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Table of Contents

PAPER SESSIONS	3
POSTER SESSIONS	100
SYMPOSIA	145

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PAPER SESSIONS

A

Presenting Author, Co-Authors	Title of Presentation	Abstract
Byunghoon (Tony) AHN & Jason HARLEY Co-Authors: Myriam Johnson Negar Matin Annika Delport Byul Han So Yeon Lee Ning-Zi Sun	Emotional profiles of doctors during intervening harassment in a clinical simulation	Harassment has been a persistent issue in medical education. This study examines the emotional profiles of medical resident trainees when participating in a harassment bystander intervention training that features a clinical procedure. We formed emotional profiles via hierarchical clustering, where we input the residents' self-reported positive emotions, negative emotions, and their phasic and tonic electrodermal activity. We chose a three-cluster solution based on indices and the dendrogram. We further extended our analysis with content analysis based on learners' debriefing discussion with the simulation facilitator post-simulation. Our findings revealed that there were three even clusters: 1) "Emotionally Balanced, Minimal Arousal"—those who were generally calm despite reporting anxiety; 2) "Positive, Spiked Arousal"—those who indicated a high degree of enjoyment during the simulation but indicated uncertainty on what to do; and 3) "Negative, High Arousal"—those who tended to find the harassment a nuisance. We further found that all but 1 participant of the 9 participants in Cluster 1 engaged in direct confrontation with the harasser. The opposite was true for Cluster 2, where all but 1 participant of 9 did not directly confront the harasser. Our post-hoc test confirmed the statistical significance of our finding. We concluded that calm and collected residents tended to directly confront the harasser, especially compared to those who enjoyed the simulation but indicated uncertainty towards how to intervene. Future studies can investigate the potential roles of emotion regulation strategies in simulation performance, especially in an emotionally charged scenario such as a harassment bystander situation.
Aline ALVES-WOLD Co-Authors: Bente Walgermo Erin McTigue	The ABCs of writing motivation: A systematic review of motivation factors influencing K–5 students	Motivation is an essential ingredient for writing success. However, investigations of writing motivation in younger students often overlook the students' voices, basing instead—insufficiently—findings solely on teachers' and/or researchers' observations. The present systematic literature review highlights the importance of also

Per Henning Uppstad		listening to students' own perspectives. It synthesizes findings from empirical studies (1996–2020) in K–5 classrooms. Of 5795 studies initially identified, 56 met the inclusion criteria and were qualitatively analyzed. The analysis yielded nine factors that influence writing motivation. They are presented as the ABCs of Writing Motivation, organized according to the first nine letters of the alphabet: (A) Appeal, (B) Beliefs, (C) Choice, (D) Difficulty, (E) Environment, (F) Feedback, (G) Goals, (H) Help, and (I) Instructor. We suggest that this organization as a mnemonic device can be a useful tool for both researchers and teachers, and can serve as a checklist or source of ideas when planning writing lessons or interventions.
Eric ANDERMAN Co-Authors: Andrew Perry Hyun Ji Lee Ron Astor	The relations between schoolwide mastery/performance goal structures and teacher-directed violence	In this study, we examined the relationships between perceived school goal structures (mastery and performance) and violence perpetrated against teachers. We hypothesized that perceptions of a schoolwide emphasis on mastery would be related to lower levels of teacher-directed violence; we also hypothesized that perceptions of a schoolwide emphasis on performance would be related to greater teacher-directed violence. We examined these relationships before and during the first year of the COVID-19 pandemic in a sample of 9,363 U.S. teachers. After controlling for known predictors of teacher-directed violence, we found that perceptions of a performance goal structure were related to higher levels of teacher-directed violence perpetrated by students, parents, colleagues, and administrators. Perceptions of a mastery goal structure were related to lower levels of teacher-directed violence perpetrated by parents, colleagues, and administrators prior to the pandemic, and to lower levels of violence perpetrated by colleagues and administrators during the first year of the pandemic.
Ophélie ANDREYON Co-Authors: Nadia Leroy Pascal Bressoux	An expectancy-value approach to the resignation process of French teachers	Over the past decade, there has been a significant increase in teacher resignation from the French education system. Understanding what contributes to these resignations is a topical issue about the quality of teaching. Job satisfaction is a key factor, and often precedes intentions to quit. Expectancy-value theory enables us to examine how self-efficacy and value dimensions predict job satisfaction and intentions to quit, a measure of teacher disengagement. With the support of expectancy-value theory, this study aims to understand the teacher resignation process. We hypothesize that self-efficacy and value's dimensions are linked to job satisfaction, which, in turn, reduces intentions to quit. A questionnaire was distributed to French primary and secondary schools, resulting in 214 responses. Results from the structural equation model indicate that job satisfaction significantly affects intentions to quit, while self-efficacy and intrinsic value also play roles in job satisfaction. Contrary to expectations, other value dimensions (attainment value, utility value and cost) do not contribute to explain job satisfaction. Increasing teachers'

