by a leading expert in educational motivation research. Together, these contributions offer complementary perspectives on how the field can move from fragmented theories and isolated findings towards a common usage of motivational constructs, and serve as initial steps towards a more cumulative, coherent body of knowledge.

### ***Overcoming fragmentation in motivation science: Why, when, and how should we integrate theories?***

**Presenting Author:** Reinhard Pekrun, University of Essex, United Kingdom

#### **Abstract**

Theories in motivation science are fragmented. Theoretical integration is needed to overcome this situation. In this presentation, I first discuss whether and when we should integrate theories, and when we should refrain from doing so. I then address strategies for integrating constructs and propositions. I argue that successful integration reduces redundancy and simplifies the conceptual space used to describe, explain, or predict motivational phenomena. However, successful integration requires not only theoretical work but also empirical validation, strategic efforts within the scientific community, and changes in institutional policies. In addition, I discuss that within-discipline integration alone is not sufficient to overcome theoretical stagnation. We also need to attend to advances in neighboring disciplines, enhance the precision of theories of motivation, and differentiate motivation theory to consider the specificity of different constructs, populations, and sociocultural contexts.

### ***Contextual Perspectives for Integrating Motivational Constructs***

**Presenting Author:** Thomas Martens, Medical School Hamburg, Germany

#### **Abstract**

On the surface, constructs from different motivational theories look very similar and might be integrated into a common theory or stored in a common database. This contribution discusses three perspectives that provide a peek below the surface of motivational constructs. (1) Person versus Environment A common perspective is that a person is expecting some result within the environment, with learning achievement being a prominent construct. The impact of the person on the environment can be defined as engagement, whereas the impact of the environment back on the person can be defined as transformation. For constructs like self-efficacy, both directions can be assessed: learning achievement predicted by self-efficacy or change in self-efficacy by the learning experience. This distinction has implications for theory and practice. (2) Time Frame Most motivational constructs refer to a meso-level time frame (hours, days, weeks). Micro-level time frames (milliseconds, seconds, minutes) can be measured, for example by physiological measures, but theoretical integration is still limited. Macro-level time frames (months, years, decades) suffer from a lack of longitudinal studies that follow a within-person perspective. (3) Self-regulated versus Externally Controlled Motivation Learning is to some degree self-regulated, but the degree varies widely. In school contexts, self-regulation often refers to externally defined learning goals. Within Self Determination Theory, autonomy plays a major role, whereas other theories focus on metacognitive steering processes. Overall, these three perspectives have implications for selection of constructs, theory, and research, e.g. for developing a meta-theoretical framework of motivation.

### ***Construct validity: A database solution to open meta-science***

**Presenting Author:** Quint Oga-Baldwin, Waseda University, Japan

**Co-author(s):** Luke Fryer, The University of Hong Kong, Hong Kong; Alex Shum, The University of Hong Kong, Hong Kong; Nicolas Emerson, Waseda University, Japan

#### **Abstract**

Construct validity sits at the heart of all of the social sciences. Every instrument created to measure any construct most often consists of survey items, each designed to represent a specific aspect. The minutiae of these constructs is resolved by differences in the items, with differing ideas theoretically represented by differently worded items. Unfortunately, many constructs contain elements of “old wine, new bottles.” Wordings for items can be similar or nearly identical to the items used in other surveys. For theoretical parsimony, it is necessary to peel back the layers of the wordings used in these surveys to compare their contents. In order to achieve this, a database of these constructs is needed to make adequate comparisons and determine the extent of jingle-jangle overlaps in usage and meaning. By creating said database, constructs and their components can be more efficiently compared through qualitative and quantitative item level hypothesis tests. Results of these tests can be used for more efficient instrument design, creation, and cross-cultural implementation.

### ***Operationalizing Pekrun’s call: The WARM-E platform***

**Presenting Author:** Aline Alves-Wold, University of Stavanger, Norway

#### **Abstract**

Motivation research in education has produced valuable insights into student engagement and learning, yet findings remain fragmented across constructs, theories, and contexts. This fragmentation limits accessibility and slows cumulative progress. Pekrun (2024) argues that the proliferation of overlapping constructs and theories has led to stagnation and calls for integration to reduce redundancy, clarify definitions, and strengthen empirical testing. Responding to this call, the present paper proposes the World Atlas of Research on Motivation in Education (WARME), a collaborative platform inspired by the World Atlas of Language Structures (Dryer & Haspelmath, 2013). WARME aims to centralize motivational constructs, theories, and empirical findings in a dynamic, evolving space that supports integration and comparison. The platform would organize data at multiple levels – studies, constructs, and propositions – making it easier to identify overlaps, merge related terms when appropriate, and examine pathways and boundary conditions. Visual tools such as maps and heatmaps could help researchers move beyond narrative summaries toward clearer, testable claims. By providing reusable coded data and mechanisms for collaboration, WARME seeks to reduce duplication of effort and foster cumulative knowledge building. If successful, this model could inspire similar initiatives in other fields facing comparable challenges of fragmentation and redundancy.

## Symposium 18: Motivational and Emotional Regulation in Education: Individual and Situational-Contextual Conditions

**Organizer:** Kristina Stockinger, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany

**Chair:** Kristina Stockinger, University of Augsburg, Germany; Markus Dresel, University of Augsburg, Germany

**Discussant:** Barbara Flunger, Utrecht University, Netherlands

### Abstract

Cumulative evidence indicates that both motivational regulation (MR) and emotion regulation (ER) matter for students' learning, academic success, and well-being (Fong et al., 2024; Romo et al., 2025). Much less is known, in contrast, about how individual and situational-contextual conditions shape the behaviors, outcomes, and effectiveness of students' self-regulation of motivation and emotions (Stockinger et al., 2025; Trautner et al., 2025). Additionally, perspectives on preconditions of different forms of external, teacher-driven regulation of student affect are widely lacking. This symposium showcases recent research from international scholars (Canada, Germany, Netherlands, USA) that attends to these factors and widens the investigate lens on MR and ER. Deploying different study designs and quantitative and qualitative approaches, Studies 1-3 provide novel insight into how students' selection and implementation of different MR and ER strategies and their effectiveness relate to (1) learner characteristics (e.g., level of expertise; habitual MR/ER tendencies), (2) the types of motivational and emotional problems encountered while studying, and (3) the regulatory goals they strive for. Study 4 examines how teachers' selection and implementation of motivational strategies in the classroom relates to their meta-motivational beliefs about the malleability of student motivation. Taken together, these contributions broaden our field of view from asking not only what works, but also when and for whom and thus help pave the path toward a deeper understanding of affective dynamics underlying student learning and thriving. The findings and their implications for research and educational practice will be discussed by a renowned expert on student motivation and self-regulation.

### ***Students' Regulatory Strategies and Goals for Motivational and Emotional Problems—An Interview Study***

**Presenting Author:** Kristina Stockinger, University of Augsburg, Germany

**Co-author(s):** Ulrike Nett, Augsburg University, Germany; Markus Dresel, University of Augsburg, Germany

### Abstract

Contemporary models of self-regulated learning (SRL) propose that motivational self-regulation (MR) and emotion regulation (ER) are conceptually related and functionally interdependent. The present study examined how students approach different motivational and emotional problems while studying in terms of the regulatory strategies they select and the regulatory goals they set in managing them. A sample of 100 German university students participated in a mixed two-factorial design. Half reported on strategies for regulating motivational problems originating from low expectancies for success (=motivational expectancy problem) and for anxiety (=emotional expectancy problem) encountered while studying for an important exam; the remaining students reported their strategies for managing motivational problems originating from low perceived relevance of study contents (=motivational value problem) and for boredom (=emotional value problem) while studying for a difficult/demanding exam. Interviews were coded for strategies and goals using an integrated MR-ER framework,

supplemented with inductively generated categories. Findings show substantial overlap in strategy use for functionally related motivational and emotional problems: Students described similar strategies for low expectancy and anxiety, and for low value and boredom. Strategies typically known from MR research were also reported for emotional problems, while ER strategies were also used to manage motivation. Additionally, students endorsed both instrumental and hedonic goals for both MR and ER. These results highlight the interconnectedness of MR and ER and underscore the need for integrated SRL theories and interventions that jointly target MR and ER competencies.

### ***Refining the Framework of Motivation Regulation: Validation of Established and Novel Strategies***

**Presenting Author:** Maike Trautner, Marburg University, Germany

**Co-author(s):** Carola Grunschel, University of Muenster, Germany; Malte Schwinger, Philipps-University Marburg, Germany

#### **Abstract**

Applying motivation regulation strategies is beneficial for engagement and learning success. Although several taxonomies describe these strategies, they are not systematically integrated with motivational and emotional theories and often remain narrow in scope. Recent work highlights overlap between motivation and emotion regulation (Miele & Scholer, 2018; Stockinger et al., 2025), but leaves open which motivational and emotional correlates co-occur for specific strategies. Against this background, the present study sought to validate a motivation regulation strategy questionnaire including an extended strategy set and to capture a broader range of strategies students actually use. This broader assessment enables a more valid examination of functional and potentially dysfunctional motivational and emotional correlates. A total of 524 university students reported their habitual use of multiple motivation regulation strategies. For each strategy, they openly described personal examples and expected effects through item web probes (open-ended prompts asking respondents to describe a typical situation in which they applied the strategy; Lenzner et al., 2015), alongside their affective and motivational experiences. Quantitative content analysis revealed adequate examples for most strategies. Learners reported beneficial effects for most strategies but also acknowledged mixed or negative effects for some (e.g., enhancement of introjected motivation). Confirmatory factor analyses yielded acceptable to excellent fit for all strategies individually (.97

### ***Contrasting Different Learner Populations' Emotion Regulation Strategies, Goals, and Outcomes***

**Presenting Author:** Jason Harley, McGill University, Canada

**Co-author(s):** Keerat Grewal, McGill University, Canada; Allyson Hadwin, University of Victoria, Canada; Reinhard Pekrun, University of Essex, United Kingdom; Mariel Miller, University of Victoria, Canada; Matthew Moreno, McGill University, Canada; Sayed Azher, McGill University, Canada; Maria Amoros Teijeiro, University of Victoria, Canada

#### **Abstract**

Deeper understanding of emotion and motivation is key when it comes to regulating challenging emotions provoked in a time of uncertainty and rapid change and the catalyzing role motivation can play in helping us overcome them. We aim to advance understanding of ER strategies, ER goals, and their perceived outcomes by contrasting findings from two learner populations (undergraduate students and medical residents) that completed the same self-report measure. Data was collected for a multi-year, multi-institutional observational study using the same self-report measure from 92 medical residents and 268 undergraduate students participating in team learning activities. Using cluster analysis, medical residents were clustered based on whether they endorsed performance or hedonic ER

goals and deployed situation modification or attention deployment. Undergraduate students, on the other hand were clustered based primarily on whether they reported using attentional deployment or situation modification, or alternatively, cognitive change or response modulation. Undergraduate students reported having more success managing their emotions for both instrumental and hedonic ends than medical residents. Findings contribute to emerging literature on ER in education and is the first to contrast ER strategies, goals, and outcomes between learner populations, a key for theory validation and generalizability boundaries.

### ***Teachers' Metamotivational Beliefs and Their Use of Motivational Strategies in the Classroom***

**Presenting Author:** David Miele, Boston College, United States

**Co-author(s):** Soyoung Kim, Boston College, United States; Abigail A. Scholer, University of Virginia, United States; Kentaro Fujita, The Ohio State University, United States

#### **Abstract**

During these uncertain times, students are often distracted by social media, AI, and other technologies, and thus teachers may find it increasingly difficult to motivate them to engage in learning activities. Some teachers may conclude that these distractions are insurmountable and that there is not much that they can do to increase their students' motivation. In our presentation, we will discuss two studies that examine whether this type of metamotivational belief, which we refer to as an 'external locus of control regarding student motivation,' negatively predicts teachers' self-reported use of motivational strategies in the classroom. Study 1 (N = 320) provides preliminary support for this association and suggests that it is mediated by teachers' outcome expectancies (i.e., their beliefs about whether motivational strategies are effective at enhancing students' motivation). Study 2, which is currently being conducted, attempts to build on these findings by showing that these associations emerge even when (a) locus of control and strategy use are measured in separate weeks, and (b) teachers' are asked to provide open-ended descriptions of the strategies they used earlier that day (in addition to responding to close-ended items that assess how frequently they use certain strategies in general). Data collection for Study 2 is complete and analysis will be finished well in advance of the conference. The findings could have important implications for professional development as it may turn out that helping teachers to develop an internal locus of control leads them to use effective motivational strategies more frequently in the classroom.

## Keynote 4



**Gregory Liem**

Associate Professor in the Psychology and  
Child & Human Development Academic  
Department

**National Institute of Education,  
Nanyang Technological University,  
Singapore**

***Why We Strive: The Meaning of Goal Pursuit  
Through a Sociocultural Lens***

Why do people strive? Mainstream theories of motivation have largely answered this question by privileging self-oriented motives such as self-worth, self-enhancement, and self-verification. Accumulating theoretical and empirical work, however, suggests that this emphasis reflects culturally specific assumptions about agency and the self, rather than universal principles of goal pursuit and human behavior more broadly. From a sociocultural perspective—particularly distinctions between independent and interdependent selfhood—striving is not only intrapersonal but also interpersonal, embedded in social relationships, roles, and normative expectations. Goals are therefore often pursued for both self-oriented and socially oriented reasons. Understanding goal pursuit thus requires moving beyond a self or social framing toward an integrative account that considers both motivational orientations together. Although this argument is initially motivated by sociocultural perspectives on how selves are organized across contexts, it becomes increasingly clear that personal and social motives are not culture-bound but are universally available features of human motivation. What varies across cultures, contexts, and individuals is not the presence or absence of these orientations, but their relative salience, expression, and meaning. The presentation concludes by discussing implications for motivation theory and research and for how agency, engagement, and purpose are conceptualized across diverse settings.

## Paper Session 35: Emotional Intelligence, Motivation, and Engagement Across Contexts

### Chinese High School Students' Cross-Domain Motivational Profiles and Their Relations to Engagement

**Presenting author:** Yue Sheng, University of Alabama at Birmingham, United States

#### Abstract

Through the lens of situated expectancy-value and dimensional comparison theories, this study explores the intraindividual hierarchies of Chinese high school students' expectancy and value beliefs across math and English. Data were collected from 534 10th grade students in Jiangsu Province, China. Latent profile analysis revealed five distinct motivational profiles, with both balanced and contrasting patterns of expectancy and value beliefs across subjects. Profiles characterized by high motivation in both subjects were associated with higher all four dimensions of math engagement. Interestingly, students in the Low Math/High English profile showed the highest engagement in English, followed by students who were from High Motivation profile. The findings encourage educators to help students see the value of learning both subjects.