		self-efficacy and intrinsic value help to reduce intentions to quit through job satisfaction. Motivation is a major factor in keeping teachers in the profession.
<p>Anastasia ASIEDU Co-Authors: Doris Holzberger Tina Seidel</p>	<p>Promoting emotional intelligence among university students: A meta-analysis</p>	<p>Numerous studies highlight the positive impact of emotional intelligence (EI) on stress coping, academic and professional performance, and well-being. Nevertheless, meta-analytic research on EI training in university students, a group prone to stress, remains limited. This study aims to fill this gap by conducting a meta-analysis on the effects of EI training for university students, and explore potential moderators, such as the training content. The methods will include a random-effects model, and employing robust variance estimation for multiple dependent effect sizes. After the systematic search through educational databases and running the studies through inclusion/exclusion criteria, we identified 50 studies for our meta-analysis. We plan to finish statistical analysis by the end of spring and present the results in August. Preliminary results show a moderate effect of the trainings on emotional intelligence of the students. This study addresses gaps in existing literature and provides insights for educators, researchers, and practitioners.</p>
<p>Catherine AUDRIN Co-Author: Marine Hascoët</p>	<p>How emotions are related to determinants of career choice among teachers: A FIT perspective</p>	<p>Statistics have shown that teachers tended to quit their profession (Ingersoll, 2001; Stokking et al., 2003), especially during the first years of professional experience. In this project, we are interested in investigating what makes people want to become a teacher. Using a FIT perspective, we asked pre-service teachers to complete a self-reported questionnaire investigating students' motivation to become a teacher as well as the emotions they felt when they were teaching. Partial correlations reveal that motivations are related to each others: opportunity is negatively related with intrinsic value and social motivations, whereas intrinsic value is positively related with social but not with personal motivations. Moreover, joy is positively related with intrinsic value and social motivation, whereas anger and anxiety are negatively related with these motivations. In addition, anger and anxiety are positively related with personal motivation and opportunity. Finally, linear regression analyses suggest that social motivation and intrinsic value positively predict joy, whereas negative emotions (anger and anxiety) were positively predicted by opportunity but negatively by intrinsic value.</p>
<p>Sayed AZHER Co-Authors: Keerat Grewal Negar Matin Amanda Cervantes Caroline Marchionni Hugo Marchand</p>	<p>Emotional arousal in virtual simulation amid challenging events: A mixed-methods approach</p>	<p>Virtual simulations (VSs) are integral tools in nursing education, offering a safe and immersive learning environment for students to develop healthcare knowledge and clinical competency. Understanding and addressing challenging events (e.g., software-related bugs) encountered within VSs is needed to optimize and improve their efficacy. This study builds on qualitative work examining challenging events encountered by nursing students within a VS. In the present study, we employed psychophysiological data in the form of electrodermal activity (EDA) to gauge participants' emotional arousal responses to these challenges. To do so, we drew upon</p>

Jason Harley		<p>the theoretical underpinning of Control-Value theory to guide interpretation of EDA as a reflection of emotional arousal. By integrating EDA measurements with qualitative observations, we sought to identify if challenging events significantly emotionally aroused students and if specific types of challenges were more critical than others. 20 third-year nursing students completed a VS, providing audio-video recordings and EDA data for analysis. We found that there was a significant increase in participants' post-challenging event EDA, emphasizing the emotional impact of challenging events. However, when examining qualitatively coded categories of events, no specific challenge type showed significant elevation in emotional arousal. Our findings suggest that VS developers need to focus on minimizing overall VS-related challenges rather than targeting specific challenge types. For educators, selecting optimized VS software is advised. This study offers critical insights into the emotional needs of nursing students using VSs, aiming to optimize efficacy and ease-of-use. Importantly, it underscores the importance of emotional responses in shaping the learning experience.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Hassan BANARUEE Co-Authors: Sonja Bieg	Causal effects of teacher humor on perceived quality of instruction and achievement emotions	<p>There is a significant shortcoming in contemporary research on the causal relationship between teacher humor, perceived instructional quality and students' emotions. We fill this gap by conducting two experiments using parallelized and videotaped lessons. Our assumptions are grounded on the Instructional Humor Processing Theory and the Control-Value Theory of Achievement Emotions. In Experiment 1, we examined experts' (203 geography teachers) perceptions of Cognitive activation, Clarity, Interestingness, Teacher-student relationship, and Time on task associated with varying teacher humor types. Participants were randomly assigned into four (course-related, course-irrelevant, aggressive, and self-disparaging) humor experimental conditions and one control condition. Participants in Experiment 2 were 293 10th-grade students from German high schools. They rated instructional quality (same as Experiment 1), their achievement emotions (boredom, enjoyment, anger, anxiety) and motivation. In both studies, the participants watched a videotaped lesson on individual computers and answered questionnaires online. A MANOVA (with the experimental condition as a between-subject factor and perceptions of the different types of teacher humor as dependent variables) served as a manipulation check, which revealed strong effects in both studies. Further results indicated more perceived Clarity, Interestingness, Time on task, and better Teacher-student relationship for course-related condition than other humor conditions in both experiments. Students within the course-related humor condition reported more enjoyment and motivation but less boredom, anger, and anxiety than other teacher humor conditions. In contrast, aggressive teacher humor disoriented and disturbed them. Our findings reinforce the positive causal effects of course-related teacher humor on basic dimensions of instructional quality and students' emotions.</p>
Lisa BARDACH Co-Authors: Kou Murayama	The role of rewards in motivation – Beyond dichotomies	<p>A vast amount of research has examined how extrinsic rewards influence motivation in learning. Whereas some studies have indicated that rewards are beneficial for increasing students' motivation, others have argued that rewards undermine motivation, especially so-called intrinsic motivation. In this presentation, building on the reward-learning framework of knowledge acquisition, we argue that the two perspectives do not actually contradict each other and that researchers should look</p>