### Emotional Intelligence and Conflict Management Styles in Contemporary Work Contexts

**Presenting author:** Sílvia Lopes, Universidade de Coimbra, Portugal

**Co-author(s):** Soraia Oliveira, Universidade de Coimbra, Portugal; Diogo Cerdeira, Universidade de Coimbra, Portugal; Ana Sofia Menício, Universidade de Coimbra, Portugal; Anabela Rodrigues, Catholic University of Portugal, Portugal

#### Abstract

Workplace conflict is an inevitable feature of contemporary organizations, particularly in contexts marked by uncertainty, heightened demands, and emotional strain. Emotional intelligence (EI) has been identified as a key personal resource for understanding and regulating affective responses in interpersonal situations. This study examines the relationship between EI and conflict management styles among Portuguese workers. Using a quantitative, cross-sectional design, data were collected from 298 employed adults through self-report questionnaires. Emotional intelligence was assessed using the Wong and Law Emotional Intelligence Scale, and conflict management styles were measured with the Rahim Organizational Conflict Inventory II. Correlational analyses were conducted to examine associations between EI and five conflict management styles. EI was positively associated with integrative and compromising conflict management styles, indicating a greater preference for collaborative and mutually constructive approaches to conflict. No significant associations were found between emotional intelligence and either a dominating or an avoiding style. These findings suggest that emotional intelligence is particularly relevant to promoting emotionally regulated and cooperative conflict-management behaviors. The study contributes to the literature on affective processes at work by highlighting emotional intelligence as a key resource for managing interpersonal conflict. Organizations should foster emotional competencies to promote constructive conflict management in challenging and uncertain work environments.

## When Being Emotionally Intelligent Hurts: Affective Costs of Toxic Leadership

**Presenting author:** Anabela Rodrigues, Universidade Católica Portuguesa Centro regional de Braga, Portugal

**Co-author(s):** Sílvia Lopes, Universidade de Coimbra, Portugal; Ana Sabino, ISPA - Instituto Universitário de Ciências Psicológicas, Sociais e da Vida, Portugal

### Abstract

Contemporary work contexts are increasingly emotionally demanding, and toxic leadership can intensify negative affective dynamics that spill over beyond work. Emotional intelligence (EI) is often framed as a protective resource, yet heightened emotional awareness may also amplify distress in adverse interpersonal climates. This study examined whether EI moderates the association between perceived toxic leadership and overall life satisfaction, with a focus on the potential affective costs of emotional sensitivity. A cross-sectional survey was conducted with 329 Portuguese employees from diverse occupational sectors. Participants completed measures of toxic leadership (Toxic Leadership Scale), overall life satisfaction (Satisfaction With Life Scale), and EI (Wong and Law Emotional Intelligence Scale). Contrary to expectations, perceived toxic leadership showed only a very small negative association with life satisfaction. EI was moderately and positively associated with life satisfaction. Importantly, moderation analyses indicated a significant interaction: the negative association between toxic leadership and life satisfaction became stronger at higher levels of EI. These findings suggest that EI may function as a double-edged resource in toxic environments: while generally linked to higher well-being, greater emotional attunement may increase the perceived salience and psychological impact of toxic leader behaviors. The study advances affective perspectives on leadership by highlighting boundary conditions under which emotional competencies may carry costs, with implications for leadership development and employee support in uncertain, high-strain contexts. Keywords (suggestion): toxic leadership; emotional intelligence; life satisfaction; affective dynamics; well-being

## Paper Session 36: Motivation, Achievement, and Developmental Change

### Reciprocal Relations Between Achievement-Related Emotions and Academic Achievement

**Presenting author:** Tahrir Hussain, Liverpool John Moores University, United Kingdom

**Co-author(s):** David Putwain, Liverpool John Moores University, United Kingdom

### Abstract

High-stakes examinations constitute critical evaluative contexts in which students' academic trajectories are shaped; limited longitudinal research has examined the dynamic interplay between achievement and achievement-related emotions in such settings. Guided by the Control-Value Theory of Achievement Emotions (CVT), this study investigated reciprocal relations between academic achievement and four achievement-related emotions: anxiety, hopelessness, anticipatory relief, and pride across two academic years in upper secondary school students. Participants were upper secondary school students across two academic years. At the first wave of data collection, 960 participants were aged between 16 and 19 years ( $M = 16.68$ ,  $SD = 0.54$ ). At the second wave, 890 students aged between 17 and 20 years ( $M = 17.48$ ,  $SD = 0.54$ ). A validated questionnaire for achievement-related emotions was used. The use of longitudinal structural equation modelling with latent variables, academic achievement was modelled at multiple time points prior to, during, and following high-stakes examinations, alongside students' appraisals of achievement-related emotions related to achievement contexts. Results supported theoretically

expected reciprocal relations. Higher prior achievement predicted increases in positive emotions and decreases in negative emotions over time. In turn, positive emotions predicted subsequent achievement gains, whereas hopelessness predicted lower later achievement. These findings provide longitudinal evidence for self-reinforcing feedback loops between achievement and emotions, consistent with CVT assumptions regarding control and value appraisals. The study advances theoretical understanding of achievement emotions as both outcomes and antecedents of academic success and highlights the importance of addressing emotional processes in high-stakes educational contexts to support sustained achievement and student well-being.

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### Beyond the decline: Trajectories of primary school students' motivation across one school year

**Presenting author:** Jonne Bloem, Utrecht University, Netherlands

**Co-author(s):** Frederic Guay, Laval University, Canada; Lisette Hornstra, Utrecht University, Netherlands; Kim Stroet, Leiden University, Netherlands

#### Abstract

In this study, we used a person-centered approach to examine trajectories of primary school students' self-determined motivation throughout one school year. Moreover, we investigate the potential determinants of students' motivational trajectories as well as how these trajectories relate to their engagement and achievement. To this end, we collected data from 68 primary school teachers (grade 4-6), and their 1,179 students. Students filled out questionnaires at three occasions during one school year measuring their self-determined motivation, their level of (dis)engagement, as well as their perceptions of how their teachers support or thwart their psychological needs for autonomy, competence and relatedness. Moreover, we collected students' achievement scores. Growth mixture analyses revealed two profiles: a high-stable profile (80%) and a low-decreasing profile (20%). Including the predictors showed that students who experienced more need thwarting from their teachers were more likely to be in the low-decreasing profile. Students' ethnic and socioeconomic background and experienced need support and thwarting were associated with variations of motivation within the two profiles (mostly in expected directions). Additionally, the students in the high-stable profile showed more favorable development in (dis)engagement and achievement throughout the school year. Thus, the general decline in student motivation found in previous research is actually not present for most students, but instead more pronounced for a smaller group of students.

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### Reciprocal Effects between Motivation, Effort, Achievement in Secondary and Higher Education

**Presenting author:** Meimei Liu, Vrije Universiteit Amsterdam, Netherlands

**Co-author(s):** TuongVan Vu, Vrije Universiteit Amsterdam, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands; Tieme Janssen, Vrije Universiteit Amsterdam, Netherlands; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands

#### Abstract

Many motivational theories propose that motivation and achievement reinforce one another through effort over time. Yet empirical findings remain inconsistent, partly because studies often rely on long measurement intervals, types of educational contexts, or statistical models that confound within- and between-person change. Integrating two studies, we examined reciprocal relations among motivation, effort, and achievement across distinct educational settings and timescales. Study 1 followed 3,445 Korean adolescents over five years, testing reciprocal

relations between value of education, quantity of effort (time investment), and achievement using the Classical Cross-Lagged Panel Model (CLPM), the Random Intercept Cross-Lagged Panel Model (RI-CLPM), and the Random-Curve Cross-Lagged Panel Model (RC-CLPM). Study 2 tracked 211 first-year university students weekly over nine weeks, modelling reciprocal relations between expectancy–value beliefs, quantity and quality of effort (ie. learning strategies), and learning performance using CLPMs and RI-CLPMs with multiple lag structures. Across both studies, classical CLPMs suggested reciprocal relations, yet RI-CLPMs and RC-CLPMs consistently revealed only achievement → motivation effects. Motivation did not reliably predict effort, and only quantity—not quality—of effort predicted achievement. These results converge on a robust conclusion: reciprocal effects from motivation → achievement are far weaker and more model-dependent on the type of motivation construct than assumed, while achievement appears to shape motivational beliefs more consistently. This pattern points to the value of continued research on when reciprocal dynamics are likely to appear and how the motivation–effort–achievement cycle can be more precisely specified.

### The motivation-achievement reciprocity: a multilevel meta-analysis and an experiment

**Presenting author:** TuongVan Vu, Vrije Universiteit Amsterdam, Netherlands

**Co-author(s):** Aurelia Lilly Scharmer, Department of Experimental-Clinical and Health Psychology, Ghent University, Belgium; Elise van Triest, Vrije Universiteit Amsterdam, Netherlands; Nienke van Atteveldt, Vrije Universiteit Amsterdam, Netherlands; Martijn Meeter, Vrije Universiteit Amsterdam, Netherlands

#### Abstract

This presentation will focus on multilevel meta-analyses and a systematic review comprising 47 longitudinal studies examining the reciprocity between motivation and academic achievement in primary and secondary education. Additionally, we conducted further investigation of this reciprocity with an intensive short-term experiment. Our meta-analyses included studies beyond those focused solely on self-belief motivation constructs, encompassing additional constructs such as achievement goals. The results of the meta-analyses show that the pooled effect of achievement on motivation was nearly twice as strong ( $\beta = 0.176$ ) as the effect of motivation on achievement ( $\beta = 0.096$ ). The impact of achievement on motivation was consistent across different motivational constructs, though more pronounced for self-belief constructs ( $\beta = 0.227$ ) than for other constructs ( $\beta = 0.091$ ). In contrast, the effect of motivation on achievement was found exclusively for self-belief constructs ( $\beta = 0.157$ ), with no effect observed for non-self-belief motivation. The moderate-to-high heterogeneity observed between and within studies suggests that key factors in the motivation–achievement relationship may remain unidentified. Furthermore, the results from the experiment suggest that the detection of reciprocity may depend on the statistical models employed. In sum, these findings collectively provided mixed support for the reciprocity hypothesis between motivation and academic achievement. Reciprocal effects from motivation → achievement are far weaker and more model-dependent on the type of motivation construct than assumed, while achievement appears to shape motivational beliefs more consistently.

## Paper Session 37: Teacher Discourse, Motivation and Emotions

### Focusing on lecturers' motivational messages: A field experiment in higher education

**Presenting author:** Lena Kegel, University of Münster, Germany

**Co-author(s):** Carola Grunschel, University of Muenster, Germany

#### Abstract

Teachers' motivational messages relate to learners' motivation and emotions. To test these relationships in a field experiment, we adopted a novel approach based on the discussion of attentional deployment impacting both motivation and emotions. Instead of manipulating lecturers' motivational messages, we directed students' attention to these messages. We hypothesized that participants focusing on their lecturer's motivational messages would report higher expectancy, higher intrinsic value, more enjoyment, and less anxiety compared to participants focusing on a control task. In an undergraduate psychology lecture, we randomly assigned students to either focus on the lecturer's verbal messages they find motivating (experimental group,  $n = 27$ ), or on the information density of the presentation slides (control group,  $n = 36$ ). Whereas expectancy, intrinsic value, and enjoyment did not differ between groups at the end of the lecture, students in the experimental group reported lower lecture-specific anxiety than the control group. This effect remained statistically significant when controlling for students' difficulty rating of the observational task and their expectancy, intrinsic value, and perceived lecturer enthusiasm at the start of the lecture. These findings suggest that merely following an observational task during a lecture can influence university students' anxiety, with motivational messages having a positive effect compared to information density of slides. In future experiments, we intend to integrate the framing (gain- and loss-frame) and appeal (intrinsic to extrinsic) of motivational messages into students' observational task to more differentially investigate motivational messages in higher education.

### Phrase-based Coding Framework for Teachers' Motivational Language Based On Self-Determination Theory

**Presenting author:** Asghar Ahmadi, na, Czech Republic

#### Abstract

Teachers' behaviours play a critical role in shaping student outcomes, but traditional measurement approaches can be resource-intensive and influenced by bias. To address this, we developed a phrase-based coding framework to classify teachers' need-supportive versus need-thwarting language, grounded in Self-Determination Theory. Following established dictionary development strategies, we first compiled a pool of candidate phrases from literature, teaching experience, and classroom transcripts. Motivation and education experts reviewed this pool to refine the dictionary and ensure face validity. Teacher transcripts were split into 70:30 training and test sets. In the training set, transcripts from the most and least need-supportive teachers—as determined by observers—were compared using weighted log odds ratios to identify phrases more characteristic of need-supportive versus need-thwarting language. The filtered dictionary retained words that showed clear differentiation. Both the full expert-derived dictionary and the filtered dictionary were then evaluated against observer ratings in the independent test set. The resulting dictionary included 227 words, comprising 149 need-supportive and 82 need-thwarting phrases. Correlations between dictionary-based and observer ratings were moderate and significant for the unfiltered dictionary ( $r = .34$ ), comparable to inter-observer agreement ( $r = .32$ ). Filtering improved performance

on the training set ( $r = .49$ ) but decreased accuracy on the independent test set ( $r = .64$  vs.  $r = .73$ ), suggesting the unfiltered dictionary is more robust. This phrase-based framework provides a cost-efficient and reliable method for analysing teachers' motivational language. It performs comparably to human observers and offers a practical tool for teacher training, as well as training more advanced models based on theory.

## Less fear, more joy? Classroom management, motivation and emotions in physical education

**Presenting author:** Tim Haigis, University Leipzig, Germany

**Co-author(s):** Christin Lotz, University Leipzig, Germany; Anne Deiglmayr, University of Leipzig, Faculty of Education, Germany

### Abstract

Classroom management (CM) is a pivotal dimension of teaching quality, especially in Physical Education (PE). While its links to motivation are established, CM's impact on specific emotional outcomes like enjoyment and fear remains under-researched. This study examined the factorial structure of student-perceived CM and its predictive power regarding enjoyment, fear, and the teacher-student relationship. Data were collected from  $N = 1,420$  secondary school students immediately following a PE lesson. Students assessed five CM dimensions (rule clarity, discipline and time management, omnipresence, organisation and goal clarity, safety) alongside their experienced fear, enjoyment and relationship quality. Analysis employed multilevel confirmatory factor analysis and multilevel structural equation modelling. The five CM subdimensions correlated moderately to highly, supporting a common second-order factor. At the within-class level, this global CM factor significantly predicted higher enjoyment ( $\beta = .43$ ) improved teacher-student relationships ( $\beta = .34$ ), and lower fear ( $\beta = -.22$ ). At the between-class level, classes characterised by higher CM reported, on average, lower fear ( $r = -.15$ ,  $p < .002$ ), higher enjoyment ( $r = .17$ ,  $p < .001$ ), and more positive teacher-student relationships ( $r = .29$ ,  $p < .001$ ). These findings underscore high-quality CM as a prerequisite for students' emotional well-being and positive social interaction in PE. By focusing on enjoyment and fear – previously neglected criteria – this study addresses a significant research gap in understanding quality of teaching in PE.

## Paper Session 38: Motivation, Emotions, and Identity Development in Pre-Service Teachers

### Student teachers' motivation to complete their studies

**Presenting author:** Bas Senden, Department of Primary and Secondary Teacher Education (GFU), Norway; Liva Martinussen, Oslo Metropolitan University, Norway

### Abstract

Teacher shortages are becoming an increasingly acute problem across education systems worldwide, including in Norway. Understanding how teacher education institutions can support student teachers in completing their studies is therefore crucial for reducing dropout and mitigating teacher shortages. This study examines malleable factors within teacher education associated with student teachers' motivation to complete their studies. The analysis draws on data from a recent national evaluation of two teacher education programmes conducted by the Norwegian Agency for Quality Assurance in Education ( $N = 3,409$ ). Using structural equation modelling, we

investigate how student teachers' perceptions of teaching quality, practicum quality, study coherence, and study information quality are associated with their motivation to complete teacher education. Preliminary results indicate that perceived teaching quality is particularly strongly associated with motivation, regardless of study programme, programme organisation, or study year. These findings can inform teacher education programmes in supporting student motivation and promoting completion.

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## Identifying At-Risk Pre-Service Teachers: Insights from Motivational Profiles

**Presenting author:** Liene Brandhuber, Karlsruhe University of Education, Germany

**Co-author(s):** Cora Parrisius, Karlsruhe University of Education, Germany; Peter Edelsbrunner, Ludwig-Maximilians-Universität Munich, Germany; Benjamin Nagengast, Eberhard Karls Universität Tübingen, Germany

### Abstract

Numerous motivational constructs show well-established links to academic risk factors. However, an open question remains whether certain motivational constructs may uniquely distinguish among learners with different risk levels. We applied latent profile analysis to a diverse set of motivational variables and identified four distinct profiles among pre-service teachers across two independent samples (N = 479; N = 440). In both samples, the profiles exhibited differences in procrastination and dropout intentions, with generally lower motivation associated with higher risk. However, the findings also indicated that some motivational variables uniquely distinguished motivational profiles of otherwise similar motivation levels, and that students in these profiles differed in their levels of procrastination and drop-out intentions.

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## From learner to teacher: How achievement emotions shape pre-service teachers' self-image

**Presenting author:** Vanessa Graf, HMU Health and Medical University Erfurt, Germany

**Co-author(s):** Lars Meyer-Jenßen, HMU Health and Medical University Erfurt, Germany

### Abstract

Although the importance of achievement emotions for the professionalization of pre-service teachers has already been proven, their role for self-image as part of teacher identity has not yet been quantitatively investigated. The aim of this study was to investigate the effects of various achievement emotions on self-image as a learner and a teacher. Anxiety, enjoyment, shame, authentic and hubristic pride as well as learner and teacher self-image were assessed three times among 223 pre-service teachers across a period of nearly four months (from two months before the teaching practicum to two months after its beginning). The effects were analyzed across three measurement occasions using chi-square difference tests and cross-lagged path models for self-images and each achievement emotion. The Chi-square difference tests showed that learner self-image, shame, and hubristic pride decreased significantly and teacher self-image, enjoyment, anxiety, and authentic pride increased significantly over time. The self-images were significantly associated with each other. Learner self-image was significantly associated with authentic and hubristic pride and enjoyment over time. Teacher self-image was significantly associated with hubristic pride, shame, anxiety and enjoyment over time. The results underscore the relevance of achievement emotions for self-image as part of pre-service teachers' professional identity. It can be concluded that achievement emotions should be taken into account in the context of teacher education with regard to the development. In addition, the results suggest both object-related and self-conscious emotions have an effect on self-image.

Understanding how different emotions affect self-image can help strengthen pre-service teachers' professional identity.

## Paper Session 39: Family Contexts and Students' Well-Being, Motivation, and Academic Outcomes

### Parental Accuracy in Judging Children's Life Satisfaction: Prevalence, Predictors, and Implications

**Presenting author:** Luofan Shu, The Graduate Center, CUNY, United States

**Co-author(s):** Anastasiya Lipnevich, The Graduate Center of the City University of New York, United States

#### Abstract

This study explores the extent to which parents' ratings of their school-aged children's life satisfaction align with the children's own self-reports and examines factors that may account for any discrepancies. Using data from 294 parent-child dyads, the child sample consisted of 52.81% boys and 47.19% girls, ranging in age from 11 to 14 years. Among the parents, 87.19% were mothers and 12.81% were fathers. Results revealed that 73.81% of parents misjudged their children's life satisfaction, with overestimation being the most common pattern (40.48%). Additionally, parents rated their daughters as having higher life satisfaction than their sons. Multiple regression models suggested that children's life satisfaction is negatively associated with parent-child perception gap. At the same time, household income and child self-efficacy contributed to children's life satisfaction, whereas parents' own life satisfaction, parental self-efficacy and their marital status were factors that influenced how parents judged their child's life satisfaction. Multinomial logistic regression showed that fathers or single parents were less likely to overrate their children's life satisfaction. The findings highlight the misalignment between parent and child perceptions and emphasize the need to involve parents in well-being interventions, strengthen parent-child communication, and provide parental education to support adolescents' well-being development.

### Link of Family and School to Adolescents' Reading Motivation, Metacognition, and Strategy Use

**Presenting author:** Peter Seban, Slovak academy of sciences, Slovakia

**Co-author(s):** Tereza Dubovska, Faculty of Education, Trnava University, Priemyselná 4, 918 43 Trnava, Slovakia, Slovakia; Patricia Jakubcova, Faculty of Education, Trnava University, Priemyselná 4, 918 43 Trnava, Slovakia

#### Abstract

Adolescence is a period marked by heightened uncertainty, fluctuating motivation, and changing emotional engagement with learning. Understanding how environmental contexts shape students' affective and cognitive resources is therefore crucial. This study examined how family and school environments relate to adolescents' reading motivation, metacognitive knowledge, and use of effective learning strategies. A sample of 397 ninth-grade students completed measures of family literacy support, perceived teacher influence, reading motivation, metacognitive knowledge, and strategy use. Correlational analyses and path modeling revealed that both family and teacher support were positively associated with reading motivation, metacognitive knowledge, and the use of effective learning strategies. Mediation analyses further showed that metacognitive knowledge and reading motivation (affective engagement) partially explained how family and teacher influences predict strategy use. These

findings highlight the joint contribution of affective, cognitive, and contextual factors to strategic learning during adolescence. They underscore the importance of strengthening both home and school environments to support students' motivational resilience and metacognitive development in educational contexts.

### Parental involvement and math outcomes across migrant backgrounds: A cross-national analysis

**Presenting author:** Mafalda Campos, EDUNOVA.ISPA - Interdisciplinary Research Centre in Education | ISPA - Instituto Universitário, Portugal

**Co-author(s):** Francisco Peixoto, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal; Jelena Radišić, University of Oslo, Norway

#### Abstract

Amid growing migration and concerns about school equity, research often notes that immigrant students adapt and achieve less well. However, they sometimes perform well and show higher motivation despite the odds—a phenomenon called the immigrant paradox. Situated Expectancy-Value Theory (SEVT) posits that motivation stems from expectancies and values shaped by cultural factors like gender and ethnicity, yet gaps remain in addressing these. This study examines how parental attitudes, practices, and mindset relate to primary students' mathematics motivation and achievement under SEVT, moderated by immigrant status and national context. Data from 5347 third- and fourth-grade students and their parents across Finland, Norway, Portugal, and Sweden (26% with an immigrant background) were analysed using multigroup structural equation modelling. The first analysis phase compared migrants with nonmigrants (10 models); the second compared countries using only the migrant sample (20 models). Results showed that the use of the language of instruction at home was more strongly negatively associated with parental fixed mindset among migrant students, while positive parental maths attitudes were more strongly positively associated with students' intrinsic value. Country comparisons revealed stronger links in Portugal between home books/intrinsic practices and outcomes, and between intrinsic value and achievement, compared with Norway; a gender advantage in intrinsic value for boys in Portugal compared with Finland; and structured practices linked to higher costs in Finland compared with Norway. These findings contribute to advancing knowledge in equity research in the context of maths motivation. Results, interpretation, implications and future research are discussed.

### Intergenerational Links in Math Anxiety: Longitudinal Evidence from Primary School

**Presenting author:** Jonatan Finell, Umeå University, Sweden

#### Abstract

Intergenerational Links in Math Anxiety: Longitudinal Evidence from Primary School Math anxiety (MA) is associated with poorer performance, lower motivation, and less favourable educational trajectories. Although MA is typically studied as an individual student characteristic, growing evidence suggests that affective responses to mathematics may also be shaped by the family context. Parental MA may therefore represent an important, yet understudied, source of intergenerational transmission, particularly during late primary school when children's affective orientations toward mathematics become increasingly stable. This study examined longitudinal associations between parental MA and students' MA and related affective factors across the transition from Grade 4 to Grade 5. The sample consisted of ~430 students, followed across three measurement occasions. Measurements included

MA, self-concept and interest in math, as well as parental MA. A latent growth curve model was specified for student MA, and parental MA was included as a predictor of both intercept (initial level) and slope (change over time). At the bivariate level, parental MA showed small-to-moderate positive correlations with student MA at all time points ( $r \approx .19$ ). Growth modelling indicated that parental MA predicted students' initial level of MA but not change over time. Parental MA was also negatively associated with students' math self-concept and interest. Overall, the findings suggest that parental MA is linked to stable between-student differences in affective factors toward mathematics, rather than to developmental increases in MA, highlighting the importance of family-related influences on students' emotional and motivational orientations toward mathematics.

## Paper Session 40: Engagement, Burnout, and School Adjustment Trajectories

### School enjoyment and social competence: A three-wave study in German lower secondary schools

**Presenting author:** Anna Hawrot, Leibniz Institute for Educational Trajectories (LifBi), Germany

**Co-author(s):** Amelie Labsch, Leibniz Institute for Educational Trajectories (LifBi), Germany

#### Abstract

School enjoyment is a key component of students' well-being and is linked to motivation, learning behaviour, and achievement. One important source of enjoyment is students' social relationships at school. At the same time, previous research suggests that students' behaviours shape these relationships, indicating a potential role of social competence in fostering enjoyment. Positive emotions may also promote socially competent behaviour. However, longitudinal evidence on these dynamics is limited. Therefore, this study examined reciprocal associations between school enjoyment and two dimensions of social competence—impulsiveness and the ability to regulate others' emotions—among lower secondary school students. Data were drawn from 4,289 German students surveyed in Grades 6, 7, and 9. A three-wave three-variable random-intercept cross-lagged panel model was used to test whether within-person changes in enjoyment predicted within-person changes in these two dimensions of social competence, and vice versa. Although enjoyment was negatively correlated with impulsiveness and positively correlated with the ability to regulate others' emotions, no within-person cross-lagged effects emerged. Social competence did not predict later enjoyment, nor did enjoyment predict later social competence. There were also no cross-lagged associations between impulsiveness and emotion regulation of others. These findings suggest that interventions targeting social competence may be unlikely to enhance school enjoyment. At the same time, they imply that students with lower social competence, including those who are more impulsive, are not at heightened risk of reduced enjoyment. Future research may fruitfully examine social relationships as environmental antecedents of school enjoyment.

### Linking School Burnout Symptoms to Later Mental Health Challenges

**Presenting author:** Kati Vasalampi, University of Jyväskylä, Finland

**Co-author(s):** Milja Parviainen, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland; Kaisa Aunola, University of Jyväskylä, Finland

#### Abstract

The aim of the present study was to examine the extent to which symptoms of school burnout (exhaustion and cynicism) during the comprehensive school years played a role in individuals' long-term mental health problems. The data was collected in four municipalities (i.e., one big, one rural, and two medium-sized) around Finland. The

sample included 673 students (376 girls, 297 boys) whose symptoms of school burnout were assessed three times: in Grade 6 (ages 12–13), Grade 7, and Grade 9. Indicators of later mental health problems were the use of antidepressants at the ages of 16–20 years old, and self-reported depressive symptoms. The data were analyzed using logistic regression and hierarchical linear regression models. The results showed that symptoms of exhaustion in Grade 9 significantly predicted the use of antidepressants in late adolescence; the higher the level of exhaustion in Grade 9, the greater the likelihood of using antidepressants during the follow-up period. Similar findings were found for self-reported depressive symptoms, as higher levels of exhaustion in Grades 7 and 9 predicted significantly higher levels of subsequent self-reported depressive symptoms. Higher levels of cynicism in Grade 9 predicted significantly higher levels of subsequent self-reported depressive symptoms, but not the use of the antidepressants. The findings indicated that school burnout symptoms are significant predictors of ongoing mental health problems, emphasizing the need for early preventive work and interventions. Symptoms of exhaustion and cynicism increase risk of depressive symptoms, and exhaustion may also progress to clinical depression requiring medication.

### A mixed-method examination of factors contributing to student engagement and burnout

**Presenting author:** Aleksandra Huic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia

**Co-author(s):** Antonija Vrdoljak, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia; Nina Pavlin-Bernardic, Faculty of Humanities and Social Sciences, University of Zagreb, Croatia

#### Abstract

In this mixed-method study we focus on factors that undermine or promote student well-being, under the lens of the Study Demands–Resources Theory (SD-R). We address current research gaps by examining (a) perceptions of study demands and resources among highly engaged and highly burned out students and (b) the role of autonomy-supportive versus controlling teaching in student engagement and burnout. We further examine study crafting as a proactive behavior mediating the relationship between teaching practices and student outcomes. A sample of 365 higher-education students filled out two open-ended questions on study demands and resources, followed by validated measures of teaching style, study crafting, engagement, and burnout. Qualitative data were analyzed using thematic analysis, and significance of indirect effects was tested using bootstrapping. Across high engagement and high burnout groups, the most frequently reported study demands were heavy workload, tight deadlines, and multitasking. Highly burned-out students additionally reported demands related to physical and mental health, financial strain, and incompetent lecturers. Supportive lecturers, clear course materials, and peer support emerged as key resources, although supportive teaching was mentioned less frequently by burned-out students. Quantitative results showed that autonomy-supportive teaching was positively associated with engagement both directly and indirectly via study crafting. Controlling teaching was directly associated with higher burnout, while study crafting was negatively related to burnout but did not mediate this relationship. Findings extend SD-R by clarifying students' perceived demands and resources and highlight the central role of teaching practices in student well-being.

## Developmental Trajectories of School Engagement and Burnout (Grades 4–8)

**Presenting author:** Linda Österholm, Åbo Akademi University, Finland

**Co-author(s):** Anna Widlund, Åbo Akademi University, Finland; Johan Korhonen, Åbo Akademi University, Finland

### Abstract

Grounding on the Study Demands–Resources framework and Conservation of Resources theory, this study examined the development of school engagement and burnout from late elementary to lower secondary school (Grades 4–8). Longitudinal data were collected from 814 Finnish students across three cohorts using an accelerated design with six measurement waves (2022–2025). Students reported school engagement and burnout (exhaustion and cynicism), and completed a standardized mathematics test. Parallel-process growth modeling indicated linear changes in engagement and burnout over time. Latent profile analysis identified three developmental trajectories: Recovery (7%), characterized by increasing engagement and decreasing burnout; Moderate Decline (79%), showing gradually decreasing engagement and increasing burnout; and Steep Decline (14%), marked by sharp declines in engagement and rising burnout beginning as early as Grade 4. The findings indicate that engagement and burnout trajectories emerge before the transition to lower secondary school, highlighting the importance of early support to sustain students' engagement and well-being.