		beyond the simple dichotomy of whether rewards are good or bad for motivation. The reward-learning framework of knowledge acquisition conceptualizes rewards as either extrinsic incentives (i.e., extrinsic rewards) or internal positive feelings that arise from the learning process or from knowledge acquisition itself (i.e., intrinsic rewards). Importantly, the framework suggests the possibility of motivation transformations in that extrinsic rewards can serve as an “entry point” for engagement, thus helping students start up the positive feedback loop of internally rewarding learning processes. However, once such a positive feedback loop has been established, extrinsic incentives could interrupt the process, potentially undermining long-term engagement. We call for personalized reward provision systems that consider the roles that different types of rewards play in different tasks and for different students in different moments of the knowledge acquisition process.
Jan BECK Co-Authors: Lisette Hornstra Barbara Flunger	Moderators of student-teacher agreement about student motivation	To be able to address motivational problems among individual students, teachers need to know whether a student feels unmotivated or not. However, teachers and students typically show very little agreement concerning a student's motivation. The present study examines which moderator variables may explain their (dis-)agreement. Therefore, N = 5,514 secondary school students in k = 402 classes and their n = 212 teachers both judged student motivation. Moderators were students' gender, migration background, and age; teachers' gender, migration background, and teaching experience; students' and teachers' acquaintance (length & intensity). Linear mixed effects models revealed that students and teachers on average had weak agreement ($\beta = .26, p < .001$). Students' gender or age, teachers' gender or teaching experience as well as students' and teachers' acquaintance in terms of length and intensity did not moderate their agreement about student motivation. Yet, teachers possessing a migration background agreed more with their students about student motivation. Moreover, teachers underestimated motivation of boys and students with a migration background. The more experienced teachers were the higher they judged student motivation. The few significant moderators of student-teacher agreement concerning student motivation illustrate the need to further theorize and examine the mechanisms that lead to enhanced (or reduced) alignment between students and teachers. This will provide more insights into how teachers can better evaluate their students' motivation and provide targeted interventions for students suffering from low motivation.
Max BLAISE Co-Authors: Ann Krispenz Alex Bertrams	My precious: Measuring the motivation to conserve human energy	Efficient use of one's personal energy resources is crucial for mental health and well-being, particularly in demanding environments like academic settings and the workplace. Yet, a reliable and valid measure for assessing individuals' motivation to conserve energy is currently lacking. To fill this gap, we introduce a concise five-item scale, the Conservation of Human Energy Resources Index (CHERI),

		available in both German (CHERI-G) and English (CHERI-E) versions. In four comprehensive studies (N = 1,814), we thoroughly evaluated the structure and psychometric properties of both language versions. Our results reveal that the CHERI measures a one-dimensional, homogeneous construct characterized by a high internal consistency (Studies 1, 2, and 4). Our findings also emphasize the CHERI's sensitivity to change (Study 3) and its meaningful associations with measures from the nomological network of motivation, energy, and effort (Studies 2 and 4). Additionally, we demonstrate the cross-cultural equivalence of the CHERI-G and CHERI-E as well as their equivalence across situational contexts, encompassing both workplace and academic settings (Study 4). Taken together, the present research provides compelling evidence for the psychometric soundness of the CHERI, which can be used to enhance our understanding of energy conservation behaviors and effort mobilization.
Jonne BLOEM Co-Authors: Lisette Hornstra Kim Stroet	(De)motivating teaching for students from diverse backgrounds and the role of teachers' expectations	According to Self-Determination Theory (SDT) all students, regardless of their (cultural) background, benefit from motivating teaching practices. Yet, previous research suggests that teachers vary in the extent to which they provide (de)motivating teaching toward particular students, like students from different socioeconomic and ethnic backgrounds. This may be due to differences in teachers' expectations for these students. Therefore, in this study we examine the extent to which teachers have different expectations for students from diverse ethnic and socioeconomic backgrounds, and whether this relates to differences in (de)motivating teaching practices. Thereto, we collected data from 68 teachers and their 1176 students. Preliminary results based on pilot data (N = 92 teachers and their 247 students) show that teachers have lower expectations for students from lower SES than for students from higher SES, but not based on migration background. Additionally, lower expectations were related to fewer motivating strategies and more demotivating strategies. For most (de)motivating strategies there were no direct relationships with student background. These findings demonstrate how teachers' expectations play a role in their behavior, providing insights into how well-intentioned actions can either enhance or undermine students' motivation and performance. The first results based on the complete data set will be presented during the ICM 2024.
Arne BOUTEN Co-Authors: Sergio Diloy-Peña Leen Haerens Luis García-González Ángel Abós	Detrimental effects of abandoning teaching style on students' basic psychological needs	Self-Determination Theory (SDT) has primarily focused on the negative impact of a controlling teaching style, in particular domineering behavior, on students' basic psychological needs. However, recent studies using the circumplex model of (de)motivating teaching styles suggest that a chaotic teaching style, in particular abandoning behavior, may be even more need-thwarting. This study investigates the relationships between eight (de)motivating teaching dimensions and students' basic psychological needs, with a particular emphasis on contrasting abandoning