## Paper Session 41: Motivational Outcomes and Emotional Experiences in Applied Learning Contexts

### Situated motivation during project-based learning module on climate change

**Presenting author:** Veli-Matti Vesterinen, University of Turku, Finland

### Abstract

In times of increasing societal and environmental uncertainty, climate change education requires pedagogies that support not only learning but also students' motivation and sense of agency. This study examines how situational motivation emerges during project-based learning and how it relates to students' learning outcomes. Grounded in Self-Determination Theory, situational motivation is conceptualized as a dynamic state arising from the fulfillment of the needs of autonomy, competence, and relatedness needs. Data for this study was collected from an upper secondary physics module on energy production and climate change. The data collection was carried out using ecological momentary assessment, in which participants answered a short questionnaire three times during each lesson, resulting in 2,230 situational observations from 203 students. Multilevel structural equation modelling was used to examine how different learning activities predicted situational motivation and how situational motivation related to learning gains. Results show that ideation and problem solving were associated with higher autonomy, competence, and relatedness, whereas lecturing was linked to lower autonomy. When modelled as a latent construct, situational motivation was highest during student-centered activities. Moreover, situational motivation mediated the relationship between prior knowledge and post-test performance, indicating that motivated students achieved greater learning gains. These findings highlight the importance of instructional practices that foster situational motivation and agency, particularly in emotionally and cognitively demanding contexts such as climate change education.

## Beyond Knowledge? A systematic review of motivational outcomes in school health education

**Presenting author:** Mariana Brazão, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

**Co-author(s):** Joana Pipa, ISPA - Instituto Universitário | EDUNova.Ispa, Portugal; Francisco Peixoto, ISPA - Instituto Universitário | EDUNova.ISPA, Portugal; Marta Pôjo, Liga Portuguesa Contra o Cancro, Portugal

### Abstract

Cancer remains a major global health challenge, with projections indicating a 77% increase in incidence by 2050. As 30%–50% of cases are preventable through lifestyle behaviours, schools represent a key setting for early health promotion. School-based health education is expected to build foundational health knowledge and foster motivational competencies essential for sustained behaviour change. However, despite substantial investment, evidence regarding its effectiveness remains limited. This systematic review synthesises evidence from school-based health education interventions targeting cancer-prevention behaviours (i.e., eating habits, sun exposure, tobacco and alcohol use, physical activity, and HPV vaccination). It examines how cognitive and motivational competencies, particularly motivational processes, are developed across school years and how these constructs are operationalised within interventions. Following PROSPERO preregistration and PRISMA guidelines, six databases were searched (2014–2024). Thirty-eight studies met inclusion criteria. All assessed health knowledge, reflecting a predominant cognitive focus. Only three studies (8%) measured motivational variables, indicating a substantial gap in the integration of motivational processes. Fifteen studies (39%) were theoretically grounded, yet none reported sustainability plans. Only three interventions (8%) addressed multiple modifiable behaviours simultaneously, limiting ecological validity. Overall, findings reveal that school-based health education for cancer prevention remains heavily knowledge-centred, with limited attention to motivational competencies and multicomponent approaches. These gaps highlight the need for more comprehensive, theory-driven, and sustainable interventions to enhance effectiveness.

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## Mapping Aesthetic Emotions in Street Art Depicting Sustainability Themes

**Presenting author:** Patrícia Arriaga, ISCTE-Lisbon University Institute, CIS-IUL, Portugal

**Co-author(s):** Erin M. Buchanan, Harrisburg University of Science and Technology, Harrisburg, PA, United States

### Abstract

This study presents a dataset of 556 street art images evaluated for the emotions they elicit. Most of the artworks were selected for their relevance to the United Nations Sustainable Development Goals. A total of 1,239 participants from Portugal and Brazil contributed to the affective evaluations. Using a stimulus-sampling approach, each participant completed an online survey in which they viewed ten randomly selected artworks and rated their responses in terms of valence, arousal, and 11 cognitive-emotions (awe, being moved, inspiration, hope, sadness, anger, fear, emotional connection, reflection, awareness, and interest). Participants also reported their personal interest in street art and their level of sustainability consciousness. Multilevel models showed that greater interest in street art and higher sustainability consciousness predicted more positive emotions towards the artworks. In contrast, age and gender showed no meaningful effects, and differences between Portugal and Brazil were limited to ratings of awe and being moved. A network analysis of the discrete emotions revealed a three-cluster structure: Self-transcendent, Epistemic, and Negative emotions. Within this structure, emotional connection with the artwork's themes and being moved emerged as key bridging emotions linking the emotional clusters. Overall, these findings show that street art evokes complex combinations of emotions, often involving mixed or layered affective

states. The dataset provides an important resource on emotional responses to street art that can be applied to many other projects studying visual perception, aesthetic processing, and the communication of sustainability-related themes.

## Measuring Emotion Beliefs: A Systematic Review

**Presenting author:** Susie Peter, University College London, United Kingdom

**Co-author(s):** Bonamy Oliver, UCL, United Kingdom; Harriet Kabo, UCL, United Kingdom; Anna Raynaud, UCL, United Kingdom; Marthe Wiggers, University of Amsterdam, Netherlands; Matthew P. Somerville, UCL Institute of Education, United Kingdom

### Abstract

People hold different beliefs about the nature of emotions: some view emotions as valuable and controllable, while others see them as harmful and unchangeable. Evidence suggests that these emotion beliefs are associated with mental health symptoms via their influence on emotion regulation. To explore these beliefs, it is essential to employ valid and reliable measures. This systematic review provides a comprehensive overview of existing measures of emotion beliefs and an evaluation of their quality (validity, reliability). A search of seven online databases yielded a total of 5276 citations (after duplicate removal), of which 69 met inclusion criteria and were assessed using the Quality Assessment with Diverse Studies (QuADS) and modified criteria outlined by Halle and Darling-Churchill. The findings of this review serve as a resource for researchers and clinicians seeking emotion belief measures. However, it also identified several areas for advancement in the field, including a need to develop more consistent theoretical frameworks, measures using alternative assessment approaches beyond self-report questionnaires (e.g., vignettes), and measures specifically designed for children and adolescents. There is also an opportunity for more qualitative studies to explore emotion beliefs.

## Paper Session 42: Reading Motivation and Reading Practices

### Why do some children become avid readers while others do not? Predictors of reader profiles

**Presenting author:** Emmi Ulvinen, University of Jyväskylä, Finland

**Co-author(s):** Maria Psyridou, University of Oslo, Norway; Marja-Kristiina Lerkkanen, University of Jyväskylä, Finland; Anna-Maija Poikkeus, University of Jyväskylä, Finland; Minna Torppa, University of Jyväskylä, Finland

### Abstract

The importance of leisure reading for the development of reading skills is well recognized, and the declining time children and adolescents use for leisure reading is a growing concern. More information is needed about what predicts different types of leisure reading or the absence of it. In this study, our aim was to identify early predictors (at age 6) for leisure reading profiles, which are identified based on the frequency of reading different materials in Grades 1-9: Book readers, Comic readers, Online readers and Non-readers. We also studied whether predictors were similar among boys and girls. Multinomial logistic regression was used to identify the predictors. Predictor variables included emerging literacy skills (phonological awareness, letter knowledge, and word reading), vocabulary, listening comprehension; attention; shared reading, library visits, and the amount of books at home; parental education and parental reading difficulties. Overall, the most significant predictors include both reading-

related skills and home literacy practices. Informing and motivating parents, as well as facilitating access to libraries and books, are vital strategies for supporting home literacy practices.

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## Triggering and Developing Students' Interest in Reading: A Systematic Review

**Presenting author:** Bente Walgermo, University of Stavanger, Norway

**Co-author(s):** Per Henning Uppstad, Norwegian Reading Center, Norway; K. Ann Renninger, Swarthmore College, United States; Erin McTigue, University of Stavanger, Norway

### Abstract

Developing students' interest in reading is closely linked to enhancing reading skills and fostering self-regulation during text engagement. This systematic review examines K–5 instructional practices aimed at triggering, sustaining, and deepening students' reading interest. Thirty-five qualitative and quantitative studies met the inclusion criteria. Analyses consider how these practices align with the four phases of interest development (Hidi & Renninger, 2006), support student agency, affect reading outcomes, and vary in instructional complexity. A key finding is that while many studies showed positive associations between interest-focused practices, student agency, and reading ability, few detailed the processes by which interest develops or how teachers can intentionally cultivate an interest in reading over time. In reporting on and synthesizing findings from classroom-based research, this study findings offer evidence, as well as examples, of how classroom reading practices can support students' interest in reading to develop.

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## Metamotivational Immersive Support for Literacy and Reading Motivation Promotion in At-Risk Children

**Presenting author:** Karin Bar-Zvi Shaked, School of Education, Bar-Ilan University, Israel

**Co-author(s):** Adina Shamir, Bar-Ilan University, Israel

### Abstract

Low reading motivation may place young children at risk of Specific Learning Disorder (SLD) in language and literacy skills at increased levels of challenge, specifically in reading tasks. Based on prior research showing literacy improvement through the integration of self-regulated learning using electronic-books, this study examines the promotion of literacy and reading motivation through a metamotivational support within an immersive storybook (i-book) in an immersive multisensory environment. Forty-four first-grade students (Mage = 82.14 months, SD = 5.26) identified as at risk of SLD were assigned to an i-book group with a metamotivational support designed to enhance awareness and self-regulation of their motivational states during the reading activity, or to a control group. Both groups completed five sessions of direct instruction using the i-book targeting 12 vocabulary words. Vocabulary acquisition and reading self-efficacy were assessed before and after the intervention. Findings show that students in the metamotivational group demonstrated higher vocabulary acquisition and reading self-efficacy improvements. These results highlight the potential of integrating a direct metamotivational instruction support in an immersive environment to promote literacy and reading motivation among children at risk of SLD, who are early readers. Additional findings and implications for future research will be discussed.

## Reading together in the classroom: A Systematic Review and Typology of Practices

**Presenting author:** Tine Riis Andersen, University of Stavanger, Norway

**Co-author(s):** Karianne Megard Grønli, University of Stavanger, Norway; Per Henning Uppstad, Norwegian Reading Center, Norway; Bente Walgermo, University of Stavanger, Norway

### Abstract

Shared reading in classrooms is widely regarded as a promising approach to foster students' reading interest and emotional engagement with literature. While individual reading experiences can build personal connections to texts, sharing and discussing these experiences collectively adds a social dimension that may further strengthen students' motivation. However, research on shared reading practices appears fragmented and inconsistent: similar practices are labeled differently, and some labels encompass divergent approaches. This lack of coherence complicates both research and practice, leading to duplication of efforts and confusion among researchers and teachers. To address this, we conducted a systematic review following PRISMA guidelines (2020), identifying approximately 2000 records and including 61 studies published between 2010 and 2025. We have coded and analysed theoretical frameworks, methodological approaches, intervention features, and reported outcomes. Literature circles emerged as the most frequently described practice. Through inductive analysis, we identified six overarching dimensions: autonomy, collective meaning-making, text quality, personal experience and involvement, teacher support in dialogue, and cognitive and emotional challenges. These categories reflect key aspects of motivational and emotional engagement in shared reading. The review provides a typology linking theory, intervention features, and outcomes, enabling clearer distinctions between approaches and offering examples of effective practice. Findings have implications for research and practice by supporting coherent intervention development and highlighting components that foster students' reading interest and motivation.

## Poster Session 11. Domain-Specific Motivation and Learning in Mathematics and English

### P62 - Associations Between Students' Curiosity, Motivation, and Math Skills

**Presenting Author:** Katrina Nurmoja, Tallinn University, Estonia

**Co-author(s):** Kaja Mädamürk, Tallinn University, Estonia

### Abstract

Previous research has shown that curiosity is associated with students' motivation, exploration, and learning, as well as with planning and metacognitive strategies. Mathematics is a domain that requires both conceptual understanding and procedural proficiency, making it a relevant context to examine how curiosity and motivation interact on complex tasks. This study investigates relationships between students' curiosity, motivational components, and mathematics skills by assessing 7th-grade students (N = 200) from multiple schools across Estonia. Students' curiosity will be measured using the Joyous Exploration dimension of the Five-Dimensional Curiosity Scale, adapted for mathematics, capturing a tendency toward learning and the intrinsic enjoyment of intellectual exploration. Motivational beliefs will be assessed using previously validated instruments grounded in Situated Expectancy-Value Theory (SEVT), capturing expectancies for success, task values, and perceived costs. Mathematics skills will be assessed using tests comprising eight word problems of varying difficulty. Data collection will begin in January, followed by analyses exploring correlations and associations between curiosity, motivational beliefs, and mathematics skills. Because curiosity can vary across learning contexts, its interaction with motivation

under challenging tasks will be explored using SEVT as a framework for engagement and learning. The study aims to clarify how students with diverse curiosity dispositions perceive learning demands, such as effort and emotional costs, providing evidence-based insights for interventions that support skill development, maintain motivation, and promote engagement. Findings are expected to advance theoretical understanding and inform the design of learning environments that leverage curiosity to optimize effort allocation and enhance academic outcomes.

### **P63 - Grade 9 students' situational expectancies, values, and costs within and across math lessons**

**Presenting Author:** Aida Ohtonen, Åbo Akademi University, Finland

**Co-author(s):** Daniel Ventus, Åbo Akademi University, Finland; Johan Korhonen, Åbo Akademi University, Finland; Mats Braskén, Åbo Akademi University, Finland; Anna Widlund, Åbo Akademi University, Finland

#### **Abstract**

Although motivation research has had an increasing focus on situational and contextual factors, we still lack research on the dynamics of students' motivational beliefs and the roles of expectancies and task values within and between learning situations. Grounding in Situated Expectancy-Value Theory (SEVT), we investigated the extent to which variance in 9th graders' (15-year-olds) (N = 238) state-like motivational beliefs in mathematics can be explained at within-lesson (Level 1), between lesson (Level 2) and between student (Level 3) levels, and how prior trait-like mathematics motivation predicted state-like motivation at the between-student level. Following an experience sampling design, students' motivational beliefs were measured twice within each math lesson (beginning and end), across ten consecutive lessons. Findings from a three-level variance components model showed that for all motivational constructs except effort cost, the largest proportion of variance was explained at the between-student level (36%-64%), indicating substantial individual differences in students' motivational beliefs. A notable proportion of variance was also explained at the within-lesson level (30%-54%), consistent with SEVT's emphasis on the situational and dynamic properties of motivation. Effort cost was the only motivational construct for which within-lesson variance exceeded between-student variance, indicating that perceived effort demands were primarily driven by situational aspects rather than stable individual differences. A smaller proportion of variance was explained at the between-lesson level across constructs (6%-14%). Relations between trait-like and state-like motivation will be presented at the conference.

### **P64 - Early Self-Regulated Learning as a Longitudinal Predictor of Mathematics Achievement**

**Presenting Author:** Eliis Ait, Tallinn University, Estonia

**Co-author(s):** Valeri Murnikov, Tallinn University, Estonia; Eve Kikas, Tallinn University, Estonia; Piret Soodla, University of Tallinn, Estonia

#### **Abstract**

Self-regulated learning (SRL) integrates motivational beliefs, cognitive and metacognitive processes that support achievement (Imani et al., 2024; Schunk & DiBenedetto, 2020). Despite evidence linking SRL to academic success, it is unclear which early SRL components best predict later mathematics achievement. This longitudinal study aims to identify early motivational and self-regulatory predictors of Grade 7 mathematics outcomes. Study asks which Grade 3 SRL components predict later procedural/factual and conceptual mathematics knowledge and whether predicting components differ between lower- and higher-achieving students. Outcome data were available for 887 students (procedural/factual) and 880 students (conceptual). Descriptive statistics and logistic regression models estimated odds of belonging to the low-achievement group (the lowest 25% in the Grade 7 mathematics national assessment) based on Grade 3 SRL components. Preliminary results indicate that students who performed better on the attention, scientific-thinking, and word memorization tasks had lower odds of belonging to the low-

achievement group on the Grade 7 mathematics test. In addition to performance on cognitive tasks, higher scores on beliefs and a stronger willingness to persist in solving mathematical tasks were also associated with lower odds of low achievement. Contrary to expectations, students who reported placing higher value on the use of effective memory strategies showed higher odds of belonging to the low-achievement group on the Grade 7 test. Overall, the findings highlight early motivational regulation and sustained engagement as long-term predictors of procedural fluency and conceptual understanding, supporting inclusive early instruction and assessment practices that strengthen attentional control, persistence, adaptive beliefs, and strategic learning.