Katrien De Cocker		<p>(chaotic) with domineering (controlling) teaching. A cross-sectional survey was conducted with 916 PE students from 79 classes in Belgium and 1124 students from 65 classes in Spain. Students completed the Situation in School Questionnaire, PE version (SIS-PE) and the Basic Psychological Needs Scale (BPNS). Preliminary partial correlations showed the abandoning subarea had the most negative relationships with students' needs. In particular, the abandoning subarea had a stronger positive association with need frustration compared to the domineering subarea in Spain (.20 vs. .11; $p = .040$) and in Belgium (.18 vs. .04; $p = .002$), as well as a stronger negative association with need satisfaction in Spain (-.18 vs. -.04; $p = .002$). These findings suggest that abandoning teaching may be more need-thwarting than domineering teaching. Teacher training programs should educate teachers on avoiding abandoning behaviors. Future research should investigate the antecedents, consequences, and potential moderators of abandoning teaching. During the conference, the results of a multilevel SEM accounting for the nested data structure will also be presented.</p>
<p>Christian BRANDMO & Gunnar BJØRNEBEKK</p> <p>Co-Authors: Mari Vaage Wang Rolf Vegar Olsen Hanne Nissen Bjørnsen</p>	<p>Promoting adolescent mental health: Measuring school's contribution</p>	<p>Unfavourable development patterns for young people's mental health are increasingly being discovered all over the globe, and due to this issue, authorities in several countries have wanted more focus on mental health in schools. This study intended to test the predictive value of a new scale for mental health learning in school. Based on data from 4,518 ninth graders, the study revealed that students' learning of mental health skills in school predicted their sense of personal control, coping strategies, and well-being. This study contributes to the research on mental health literacy by presenting a tool for measuring the school's contribution to mental health.</p>
<p>Julian BRAUCHLE</p> <p>Co-Authors: Valentin Unger Laura Schmidberger Jan Hochweber</p>	<p>Influence of school-related effects on student well-being during the Covid-19 pandemic</p>	<p>The Covid-19 pandemic containment measures resulted in far-reaching restrictions that posed major challenges for students. This study examines the impact of the school context on students' well-being during the pandemic using a two-stage approach. First, a qualitative content analysis of $N = 850$ responses to open-ended questions revealed evidence of a negative impact on students' well-being. Second, a latently modelled multivariate regression model based on Diener's definition of well-being was applied to $N = 1285$ students from Germany and Switzerland to examine the influence of the Covid-19 pandemic on students' sense of burden, general life satisfaction, and fear of the consequences of the pandemic. The model included factors such as procrastination, quality of teaching, self-regulation, home environment, media literacy and perceived support. The results suggest that more frequent procrastination has a negative impact on students' well-being, while a better equipped home office and a better equipped household have a positive impact on students' well-being during the Covid-19 pandemic. Female students and</p>