### P65 - A Skill-Based Intervention Targeting Mathematics Anxiety and Self-Efficacy

**Presenting Author:** Ellen Sammallahti, Åbo Akademi University in Vaasa, Finland

**Co-author(s):** Johan Korhonen, Åbo Akademi University in Vaasa, Finland; Jonatan Finell, Umeå University, Sweden; Bert Jonsson, Umeå University, Sweden; Carola Wiklund-Hörnqvist, Umeå University, Sweden

#### Abstract

Math anxiety is a well-documented barrier to mathematical learning and academic development, expressed through negative emotional, cognitive, and physiological reactions during mathematical tasks. Math self-efficacy, defined as beliefs about one's capability to succeed, is consistently associated with higher performance and lower anxiety. Together, math anxiety, self-efficacy, and performance form a tightly interconnected motivational-emotional system. Grounded in Control-Value Theory (CVT), which emphasizes perceived control and task value as key antecedents of achievement emotions, the present study examined whether a skill-based multiplication intervention could reduce students' mathematics anxiety by strengthening self-efficacy. The study included 384 Grade 4 students from 18 schools in Sweden who participated in a 20-session multiplication intervention. Mathematics anxiety was assessed at pre- and post-test, while self-efficacy was measured on four occasions during the intervention. Latent growth curve modeling was employed to examine initial level and changes in self-efficacy during the intervention and how these related to pre- and post-test math anxiety. Results showed a significant average increase in self-efficacy over time (slope mean  $M = 0.27$ ,  $p < .001$ ). Early mathematics anxiety predicted lower initial self-efficacy ( $\beta = -0.49$ ,  $p < .001$ ) but steeper growth in self-efficacy ( $\beta = 0.36$ ,  $p < .05$ ). Both higher initial self-efficacy ( $\beta = -0.19$ ,  $p < .05$ ) and greater increases over time ( $\beta = -0.20$ ,  $p = .037$ ) were associated with lower post-test anxiety. Overall, the findings suggest that skill-based practice enhances perceived control and self-efficacy, thereby attenuating mathematics anxiety, providing longitudinal support for CVT-based accounts of achievement emotions.

### P66 - Leveraging Student Emotions to Enhance Mathematics Engagement and Learning

**Presenting Author:** Destini Braxton, University of Virginia, United States

**Co-author(s):** Jonee Wilson, University of Virginia, United States

#### Abstract

Research on student engagement has traditionally emphasized behavioral (dis)engagement. For instance, the classroom observation rubric (Author, 2023) includes a component that attends to teachers' pedagogical responses to students who appear distracted or disruptive. In this study, we investigate students' emotional engagement to illuminate how academic emotions shape mathematical interactions. We systematically identified moments in recorded mathematics instruction in which students exhibited observable indicators of emotional engagement that were directly connected to the mathematical activity at hand. We then analyzed the teacher's practices, examining how those practices may have supported or influenced students' emotional engagement and identifying elements of the interactions that were, and were not, represented in the observation rubric. Through this

focus on emotional engagement, we aim to extend existing scholarship on students' academic emotions, emotional engagement, and mathematics teaching practices.

### **P67 - Instructional Quality, Self-Efficacy, and Achievement in English Class**

**Presenting Author:** Tatjana Németh, University of Vienna, Austria

**Co-author(s):** Marko Lüftenegger, University of Vienna, Austria

#### **Abstract**

Instructional quality, divided into classroom management, cognitive activation, and supportive climate, is emerging as a key factor in student motivation and achievement. This paper examines the relationship between instructional quality, self-efficacy, and achievement in English as a foreign language class in school. Building on opportunity-use models, it is argued that self-efficacy acts as a mediator in this process. Data was collected using self-reports at two time points. The sample included 1846 students ( $M_{age}=17.05$ , 57.5% female) from 103 classes at 30 Austrian schools. Relationships were examined using structural equation modeling. Results show that self-efficacy can fully mediate the effect of cognitive activation on achievement and partially mediate the effect of supportive climate on achievement. Thus, a direct effect between supportive climate and achievement can also be found. For classroom management, no direct or indirect effects with self-efficacy and achievement could be found. The study provided initial findings on what can positively influence English skills development in secondary school and the beliefs one holds about those skills. Implications and limitations of this study will be discussed.

## **Poster Session 12. Teaching Practices, Instructional Quality, and Motivational Support**

### **P68 - Socio-Cultural Differences in (De)Motivating Teaching Practices: The Role of Teachers' Attitudes**

**Presenting Author:** Femke Borst, University Utrecht, Netherlands

**Co-author(s):** Barbara Flunger, Utrecht University, Netherlands; Lisette Hornstra, Utrecht University, Netherlands

#### **Abstract**

In the Netherlands, persistent educational inequalities continue to exist. Students from lower socioeconomic and minoritized ethnic backgrounds often enter and leave primary education at a disadvantage: achievement gaps between students from different backgrounds tend to persist or even widen over time. According to Self-Determination Theory (SDT), all students, regardless of their socio-cultural background, benefit from motivating teaching practices. Yet, teachers differ in the extent to which they provide motivating or demotivating teaching to individual students within the same classroom, and prior research suggests that such differences are associated with students' socioeconomic and ethnic backgrounds. In this study, we examine the extent to which teachers differentiate their (de)motivating teaching practices towards students from diverse ethnic and socioeconomic backgrounds, and we examine whether such differentiation may be explained by teachers' attitudes towards students from lower socioeconomic and minoritized ethnic backgrounds. This research is part of a larger, longitudinal research project with three waves. We are currently collecting data for the second wave from  $\pm 50$  teachers and their  $\pm 1000$  students, and we will use explicit and implicit measures to assess teachers' attitudes. The first (preliminary) results will be presented during the ICM 2026. This research aims to advance understanding of mechanisms through which teacher-student interactions contribute to unequal educational opportunities.

## P69 - Micro-Level Dynamics of Inequality: Differentiation in Need-Supportive and Need-Thwarting Teaching

**Presenting Author:** Teuntje van Heese, Universiteit Utrecht, Netherlands

**Co-author(s):** Lisette Hornstra, Utrecht University, Netherlands; Heleen Pennings, HAN University of Applied Sciences/Radboud University, Netherlands

### Abstract

Educational inequalities between students from different socioeconomic and ethnic backgrounds continue to widen, with early disadvantages often persisting throughout primary school. Although teachers play an essential role in shaping students' daily learning opportunities, little is known about how inequalities may emerge in moment-to-moment teaching. Existing survey-based research suggest that teachers engage differently with students from different socioeconomic or ethnic backgrounds, but these approaches overlook the dynamic and highly fluctuating nature of teaching. Guided by Self-Determination Theory (SDT), this study investigates whether differentiation emerges in the real-time need-supportive and need-thwarting teaching practices toward students with different socioeconomic and ethnic backgrounds. Employing a micro-analytical coding procedure, we analyze teaching practices in 32 videotaped primary school lessons. Each coded interaction is linked to individual students' characteristics (SES, ethnicity, gender) derived from parent surveys, student self-reports, and teacher estimates. By moving beyond aggregated measures and capturing the dynamic unfolding of classroom processes, this study offers a novel perspective on how inequalities may be reinforced or reduced through everyday teaching patterns. The findings aim to illuminate the micro-level processes through which basic psychological need support and need thwarting is enacted and how these processes relate to educational inequality.

## P70 - Prerequisites and instructional practices supporting students' psychological needs

**Presenting Author:** Fabian Schächt, Bergische Universität Wuppertal, Germany

**Co-author(s):** Stefan Markus, University of Wuppertal, Germany

### Abstract

Supporting the basic psychological needs for autonomy, competence, and relatedness constitutes an essential task for teachers in everyday school practice. To date, however, research has paid little attention to how teachers concretely support these three basic needs in interactional processes and which internal, teacher-related prerequisites underlie these respective support practices. The present study therefore aims to address this gap by, on the one hand, identifying teachers' individual prerequisites for competence, autonomy, and relatedness support and, on the other hand, examining the specific instructional practices associated with the support of each of the three basic needs. To this end, N = 28 teachers from German best-practice schools were interviewed, and the interviews were analyzed using qualitative content analysis. Preliminary findings indicate that support for relatedness was coded by far most frequently and is perceived by teachers as particularly relevant. In contrast, autonomy support was coded least frequently by a substantial margin. This research contributes to the conceptualization of concrete basic need-supportive practices in everyday school and classroom settings and provides a more in-depth overview of the multifaceted nature of teacher-related instructional practices. Implications for the professionalization of teacher education and teacher training can be derived.

## P71 - Teaching experiences' categorical impact on students' motivation to learn in middle school

**Presenting Author:** Luke Fryer, The University of Hong Kong, Hong Kong

**Co-author(s):** W. L. Quint Oga-Baldwin, Waseda University, Japan; Kaori Nakao, Seinan Gakuin University, Japan

### Abstract

**Background:** Middle school students' motivation to learn is critical but complex. No single theory can capture the variety of concurrent motives students experience across the range of different domains within which they need to achieve. Previous research has suggested that flexible person-centered, theoretically integrative research design which marries teaching and student learning is an important part of making advances improving our understanding of this complex issue. **Aims:** The present study was designed to examine the impact of students' instructional experiences on their motivations to learn in native language, foreign language and mathematics middle school classes. **Methods:** Applying perceived control, social cognitive and self-determination theories, the present person-centered study examined the lagged relationship between instructional experiences (Structure, Involvement and Autonomy-Support) and subgroup membership. Subgroups and their respective profiles were estimated employing Latent Profile Analysis (LPA). The study took place at six individual Japanese middle schools, with data collected from year nine students ( $n=813$ ; Female=384). Instructional experiences and profiled data collections were separated by approximately five months. **Results:** LPAs for each subject resulted in four common subgroups with profiles partially consistent with previous research findings and aligning with established relationships between motivation and self-efficacy beliefs. Structure stood out as the most important predictive instructional experience for membership in the Good Quality motivation profile, highlighting the well-established role of teaching components such as clarity and feedback. The practical, theoretical and cultural implications are discussed for the field going forward.

## P72 - Academic Buoyancy as a Moderator between Teacher Clarity and Student Emotions

**Presenting Author:** Javier Sánchez-Rosas, Universidad Católica de Temuco, Chile

**Co-author(s):** Luis Rojas-Torres, Instituto de Investigaciones Psicológicas, Universidad de Costa Rica, Costa Rica

### Abstract

Negative achievement emotions are common in higher education, especially under uncertainty. Guided by Control-Value perspectives, we examine how an instructional feature-teacher clarity-and a personal resource-academic buoyancy-jointly relate to students' in-class emotions. Undergraduate students ( $N = 255$ ) from a Latin-American university completed validated measures of perceived teacher clarity, academic buoyancy, and three discrete negative emotions in class: anxiety, anger, and shame. We estimated separate structural models for each emotion, testing main effects of clarity and buoyancy and an interaction (Clarity  $\times$  Buoyancy) to probe moderation. Results converged for anxiety and anger: both were lower when clarity and buoyancy were higher, and clarity's association was strongest at moderate-to-high buoyancy (weak or ambiguous at low buoyancy). For shame, buoyancy was the most robust negative correlate; the clarity link was small, with a modest interaction indicating that students with higher buoyancy translated clarity into lower shame more effectively. Findings support a person  $\times$  context account in which instructional structure (clarity) and everyday coping (buoyancy) combine to shape emotional experiences. Practically, professional development should align clarity practices (explicit criteria, coherent sequencing, signaling, checks for understanding) with buoyancy-building routines (planning for setbacks, adaptive attributions, structured help-seeking) to reduce anxiety and anger and guard against shame in routine class settings.

### P73 - Teacher Achievement Verbalizations and Oral-Exam Avoidance: Emotions and Buoyancy as Mediators

**Presenting Author:** Javier Sánchez-Rosas, Universidad Católica de Temuco, Chile

**Co-author(s):** Sergio Dominguez-Lara, Escuela de Psicología, Universidad de San Martín de Porres, Peru

#### Abstract

Oral examinations involve direct interpersonal evaluation that can intensify negative achievement emotions and avoidance. We tested two structural equation models linking teacher achievement verbalizations during oral exams to behavioral avoidance (inhibition, postponement) through negative emotions and academic buoyancy. Undergraduate students (N = 415) reported perceived positive/negative teacher verbalizations, negative emotions in oral exams, academic buoyancy, and behavioral avoidance. In Model 1, teacher verbalizations (exogenous) predicted behavioral avoidance (latent outcome) via a latent negative-emotions factor whose indicators were anxiety, shame, and hopelessness. Model 2 added academic buoyancy as an additional mediator, specifying parallel and sequential pathways (verbalizations → buoyancy → negative emotions → avoidance). Models were estimated with robust ML; direct and indirect paths were retained and indirect effects computed. Results showed that more negative verbalizations related to greater avoidance, partly via higher negative emotions; adding buoyancy accounted for additional variance through both parallel and sequential mediation. Positive verbalizations showed the opposite pattern. A direct path from verbalizations to avoidance remained, indicating partial mediation. Findings highlight evaluative communication as a proximal lever and identify academic buoyancy as a mechanism linking teacher talk to emotional and behavioral responses in oral-exam contexts.

## Poster Session 13. Higher Education Adjustment, Persistence, and Academic Success

### P74 - The benefits of Self-Esteem in First-Generation Students' College Adjustment

**Presenting Author:** Thérèse Bouffard, Université du Québec à Montréal, Canada

**Co-author(s):** Marie-Claude Rainville, Cégep de Lanaudière à Joliette, Canada; Carole Vezeau, Université du Québec à Montréal, Canada

#### Abstract

Breaking away from family culture to pursue postsecondary education is an emotionally charged endeavor for first-generation students (FGS). This study examined the protective role of self-esteem as an internal resource in promoting educational success among a cohort of 773 students entering postsecondary education, including 200 FGS. The results indicate that when self-esteem is high, FGS' adjustment and academic performance are comparable to those of their continuing-generation peers. When self-esteem is low, however, FGS exhibit poorer personal and social adjustment and achieve lower academic outcomes. Also, when feelings of alienation and anxiety symptoms are high, the social adjustment of first-generation students is lower than that of continuing-generation students.

## P75 - Understanding Student Permanence through a Brief Instrument: Quantitative and Qualitative Evidence

**Presenting Author:** Karina Curione, Facultad de Psicología, Universidad de la República, Uruguay

**Co-author(s):** Nicolás Chiarino, University of Republic, Uruguay; Florencia Filippi, Facultad Psicología, Uruguay; Nicolás Fiori, Universidad de la República, Uruguay

### Abstract

This study presents the development of a brief version of the Instrument for the Study of Student Permanence and Dropout in University designed to analyze retention and dropout processes in the first year of higher education. Starting with an original 65-item version, psychometric analyses were conducted to refine the scale into a brief 38-item version, organized into 10 dimensions that integrate motivational, self-regulatory, affective, and academic integration variables. The abbreviated version was administered to a sample of 879 first-year undergraduate psychology students. The results show adequate levels of reliability and significant associations between the assessed dimensions and the intention to remain or drop out. Regression analyses identified autonomous motivation, academic satisfaction, academic self-efficacy, sense of belonging, and time management as relevant predictors of the intention to remain or drop out. Complementarily, an open-ended question was analysed using a mixed-methods content analysis, identifying personal and institutional factors influencing student permanence, such as intrinsic motivation, interactions with faculty and peers, and teaching and assessment formats. The integration of quantitative and qualitative evidence contributes to a broader understanding of the dynamics involved in student permanence in higher education contexts characterized by high dropout rates.

## P76 - The Mediating Role of Frustration of Basic Psychological Needs between Entitlement and Burnout

**Presenting Author:** Diana Kopačević Olčar, Faculty of Teacher Education, University of Zagreb, Croatia

**Co-author(s):** Linda Mravunac Fabijanić, University of Zagreb, Academy of Music, Croatia; Blaženka Bačlija Sušić, Faculty of Teacher Education, University of Zagreb, Croatia

### Abstract

The work of collaborative pianists/piano accompanists spans different contexts, and therefore, they face a variety of professional challenges. Drawing on Equity Sensitivity (and Self-Determination Theory, this study explores whether frustration of basic psychological needs mediates the relationship between one of the equity sensitivity dimensions, entitlement, and work-related burnout in classroom and performance contexts, as well as client-related burnout in dyadic and triadic professional settings, among collaborative pianists. The sample consisted of 118 collaborative pianists from across Croatia. The participants' mean age was 40.24 years (SD = 10.39), and 75.4% of them were female. The results indicate that the need for autonomy is a significant mediator. Higher levels of entitlement among collaborative pianists lead to greater autonomy, which in turn leads to higher work-related burnout in classroom teaching and performance. In dyads and triads, the opposite pattern was found. As anticipated, higher levels of entitlement among collaborative pianists lead to greater autonomy need frustration. However, in these settings, this predicts lower burnout. These results support the predictions of Self-Determination Theory in classroom teaching and performance, but contradict them in dyads and triads. This highlights the importance of context and indicates the need for further investigation. This study connects Self-Determination Theory and Equity Sensitivity and applies these insights to collaborative piano lessons in the Croatian music education system. The findings are significant because collaborative pianists sometimes stand in a sensitive position between the instrument or vocal teacher and the student, which places them under particular pressure.

## P77 - Motivation and Self-Regulated Learning as Drivers of Academic Success in First-Year Health Students

**Presenting Author:** Karina Curione, Facultad de Psicología, Universidad de la República, Uruguay

**Co-author(s):** María Noel Alvarez, Universidad de la República, Facultad de Medicina, Uruguay; Teresa Freire, Universidad de la República, Facultad de Medicina, Uruguay

### Abstract

Self-regulated learning (SRL) is a key determinant of academic success in higher education, particularly during the first year of university, a period characterized by high cognitive demands and elevated dropout rates. This study examined the relationships between motivation, self-regulated learning strategies, contextual variables, and academic performance among first-year undergraduate students enrolled in a foundational biomolecular course within the Health Introductory Cycle at a public university in Uruguay. A descriptive, cross-sectional mixed-methods design was employed. Quantitative data were collected from 706 students using validated versions of the Motivated Strategies for Learning Questionnaire (MSLQ) and the Online Self-Regulated Learning Questionnaire (OSLQ). Academic performance was used to classify students into four achievement levels. Data were analyzed using reliability and correlational analyses, group comparisons, and multiple regression models. Higher academic performance was significantly associated with greater intrinsic value and self-efficacy, lower test anxiety, and increased use of metacognitive self-regulation, effort regulation, and time and study environment management. Motivational and metacognitive dimensions from the MSLQ were associated with high academic achievement, whereas most OSLQ dimensions showed limited differentiation across performance levels. Students with academic delay exhibited significantly lower motivation, self-efficacy, and use of self-regulated learning strategies. Although academic performance did not differ by course modality, students in blended courses reported greater use of context-specific SRL strategies related to planning and time management. Overall, the findings highlight the central role of motivation, effort regulation, and time/learning environment management in early academic success and underscore the need for context-sensitive interventions to strengthen SRL skills in health science education.

## P78 - The effect of self-compassion intervention on stress in university students

**Presenting Author:** Takuya Horiki, Doshisha University, Japan

**Co-author(s):** Ayane Hari, Doshisha University, Japan; Ayumi Tanaka, Doshisha University, Japan

### Abstract

The effect of self-compassion intervention on stress in university students Abstract Self-compassion is defined as the ability to take a strong and determined stance against harm and bounce back from difficult situations. A meta-analysis reveals that a self-compassion intervention has a moderate to large effect on the alleviation of stress (Ferrari et al., 2019). In this study, we aimed to examine the effects of the intervention by using objective and subjective measures of stress, specifically heart rate variability. Sixty-four Japanese university students were randomly assigned to a self-compassion intervention group or an active control group. Both interventions consisted of three sessions and weekly tasks. Prior to and following the interventions, we measured the participants' heart rate variability using a wearable device: The Garmin Forerunner 255 with the Garmin Connect application. We recorded their stress data three occasions in eight minutes. We also assessed subjective stress using the Perceived Stress Scale 14 (PSS-14) and self-compassion using the Japanese version of the Self-Compassion Scale Short Form (SCS-J-SF). The results of the linear mixed models confirmed our hypothesis, indicating that the self-compassion intervention increased the subjects' self-compassion. There were no significant effects on subjective or objective stress, nor any interactions. However, we found a significant correlation between the difference in self-compassion scores and the difference in subjective stress scores. These results suggest that a self-compassion intervention

reduces subjective stress indirectly by enhancing self-compassion. For future research, careful consideration of the timing and duration of objective stress measurements is necessary.

## Poster Session 14. Motivation, Work, and Future-Oriented Pathways Beyond School

### P80 - Meaningful work and reduced procrastination: the role of work engagement and socioemotional skills

**Presenting Author:** Elisabete Yee Camões, ISCTE - Lisbon University Institute, Portugal

**Co-author(s):** Anabela Caetano Santos, ISCTE - Lisbon University Institute, CIS-IUL, Portugal; Patrícia Arriaga, ISCTE - Lisbon University Institute, CIS-IUL, Portugal

#### Abstract

In this study, we analyzed the association between meaningful work and workplace procrastination, as mediated by work engagement. Additionally, we investigated the moderating role of socioemotional skills (specifically, self-management and emotional resilience) on the relation between meaningful work and work engagement. Grounded in the Job Demands-Resources model and the Conservation of Resources theory, meaningful work was conceptualized as a motivational job resource expected to enhance engagement and reduce procrastinatory behaviors. A pre-registered cross-sectional online survey was conducted in Portugal, with a final sample of 267 working adults. Participants completed four self-report instruments: Work and Meaning Inventory (WAMI), Utrecht Work Engagement Scale, Procrastination at Work Scale (PAWS), and Behavioral, Emotional, and Social Skills Inventory. The WAMI and PAWS were translated and culturally adapted. Meaningful work correlated strongly with engagement and, to a lesser extent, with less procrastination. On the other hand, procrastination was negatively related to socioemotional skills, especially with self-management and, to a more moderate extent, emotional resilience. Mediation analysis showed that meaningful work is associated with lower procrastination through increased engagement. No significant moderation effect emerged from the exploratory analyses, indicating that self-management and emotional resilience may function as additional personal resources rather than moderators. Overall, the results indicate that when work is perceived as meaningful, it tends to predict greater work engagement and less procrastination, thus highlighting its role as a motivational resource in the workplace.

### P81 - Would I succeed, is it worth it? Exploring motivation in school-based health education

**Presenting Author:** Mariana Brazão, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

**Co-author(s):** Joana Pipa, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal; Marta Pôjo, Liga Portuguesa Contra o Cancro, Portugal; Francisco Peixoto, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

#### Abstract

Health behaviors are established early in life, making schools a key setting for health education. School-based health education is expected to develop health knowledge and foster motivational competencies essential for sustained behavior change. Despite its curricular relevance, little is known about how motivation for health behaviors is being addressed. Within educational research, Expectancy-Value Theory (EVT) highlights the role of expectancies for success and subjective task values (i.e., attainment, intrinsic, utility, and cost) in shaping individuals' choices, engagement, and performance. Despite its well-established empirical support, EVT has received limited attention within health education research. Guided by EVT, this qualitative study examines how students perceive motivational processes embedded in school-based health education. Focus groups with 5th and

6th grade students invite children to imagine a new school subject designed to help them learn how to be healthy. Discussions explore perceptions of health, motivational facilitators and barriers, expectancies for success, and dimensions of task value. Sessions will be audio-recorded, transcribed verbatim, and analyzed using reflexive thematic analysis. Approximately 60 students are expected to participate. Anticipated findings include age-typical, abstract understandings of health; identification of concrete facilitators and barriers reflecting perceived costs; generally high but still developing competence beliefs; and recognition of contextual features that could enhance the value of health education. Understanding how frequently each motivational dimension emerges might guide which dimension should be prioritized in school-based health education interventions. These insights could support the development of theory-driven health education approaches that foster both knowledge and motivational competencies, consistent with the WHO's definition of health education.

## P82 - Motivation and Well-Being Among Platform Workers: A Self-Determination Theory

### Approach

**Presenting Author:** Sílvia Lopes, Universidade de Coimbra, Portugal

**Co-author(s):** Ana Sofia Menício, Universidade de Coimbra, Portugal; Diogo Cerdeira, Universidade de Coimbra, Portugal; Soraia Oliveira, Universidade de Coimbra, Portugal

### Abstract

Digital labor platforms have become a prominent form of work, often characterized by flexibility, autonomy, and algorithmic management, but also by job insecurity and limited social protection. Drawing on Self-Determination Theory, this study examines how different types of motivation relate to well-being among platform workers. Specifically, we investigate the associations between autonomous and controlled motivation and two key indicators of occupational well-being: work engagement and burnout (exhaustion and cynicism). Participants were 65 platform workers operating on digital labor platforms (e.g., ride-hailing and delivery services), predominantly male, with diverse national backgrounds and educational levels. Data were collected through self-report questionnaires assessing work motivation, engagement, and burnout. Structural equation modeling using IBM SPSS AMOS was employed to test the hypothesized relationships. Results showed that autonomous motivation was positively associated with work engagement, accounting for a substantial proportion of the variance. Conversely, controlled motivation was not significantly associated with engagement. Neither autonomous nor controlled motivation was significantly associated with burnout dimensions. These findings suggest that, even in a work context marked by insecurity and algorithmic control, autonomous motivation plays a key role in sustaining positive work-related experiences, whereas controlled motivation appears less relevant for explaining well-being outcomes. The study contributes to the growing literature on platform work by highlighting the importance of motivational quality for understanding well-being in non-standard forms of employment.

## P83 - Emotions and protective policies: Emotional dynamics in housing policy-making in Portugal

**Presenting Author:** Fernanda Jesus, University of Coimbra - Faculty of Psychology and Educational Sciences, Portugal; Ana Neves, University of Coimbra - Faculty of Psychology and Educational Sciences, Portugal

**Co-author(s):** Lisete Mónico, University of Coimbra, Faculty of Psychology and Educacional Sciences, Portugal; Maria Paula Paixão, Faculty of Psychology and Educational Sciences, University of Coimbra, Portugal

### Abstract

This paper analyses the emotional dynamics involved in protective policies-making processes - specifically, housing policies - in Portugal during periods of heightened insecurity. Although policymakers typically rely on technical and legal discourse to legitimise their actions, they also mobilise emotions, such as fear and trust, and feelings of insecurity to support policy decisions. Focusing on housing policymaking in Portugal, the paper analyses

how political actors conceptualise protective policies, identify threats and needs, and activate emotions through political discourse. The research is based on a qualitative content analysis of Portuguese parliamentary debates and speeches on housing policies between March 2020 and March 2024, to include the pandemic and inflation crises. A comparative analysis of the two crisis periods allows us to explore similarities and/or differences in emotional mobilisation. By comparing the pandemic and inflationary crises, the paper demonstrates how emotions are mobilised differently across contexts of insecurity, shaping the framing and legitimisation of housing protective policies in Portugal.

## **P84 - Motivation, Time Use, and Success in Academia: Performance and Well-Being Across Countries**

**Presenting Author:** Johanna Ott, University of Augsburg, Germany

**Co-author(s):** Martin Daumiller, University of Freiburg, Germany; Markus Dresel, University of Augsburg, Germany; Ronja Steinhauser, University of Mannheim, Germany; Stefan Janke, University of Mannheim, Germany; Oliver Dickhaeuser, University of Mannheim, Germany

### **Abstract**

Academic careers are marked by high performance demands and increasing risks of strain and attrition, despite generally high job satisfaction. While research performance and well-being are key predictors of persistence in academia, less is known about how individual motivation and time-related job demands jointly shape these outcomes across national contexts. This international comparative study examines achievement goals and time allocation as predictors of research performance and well-being among academics. The sample comprised 410 academics from Germany, Norway, and South Africa. Achievement goals were differentiated into learning, task, appearance, normative, relational, and work-avoidance goals. Objective research performance was assessed using the h-index, while subjective performance was measured as perceived research progress. Indicators of well-being included job satisfaction and strain. Time-related factors comprised weekly working hours, teaching load, and time allocated to research, teaching, and administration. A structural equation model was estimated controlling for career stage, discipline, tenure status, and country. Objective and subjective research performance were only weakly related, indicating distinct aspects of academic success. The h-index was positively associated with career stage, natural sciences affiliation, and approach-oriented normative and appearance goals. Perceived research progress was positively predicted by learning and relational goals and by time spent on research and negatively predicted by work-avoidance goals and teaching load. Relational goals were consistently associated with higher job satisfaction, whereas strain was linked to longer working hours and avoidance-oriented appearance goals. Overall, the findings highlight the importance of motivational orientations and time allocation for sustaining academic performance and well-being.

## **P85 - Sports and academic anxiety among youth athlete students: An Experience Sampling**

### **Method Approach**

**Presenting Author:** Teresa Silva, ISPA - Instituto Universitário, Portugal

**Co-author(s):** Joana Pipa, ISPA - Instituto Universitário | EDUNOVA.ISPA, Portugal

### **Abstract**

Achievement emotions, such as anxiety, play a critical role in shaping motivation and performance across achievement contexts, including sports and school. According to the Control-Value Theory (CVT), anxiety arises from the interaction of perceived control and the value of success, such that high-value goals coupled with low perceived control tend to increase anxiety. Student-athletes represent a unique population, as they simultaneously

negotiate high-performance sport and academic demands, which may amplify anxiety across contexts. Despite extensive research on sports and academic anxiety individually, their interrelationship and potential spillover effects remain underexplored. Thus, this study aims to explore the relationship between trait and state sports and academic anxiety among youth athlete students. This exploratory study integrates CVT with the Experience Sampling Method (ESM) to examine trait and state anxiety among 60 pre-adolescent and adolescent athletes in intensive acrobatic gymnastics training centres. Trait-oriented anxiety, control, and value appraisals will be assessed using validated self-report instruments, including the Sports Anxiety Scale-2 (Smith et al., 2006), the Achievement Emotions Questionnaire (Peixoto et al., 2015), the Self-Concept and Self-Esteem Scale for Adolescents (Peixoto et al., 2017), and the Expectancy-Value Scale (Peixoto et al., 2022). Momentary anxiety will be assessed three times daily over a 14-day period during competition and non-competition weeks. Data will be analysed using correlational analyses and multilevel regression models. Findings are expected to elucidate the dynamic interplay between sports and academic anxiety, providing actionable insights for targeted support strategies to enhance student-athletes' adjustment and performance across dual achievement contexts.