		students in higher grade also show lower levels of well-being. This study provides valuable insights into the differential factors affecting students' well-being during the pandemic to better adapt to similar situations, mitigate the impact of future disruptions and improve students' mental health. Furthermore, the present findings can help to exploit the potential of hybrid teaching formats.
Jonas BREETZKE Co-Authors: Theresa Wenker Carla Bohndick	Do motivational trajectories differ between academic disciplines?	Students' expectancies for success and their subjective study values play a central role in academic motivation and achievement. But even though academic disciplines are an integral contextual factor in higher education, research investigating their influence on expectancies and values has been lacking. To address this, we use multi-group latent change score models and investigate how students' expectancies and subjective study values differ between academic disciplines. In two separate studies, we analysed both differences across initial characteristics and three-month trajectories. In Study 1, we compare N = 403 students of disciplines with a broad, medium and narrow vocational orientation. In Study 2, we investigate N = 602 students of disciplines within the humanities and social sciences. Our results suggest, that expectancies, intrinsic values, utility values and attainment values declined, while costs increased over the three-month of our study. While the students' initial motivation differed markedly across academic disciplines, changes in motivational trajectories seem generalisable across academic disciplines.
Tanja BROSS Co-Authors: Ulrike Nett	Teachers' emotion regulation: A multilevel latent profile approach	In their daily work life, teachers are experiencing various, sometimes emotionally challenging situations that require them to regulate themselves to maintain their subjective well-being. Previous research mainly investigated teachers' emotion regulation on single strategy level without considering simultaneous strategies use, situational characteristics and distinct emotions experienced. However, research in other domains has found emotion regulation to be person-, situation-, and emotion-specific in nature. The aim of the present study was to investigate emotion regulation profiles in daily situations, while considering person-, situation-, and emotion-specificity as well as linkages with subjective well-being. In total, 169 teachers participated in a diary study during sixteen consecutive days. We identified three different patterns of emotion regulation on situational level, which varied in their combinations of strategies. At the individual level, we discerned two different profiles, each characterized by varying frequencies of the previously established situational patterns. Contrary to our assumptions, the situational patterns were not linked to subjective well-being. The findings advance our understanding of teachers' emotion regulation, emphasizing their combined occurrence and situation-specific nature.
Irena BURIĆ Co-Authors:	Teacher emotions, emotion regulation, and sense of efficacy: An experience sampling study	Teaching trigger emotions that often need to be regulated. Teachers choose among different strategies to manage emotions depending on the situation they are currently in. Thus, teacher emotion regulation strategies, and their associations with

<p>Maja Parmač Kovačić Izabela Sorić Barbara Balaž</p>		<p>emotions that mobilize them, should be examined in situ or in real classroom situations. Additionally, emotion regulation is a complex task that requires resources and often interferes with efficacy. The aim of this study was to examine the associations between teacher momentary emotions and emotion regulation, and to explore their longitudinal relations to teacher sense of efficacy (TSE) that may act both as a personal resource for effective classroom emotional responding, but also as its outcome. In total, 126 secondary school teachers participated in an experience sampling study (ESM) in which they reported on their momentary emotions and emotion regulation while teaching, three times per day and across ten days. Additionally, their trait TSE levels were assessed at baseline and follow-up, which were separated from the ESM in a one-month intervals. Multilevel structural equation modeling (MSEM) showed that, at within- and between-person levels, positive emotions were positively related to their genuine expression and negatively to hiding and faking, while negative emotions were positively related to hiding and faking. At the between-person level, positive emotions were predicted by TSE, but neither the emotions nor emotion regulation predicted future TSE. Teacher emotional experiences might be bounded by the appropriateness of their expression in the classroom and high TSE can promote beneficial emotional responding in teachers.</p>
<p>Sonja BÜCHEL Co-Authors: Felix Kruse Christian Bruehwiler</p>	<p>Importance of teachers' basic needs for teaching and student motivation in PE</p>	<p>The quality of teaching and the teacher are crucial factors in promoting pupils' subject-specific and interdisciplinary skills. A teacher's professional competence includes not only cognitive dispositions but also affective and motivational characteristics. These aspects are central as they influence teacher behaviour. This article examines the significance of the three basic psychological needs of teachers for their teaching and the development of student motivation in physical education, based on self-determination theory. The SNSF-funded EPiC-PE study's results are presented to support this argument. The findings indicate that the teacher's experience of autonomy is crucial for teaching behaviour and the development of student motivation.</p>