## Symposium 19: Motivation and Agency in Challenging Contexts: Psychological Need Processes in Constraining Contexts

**Organizer:** Joachim Waterschoot, Ghent University, Belgium; Lennia Matos, Pontificia Universidad Católica del Perú, Peru

**Chair:** Joachim Waterschoot, Ghent University, Belgium

**Discussant:** Tim Urdan, Santa Clara University, United States

### Abstract

Periods of rapid social change and challenging conditions place individuals under heightened psychological strain, often intensifying experiences of control, threat, and emotional vulnerability. Drawing on Self-Determination Theory, this symposium discusses how motivational and emotional processes related to basic psychological needs shape well-being, agency, and orientations toward authority across educational, developmental, institutional, and societal contexts. The first contribution examines classrooms as early environments where control and agency are negotiated. Longitudinal multilevel data from South Korean adolescents show that student passivity fuels increasing teacher control, whereas student agency and autonomy-supportive teaching mutually reinforce one another over time. The second contribution adopts a developmental perspective, using a two-decade longitudinal cohort study in Belgium to examine whether autonomy-supportive parenting in early adolescence predicts right-wing authoritarianism and social dominance orientation in adulthood. Parental autonomy support robustly predicts lower authoritarian beliefs nearly twenty years later. The third contribution focuses on incarcerated women in Peru, showing that need-supportive prison environments predict greater well-being, while need crafting functions as an agentic strategy to maintain psychological functioning under extreme constraint. The final contribution situates these processes at the societal level, demonstrating how political conditions and perceived threat shape well-being and openness to authoritarian solutions through psychological need satisfaction and frustration. Together, these studies illustrate how motivational and emotional processes provide a unifying framework for understanding adaptation, resilience, and authority in challenging contexts.

### ***Reversing Classroom Authoritarianism (Teacher Control): Two Catalysts***

**Presenting Author:** Johnmarshall Reeve, Australian Catholic University, Australia

**Co-author(s):** Sung Hyeon Cheon, Korea University, Republic of Korea

#### **Abstract**

The classroom manifestation of authoritarianism is teacher control. While the antecedents of a controlling motivating style are well known, the opposite concern of reversing teacher control is underexplored. In this research, we identify two catalysts to reversing a controlling motivating style—namely, autonomy-supportive teaching and students' agentic engagement. We propose a model of how baseline autonomy-supportive teaching, controlling teaching, and student agency influence change in each other over time. The research design was a two-wave within-subjects survey study with repeated dependent measures, as participants reported their course-specific agency, perceived autonomy-supportive teaching, and perceived controlling teaching at the beginning and end of an 18-week semester. Participants were 441 South Korean middle and high school students ( $M = 14.5$  years,  $SD = 1.9$ , Range: 12-18; 245 males, 196 females) from 18 physical education classes. The multilevel structural equation modeling analysis fit the data well. Three of the four hypothesized reciprocal effects were statistically significant. The primary findings were that initial student passivity (agentic disengagement) fueled greater teacher control, while student agency facilitated autonomy-supportive teaching and, together, agency and autonomy support created a classroom culture that rendered teacher control inappropriate and unwelcomed.

### ***How Political Regimes Shape Anticipated Psychological Need Experiences Under Crisis***

**Presenting Author:** Joachim Waterschoot, Ghent University, Belgium

**Co-author(s):** Maarten Vansteenkiste, Ghent University, Belgium

#### **Abstract**

Societies are increasingly confronted with diverse crises, yet little is known about how such threats shape people's psychological functioning, particularly their anticipated satisfaction and frustration of basic psychological needs. Drawing on Self-Determination Theory, this study examined how different crisis types influence anticipated need experiences, and whether these effects vary across political regimes (democratic vs. autocratic) and individuals' dispositional need fulfillment. In a large-scale vignette experiment ( $N = 5159$ ;  $Mage = 55.9$ , range: 18–90), participants imagined living under both a democratic and an autocratic government (within-subjects), while being exposed to either a neutral scenario or one of five crisis types (virus, economic crisis, terrorism, natural disaster, or war; between-subjects). Participants reported anticipated need satisfaction and frustration in each condition, and completed a measure of dispositional need fulfillment prior to the manipulation. Across all crisis types, anticipated need satisfaction decreased and need frustration increased relative to the neutral condition. These effects were particularly pronounced in democratic contexts and among individuals with high dispositional need fulfillment. In autocratic contexts, anticipated need frustration was chronically elevated and largely unaffected by crisis exposure. Importantly, even under crisis conditions, anticipated need satisfaction remained significantly higher in democratic than in autocratic regimes. These findings suggest that democratic systems are psychologically more sensitive to threat but ultimately more resilient, whereas autocratic systems are characterized by persistently low and inflexible need fulfillment. Implications for political regimes as motivational ecosystems and for crisis communication are discussed.

### ***Early adolescent parenting and right-wing authoritarianism and social dominance decades later***

**Presenting Author:** Daniel Kopala-Sibley, University of Calgary, Canada

#### **Abstract**

A substantial body of research has sought to understand the developmental origins of right with authoritarianism (RWA) and a social dominance orientation (SDO). However, no research of which we are aware has examined whether parenting in early adolescence predicts the development of RWA as well as SDO beliefs in adulthood. Data were drawn from the Flemish Study of Parenting and Personality Development in Belgium, a longitudinal study of parents and their offspring. Participants were 489 Belgian adolescents (255 females) and their parents. In 2007, when offspring were aged 12-14 years, adolescents, mothers, and fathers completed self report measures of each parent's autonomy support, warmth, and overreactivity towards offspring. In 2024, when offspring were aged 29-30, they completed measures of their beliefs in RWA and SDO. Parenting predictors were measured via latent variables indicated by manifest measures of adolescent reports about each parent, each parent's report of their own behaviours, and each parent's report of the other parent's behaviours. Only increased maternal and paternal autonomy support predicted decreased RWA and SDO. All effects were significant independent of offspring age and sex and parental and offspring education levels. Effect sizes were large, with models explaining 18-25% of variance in RWA and SDO. The unique effects of parental autonomy support relative to warmth or overreactivity suggest that allowing young adolescents to pursue activities and choices volitionally and independently may lead to a belief in the freedom and autonomy of others, ultimately resulting in reduced RWA and SDO beliefs.

### ***Reclaiming Agency Behind Bars: Need-Crafting as a Key Resource For Women Deprived of Liberty***

**Presenting Author:** Lennia Matos, Pontificia Universidad Católica del Perú, Peru

**Co-author(s):** Sharon Gorenstei, Pontificia Universidad Católica del Perú, Peru; Sofie Morbée, Ghent University, Belgium; Joachim Waterschoot, Ghent University, Belgium; Rafael Gargurevich, Pontificia Universidad Católica del Perú, Peru; Jolene Van der Kaap-Deeder, Norwegian University of Science and Technology (NTNU), Norway; Bart Soenens, Ghent University, Belgium; Maarten Vansteenkiste, Ghent University, Belgium

#### **Abstract**

Prisoner's psychological and physical freedom are severely restricted which hinders their well-being. Structural inequities and traumatic experiences may exacerbate these impacts for women deprived from liberty. However, a crucial concern is how to maintain the welfare of prisoners in spite of these restrictive circumstances. This research, which was based on Self-Determination Theory, looked at the role of two pathways for well-being. The first one represents the degree to which inmates perceived the social context as both need-supportive and need-thwarting and the second, names need-crafting, which represents a proactive process by which people create (or negotiate) opportunities for autonomy, competence, and relatedness. The sample was composed by 300 women with a mean age of 33.48 years-old (SD = 11.04) from a Women's Penitentiary in Lima (Peru). Using structural equation modeling, results indicate that need-supportive contexts and need-crafting are distinct sources of need satisfaction and wellbeing. Additionally, need-crafting served to mitigate the effect on need frustration while need-thwarting context predicted need frustration and illbeing. These results are encouraging because they show that women can use thoughtful and proactive strategies to maintain psychological wellbeing even in extremely constrained settings. This study is the first to give evidence of need-crafting in women's prisons and provides new cross-cultural evidence for resilience and agency in need-thwarting contexts.

## Symposium 20: Peer Relationships and Motivation: Longitudinal and Cross-Cultural Perspectives

**Organizer:** Alla Hemi, University of Haifa, Israel; Martin Daumiller, Institute of Psychology, Germany

**Chair:** Alla Hemi, University of Haifa, Israel; Martin Daumiller, Institute of Psychology, Germany

**Discussant:** Ronnel Bornasal King, The Chinese University of Hong Kong, Hong Kong

### Abstract

The goal of this symposium is to unite research investigating the interplay between peer relationships and student motivation across diverse developmental and cultural contexts. Peer relationships are a central component of students' social environment, becoming increasingly influential during adolescence as students seek autonomy from adults and look to peers for cues on engagement and effort (Kindermann, 2016). Understanding these social-motivational processes is beneficial for creating optimal learning environments, yet questions remain about their directionality and cultural specificity (Daumiller & Hemi, 2025). This symposium addresses these gaps by examining how peer dynamics and contexts, ranging from classrooms to cliques and co-curricular groups, are related to student motivation. The symposium comprises four complementary papers that combine perspectives from different theoretical frameworks, methodological approaches, and international samples. Paper 1 employs latent change score modelling to examine how German students' perceived peer motivation and individual effort co-develop across a school year, revealing increasing interdependence over time. Paper 2 utilizes three-level structural equation modelling to test whether cliques in German classrooms function as reference groups for academic emotions, highlighting both positive and negative social comparison effects. Paper 3 investigates how peer acceptance in co-curricular activities in Singapore predicts academic and non-academic outcomes through mastery goal adoption in a longitudinal design. Finally, Paper 4 applies novel causal discovery methods to cross-sectional data from two cultural contexts, China and the United States, demonstrating that the directionality of the link between peer relationships and motivation may be culturally contingent.

### ***Peers as Motivators and Effort in German Language Instruction: Development Dynamics in a School Year***

**Presenting Author:** Diana Raufelder, University Greifswald, Germany

**Co-author(s):** Sabine Schweder, University Greifswald, Germany; Lia Grahl, University Greifswald, Germany

### Abstract

Peers play a crucial role in shaping students' motivation and engagement during adolescence. This study examined how students' perceptions of peers as motivators and their individual effort in German language instruction develop across one school year and how these processes are interrelated. A sample of 587 students in Grades 7 and 8 (MAge = 13.32 years; 51.3% female) from nine urban grammar schools in Germany participated in three assessments: at the beginning, in the middle and at the end of the school year. Using latent change score modeling, we investigated both univariate baseline models capturing overall developmental trends and bivariate Latent Change Score models with contemporaneous coupling paths. Results revealed high initial levels of both peer motivation and effort, followed by stability until mid-year and divergent trajectories toward the end of the year. While effort declined, peer-related motivation increased and became positively associated with effort changes in the second half of the school year. These findings highlight the growing importance of peers as motivational resources that may help sustain students' engagement. The study underscores the need to integrate social-motivational perspectives into

classroom practice, emphasizing cooperative learning and supportive peer relations as potentially important mechanisms for maintaining motivation throughout the school year.

### ***Does the Clique Make a Happy Fish? Extending the Happy-Fish-Little-Pond Effect***

**Presenting Author:** Marion Reindl, University of Salzburg, Austria

**Co-author(s):** Tanja Auer, University of Salzburg, Austria

#### **Abstract**

The Happy Fish-Little Pond Effect (HFLPE) combines assumptions about social comparison processes with the development of academic emotions. Based on the control-value theory, academic emotions are shaped by the social environment, specifically by social comparisons with reference groups. In this regard, less attention was paid to cliques, even though this group becomes more important during adolescence. The present study examined the extent to which students' social comparison with the academic achievement of clique members in mathematics shapes the individual development of intrinsic value and emotional cost in mathematics beyond class comparisons. Longitudinal data from 743 German secondary school students in grades sixth and eighth (93 cliques in 40 classes) were analyzed using a three-level structural equation model. The results showed that higher average clique achievement predicted a decline in intrinsic value and an increase in emotional cost. The results highlight the importance of self-selected peer groups within the class in explaining the development of emotional values within the framework of the HFLPE.

### ***Groups, Goals, Growth: How Peer Acceptance Shapes Student Development in Co-Curricular Activities***

**Presenting Author:** Jennifer Fredricks, Union College, United States

**Co-author(s):** Gregory Arief D Liem, National Institute of Education, Singapore

#### **Abstract**

Compared to the more well-established influence of classmates on students' academic development, far less research has examined how peers shape students' motivation and developmental outcomes in school-organized Co-Curricular Activities (CCAs). This study investigated whether perceived acceptance from CCA peers early in the school year (T1) predicts changes in students' CCA-related academic and non-academic outcomes by the end of the school year (T2), with mastery and performance goals at T1 and T2 serving as the motivational link. Participants were 517 Primary-3 to Primary-6 students in Singapore (50.7% female; Mage = 10.58, SDage = 1.08) drawn from diverse CCA groups, including Physical Sports (34%), Visual and Performing Arts (31%), Clubs and Societies (24.2%), and Uniformed Groups (10.8%). Students completed the same survey twice within the school year, with a 24–26 week interval between assessments. Results showed that early peer acceptance was significantly associated with positive change in both academic and non-academic outcomes later in the year, primarily through mastery goals. Mastery goals were consistently linked to gains in school belonging, educational aspirations, classroom engagement, lifelong learning, teamwork disposition, and leadership skills. Performance goals, in contrast, were associated with gains in leadership but modest declines in teamwork and lifelong learning. Together, these findings highlight peer acceptance in CCAs as a meaningful social resource that supports children's development through mastery-oriented motivation, offering implications for theory on peer relationships in achievement settings and for practice aimed at maximizing the developmental benefits of school-based CCA participation.

### ***Exploring the Directionality of Peer Context and Motivation: A Novel, Cross-cultural Approach***

**Presenting Author:** Norman Mendoza, The Education University of Hong Kong, Hong Kong

#### **Abstract**

Recent research highlights the bidirectional yet underexplored relationship between peer relationships and student motivation. While Self-Determination Theory posits that supportive peer contexts enhance motivation through relatedness satisfaction, selection or homophily processes suggest motivated students may shape their peer environments. We employ the independence asymmetry methods to test causal directionality between peer support (cooperation, belonging) and mastery goals using PISA 2018 data from the United States ( $n=4,838$ ) and China ( $n=12,058$ ). This cross-cultural comparison examines whether the peer context-motivation directionality, should it exist, differs between individualistic and collectivistic educational systems. Following a novel two-step algorithm, we tested independence between variables and conditioned residuals using distance correlation. Results show distinct cross-cultural differences. In China, peer cooperation and belonging drove mastery goals ( $dCor=.08$  vs.  $.19$ ;  $dCor=.06$  vs.  $.21$ ), supporting environmental determination. In the United States, mastery goals shaped peer support ( $dCor=.17$  vs.  $.09$ ;  $dCor=.18$  vs.  $.07$ ), supporting individual agency. Bootstrap confidence intervals confirmed these patterns, meeting conservative reliability criteria ( $\min dCor \leq 0.10$ ). Findings demonstrate that peer-motivation mechanisms are culturally contingent: collectivistic contexts show environment $\rightarrow$ motivation while individualistic contexts show motivation $\rightarrow$ environment. This suggests culture-specific intervention strategies and extends our understanding of achievement composition effects in educational settings. The study provides the first application of causal discovery methods to test directional assumptions in peer-motivation research, addressing key gaps in understanding the reciprocal nature of these relationships. Future research should employ longitudinal and experimental designs to confirm these cross-sectional findings and establish within-person causal dynamics, to supplement the current approach.

## **Symposium 21: Understanding the Emotional Realities of Teaching Across Countries, Contexts, and Career Stages**

**Organizer:** Anne Frenzel, Ludwig-Maximilians-Universität München, Germany

**Chair:** Anne Frenzel, Ludwig-Maximilians-Universität München, Germany

**Discussant:** Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

#### **Abstract**

This symposium features scholars from Germany, Switzerland, Australia, and the United States and includes a distinguished discussant on teacher emotional well-being. It examines the structure, antecedents, and consequences of teachers' emotions across career stages, contexts, and cultures, integrating four empirical studies to advance theoretical and methodological approaches to teacher emotion research. The contributions explore how discrete emotions and emotion components map across diverse cultures (Paper 1), how motivations and beliefs relate to pre-service emotional experiences (Paper 2), how out-of-field secondary mathematics teachers' emotional ecologies shape work outcomes (Paper 3), and how emotion dynamics unfold during simulated collaborative professional learning (Paper 4). Findings reveal (a) consistent emotion-specific, largely culturally universal links between emotion components (feelings, appraisals, expressions, bodily symptoms, action tendencies) and discrete emotions, with culturally specific nuances; (b) the primacy of motivational orientations

(intrinsic, social-utility versus personal utility/opportunity) over qualitatively assessed beliefs about teaching in predicting enjoyment and anger among preservice teachers; (c) heterogeneity among out-of-field mathematics teachers—distinct positive and low-mixed emotional profiles that align with teachers’ reports of their students’ engagement, work dedication, turnover intentions and confidence; and (d) the role of appraisals of learning contexts in shaping emotional experiences during professional development co-planning scenarios with a human-in-the-loop science avatar teacher. Collectively, the studies bear important implications for culturally sensitive assessment of teacher emotions, targeted support for out-of-field, and pre-service teachers, and the design of emotionally supportive simulation-based teacher professional development.

### ***How does it feel to feel? Exploring emotion components in Canadian, German & Taiwanese Teachers***

**Presenting Author:** Anne Frenzel, Ludwig-Maximilians-Universität München, Germany

**Co-author(s):** Lia Daniels, University of Alberta, Canada; Yu-Jui Cheng, Ludwig-Maximilians-Universität (LMU), Germany

#### **Abstract**

Rooted in a multi-componential conceptualization of emotions, self-report instruments of teacher emotions often combine emotion labels with their components. However, the empirical relationship between habitually experienced emotion components and discrete trait emotional experience during teaching has not been systematically investigated, particularly across cultures. The present study systematically explored how habitual emotion components (subjective feelings, bodily symptoms, expressions, appraisals, and behavioral tendencies) relate to teaching joy, pride, anxiety, anger, and shame across diverse cultural contexts. We collected data from N = 218/246/206 teachers in Canada, Germany, and Taiwan, using an online survey that assessed the frequency and intensity of emotion components and discrete emotions during teaching. Correlational analyses revealed that the linkages between emotion components and discrete emotions were largely universal across cultures. Teachers who reported more joy and pride showed more frequent smiling, greater closeness with students, and appraised situations as more controllable. Angrier teachers experienced more adverse physical symptoms and felt less control. Anxiety and shame were associated with a range of bodily symptoms and expressions, such as voice trembling, and a greater urge to withdraw from students. However, cultural differences were also observed. For example, in Taiwan, joy and pride were linked with warmth, while in Germany, warmth correlated with anger, anxiety, and shame. This research highlights the high degree of cross-cultural similarity in emotion-component linkages, but also the need to consider cultural nuances when researching emotional experiences in teaching.

### ***Preservice teachers’ emotions, teaching motivations, and beliefs: A multi-method study***

**Presenting Author:** Catherine Audrin, University of Teacher Education Lausanne, Switzerland

**Co-author(s):** Marine Hascoët, Lausanne University of Teacher Education, Switzerland

#### **Abstract**

This study examined how pre-service teachers’ motivations, beliefs about being a teacher, and emotional experiences interact during early professional training. Using the FIT-Choice model as a framework, we examined four motivational dimensions (intrinsic, personal utility, social utility, and opportunity) alongside teachers’ emotional experiences during teaching. We also analyzed responses to an open-ended question (‘For me, being a teacher is...’) to capture their beliefs about the profession. Text-mining applied to these open-ended responses identified three belief profiles: a focus on pupil development, a focus on value transmission, and a view of teaching as a stable career. These belief clusters did not significantly differ in their motivations or emotions. Path analyses,

however, showed that intrinsic and social-utility motivations positively predicted enjoyment and negatively predicted anger, whereas personal utility and opportunity values were positively associated with anger. Surprisingly, anxiety was not significantly related to any of the measured motivations. Overall, motivations—not beliefs—were linked to emotional experiences, highlighting the need for further longitudinal research.

### ***Mapping the ecology of ‘out-of-field’ mathematics teachers’ emotions: Antecedents and consequences***

**Presenting Author:** Kathryn Holmes, Western Sydney University, Australia

**Co-author(s):** Nathan Berger, Western Sydney University, Australia; Paul Richardson, Monash University, Australia; Helen Watt, The University of Sydney, Australia

#### **Abstract**

Mathematics teacher shortages have resulted in the ongoing need for out-of-field (OOF) teachers to meet workforce demands. These teachers, with qualifications in other subjects, face additional challenges when teaching mathematics compared to their in-field colleagues. Little is known about the emotional experience of OOF mathematics teaching, as well as its antecedents and consequences for both students and teachers. In this study of Australian OOF mathematics teachers, we use Pekrun’s (1992) dimensions of achievement emotions to map the ecology of teachers’ positive and negative emotions. Hierarchical cluster analysis of teacher emotions identified two latent groups: ‘positive’, and ‘low-mixed’. They differed in their reasons for becoming OOF teachers and the support they perceived from school leadership. Differences were evident in their reports of their students’ engagement in junior secondary mathematics, and their own work dedication, turnover intentions, and confidence. The study provides further evidence of the heterogeneous nature of OOF teachers and the need for school leaders to consider support structures that take these differences into account.

### ***Teachers’ emotional experiences learning to co-plan in a mixed-reality simulation***

**Presenting Author:** Courtney Bell, University of Wisconsin, United States

**Co-author(s):** Jon Nordmeyer, University of Wisconsin-Madison, United States; Mariana Castro, University of Wisconsin-Madison, United States

#### **Abstract**

Teacher learning is critical to skilled teaching that addresses students’ needs and supports the academic and social development of all learners. Yet teacher learning in professional development contexts is frequently ineffective (c.f., Garet et al., 2016) and when practiced in real-world contexts (e.g., student teaching placements, teachers’ own classrooms and schools), can be harmful to others and mis-educative for the teacher when unavoidable mistakes are made. Human-in-the-loop simulations have been shown to support teachers’ learning of instructional practices such as classroom management and scientific argumentation (Cohen et al., 2020; Mikeska, 2022). This exploratory mixed-methods study investigates teachers’ emotions before, during, and after simulations of interdisciplinary co-planning. Thirty English Language Teachers (ELT) completed three co-planning scenarios with a human-in-the-loop 6th grade science avatar teacher. Each scenario required the ELT to work with the 6th grade science teacher avatar to evaluate and plan how to address the language demands in a whole-class science activity. Teachers were given feedback after each co-planning session, reflected on the feedback and performance, and made a brief plan about what to work on during the next co-planning session. Findings suggest that negative emotions (e.g., anger, exhaustion) were associated with negative appraisals of the simulation learning environment and lower scores in the co-planning scenarios, while positive emotions (e.g., joy, pride, love) were associated with more positive

appraisals and scores. This study contributes to an emerging literature that suggests simulation may be a context that can provide scalable, effective, emotionally supportive teacher learning opportunities.

## Symposium 22: Promoting Teacher Wellbeing: Interventions and Practices Before and After Career Entry

**Organizer:** Verena Jörg, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Chair:** Manuela Haldimann, University of Bern, Switzerland

**Discussant:** Hui Wang, The Education University of Hong Kong, Hong Kong

### Abstract

Entering the teaching profession is described as a period of heightened strain and reduced wellbeing across education systems. Thus, understanding how to support teacher wellbeing, particularly in early career years, remains a key challenge. This symposium combines three complementary studies examining practices and interventions aimed at enhancing preservice and early career teachers' wellbeing. The first contribution, framed by the AWaRE model, investigates the effects of a digital resilience intervention implemented during initial teacher education. Although no clear effects of the intervention were identified, results highlight the potential impact of contextual conditions, such as teaching practicums. The second contribution takes a qualitative approach based on Job Demands–Resources theory to examine how professional learning influences the early stages of a teaching career. Findings suggest that, when practice-oriented and contextually relevant, professional learning can serve as a resource for teacher well-being, strengthening professional competence and mitigating job demands. However, it may also act as a demand when poorly aligned with teachers' needs. Building on positive psychology and self-determination theory, the third contribution examines effects of a gratitude intervention on teachers' need satisfaction and wellbeing. Results indicate increases in gratitude in the intervention group, with slightly larger effects for early career teachers. While highly related, these changes did not predict changes in need satisfaction and wellbeing within the observed period. Overall, the symposium aspires to refine our understanding of how practices and interventions should be designed and embedded to support teacher wellbeing effectively, particularly during initial teacher education and early career stages.

### *Promoting Pre-Service Teacher Wellbeing Through Resilience: A Digital Intervention*

**Presenting Author:** Manuela Haldimann, University of Bern, Switzerland

**Co-author(s):** Melanie G. Nuoffer, University of Bern, Institute of Educational Science, Switzerland; Anna Pavlova, University of Bern, Switzerland; Irene Guidon, PHBern / University of Bern, Switzerland; Isabelle Krummenacher, PH Bern - School of Teacher Education, Switzerland; Julia Mori, University of Bern, Switzerland; Tina Hascher, University of Bern, Institute of Educational Science, Switzerland

### Abstract

Initial teacher education (ITE) represents a pivotal phase in the professional development of future teachers. Supporting their wellbeing in this stage is crucial—not only to facilitate learning during ITE, but also to strengthen wellbeing before entering a demanding profession. Framed by the AWaRE model (Hascher et al., 2021), which conceptualizes wellbeing as both the starting point and the outcome of adaptive resilience processes, this study investigates whether participation in FoResT, a digital learning platform for pre-service teachers, can foster their wellbeing during ITE. FoResT combines interactive and reflective modules designed to promote resilience-related

learning processes and strengthen wellbeing. A quasi-experimental waitlist control group design with three measurement points (pretest, posttest, and 10-week follow-up) was implemented. Data collected in the autumn semester 2024 at a Swiss university of teacher education were analyzed using linear mixed-effects models to test group  $\times$  time interaction effects across five wellbeing dimensions. Contrary to expectations, analyses of the experimental group ( $n = 88$ ) and the waitlist control group ( $n = 90$ ) revealed no significant group-by-time interaction. Across groups, “Enjoyment of ITE” increased from posttest to follow-up ( $p < .01$ ). In the waitlist control group the wellbeing dimension “Positive academic self-concept” improved from pretest to follow-up ( $p < .01$ ), and “Worries about ITE” decreased from posttest to follow-up ( $p < .01$ ). Overall, the patterns suggest that changes may be linked to external factors such as teaching practicums occurring during this period. The findings are discussed in relation to future intervention studies aimed at promoting pre-service teacher wellbeing.

### ***Thriving or Surviving? The Paradox of Professional Learning in the Early Career Teaching Phase***

**Presenting Author:** Helena Granziera, UNSW Australia, Australia

**Co-author(s):** Hoa Nguyen, UNSW, Australia; Dennis Alonzo, UNSW, Australia

#### **Abstract**

The early years of teaching constitute a critical phase in which professional identity, instructional competence, and long-term career trajectories are formed. Yet many early career teachers (ECTs) enter the profession insufficiently prepared for the complex demands of contemporary schooling and with limited access to targeted support. Identifying the factors that enable ECTs to navigate this formative period is essential for supporting their long-term wellbeing and for fostering broader school functioning. Although professional learning (PL) is widely promoted as a mechanism for enhancing teachers’ motivation, adaptability, and growth, its capacity to function as a genuine resource within the demanding early career context remains insufficiently examined. Guided by Job Demands–Resources (JD-R) theory, this qualitative study explored how professional learning shapes ECTs’ wellbeing-related experiences. Analysis of interview data revealed that professional learning assumes a paradoxical role in ECTs’ work. When aligned with ECTs’ contextual needs and grounded in practical application, professional learning operates as a salient job resource that strengthens capability and buffers demands. However, when PL is poorly aligned, overly generic, or contributes to workload intensification, it functions as a job demand, heightening time pressure and emotional exhaustion. These findings highlight the dualistic nature of professional learning in the early career phase and underscore the critical importance of its design, relevance, and delivery. The study demonstrates the need for differentiated contextually responsive professional learning that acknowledges ECTs’ distinct developmental needs. Strengthening these conditions is essential for supporting ECT wellbeing, fostering sustained professional growth, and promoting long-term retention within the teaching workforce.

### ***Teachers' Work-Related Gratitude, Need Satisfaction and Wellbeing: An Intervention Study***

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#### **Abstract**

As teacher wellbeing highly impacts the success of school systems, supporting teachers in building personal resources that foster their wellbeing is key, particularly in early career years. Meanwhile, teachers’ time is limited, making time-efficient interventions important. Addressing this issue, our study examines the effects of Positive Psychology’s brief gratitude interventions in a sample of pre- and in-service teachers. Additionally, we explore potential underlying mechanisms building on Self-Determination Theory’s Basic Psychological Need Satisfaction

theory. In a preregistered randomized waitlist control design with three measurement points, we examined whether teachers' gratitude predicts their wellbeing, and whether the satisfaction of their needs for autonomy, competence, and relatedness mediates this link. Secondly, we examine whether a two-week daily "Three-Good-Things" exercises and a one-time gratitude letter can enhance teachers' occupational wellbeing. Data was analysed using mediation analysis with bootstrapping and linear mixed models (feasibility study  $N = 59$ , main study  $N_{\text{planned}} = 250$ ). Preliminary results indicate that higher gratitude is linked to higher need satisfaction and wellbeing with significant cross-sectional mediation effects for job satisfaction. The  $\text{time} \times \text{group}$  interaction was marginal at post-test but significant from baseline to follow-up, indicating a stronger increase in work-related gratitude in the intervention group and slightly larger effects for early career teachers. However, the change in gratitude did not predict a change in wellbeing during the observed period. While results of our main study remain pending, first analyses suggest gratitude interventions could be a meaningful and scalable resource to support teacher wellbeing, especially in early career stages.

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