C

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Mafalda CAMPOS Co-Authors: Francisco Peixoto</p>	<p>Ethnic identity and school adjustment: Profiles of minority and non-minority students in Portugal</p>	<p>Recent advancements in educational research highlight the need to look for indicators of maladjustment and/or protective factors in migrant and ethnic-racial minorities in the educational context, who frequently experience higher discrimination and inequalities. These inequalities are observed not only in student achievement but also in their socio-affective adjustment, such as in terms of motivational orientations and school well-being. Ethnic-racial identity (ERI) research explores individuals' knowledge, connection, and affect regarding their ethnic/racial group (ERG), and is frequently operationalized through exploration, resolution, and affirmation, each impacting academic adjustment differently, but overall showing positive impacts on minority student's achievement and affective adaptation. Hence, the study of ERI is of special interest for the buffering of affective adjustment inequalities in students from different backgrounds.</p>
<p>Utku CAYBAS Co-Authors: Garam A. Lee William Van Luven Saki Inoue Manuela Urbanske Donnelly Lisa Linnenbrink-Garcia Tony Perez</p>	<p>Validating mental health cost: A new dimension of costs in Situated Expectancy-Value Theory?</p>	<p>This study introduces a new dimension of cost—mental health cost—within the framework of the Situated Expectancy-Value Theory (SEVT). Despite the established cost dimensions (opportunity, effort, and psychological/emotional), the study highlights an underexplored area: the mental health costs of academic pursuits, particularly in science, technology, engineering, and math (STEM) fields. Through a survey involving 728 college students enrolled in STEM classes from a diverse university in the southeastern United States, the research explores the validity of a mental health perceived cost measure alongside other well-established cost measures. Based on exploratory and confirmatory factor analysis (conducted on separate sub-samples), a 4-factor perceived cost model (effort, opportunity, psychological, mental health) was the best fit with mental health cost emerging as a unique correlated latent factor. Subsequent analysis also revealed that female students had higher mental health cost perceptions compared to male students. The findings also confirmed expected relations with other SEVT motivational beliefs. Mental health cost was significantly positively correlated with the other cost measures and negatively correlated with subjective values and self-efficacy. As a next step, to provide evidence of incremental validity, we will investigate the added</p>

		value of the mental health cost in predicting academic performance and persistence in STEM majors.
Meiting CHEN Co-Authors: Yixian Huang	Professional development approaches impacting postsecondary faculty motivation: A systematic review	In the neo-liberal academic era, postsecondary faculty are undergoing challenges on multiple fronts; institutional Professional Development (PD) approaches can assist in fulfilling faculty's needs and booster their job satisfaction and well-being in the long run. This mixed-method systematic review aims to investigate the characteristics of PD programs across countries and disciplines, as well as their impacts on postsecondary faculty members' motivation. The preliminary results based on six papers found that PD programs focused on various topics related to teaching, research, and EDI practices; multiple of them targeted specific cohorts such as women faculty in STEM field, or early-career faculty members. The majority of studies used quasi-experimental single-group design, and found that faculty perceived higher level of interest, value, self-efficacy, and belongingness to a community after participation. Institutional practical implications are suggested accordingly.
Ying-Chih CHEN Co-Authors: Jongchan Park Michelle Jordan Carlos Meza-Torres Emily Starrett	How does students' disposition of uncertainty navigation induces curiosity and learning achievement?	This study aims to conceptualize multiple dimensions of student disposition of uncertainty navigation in science learning, validate the conceptualized disposition of uncertainty navigation scale, and examine its relationship with curiosity and academic achievement. The study developed a multi-dimensional scale for uncertainty Navigation in science learning, taking into account four constructs of student disposition toward uncertainty navigation: epistemic orientation toward uncertainty, positive and negative affective reactions, self-efficacy, and strategies for uncertainty Navigation. Survey data collected from 876 middle school students were used for analyses to investigate the validity evidence of the scale. Exploratory and confirmatory factor analyses supported a five-factor model of uncertainty Navigation. Notably, positive and negative affective reactions to uncertainty are distinct constructs, warranting separate attention rather than a unidimensional approach. Structural equation modeling (SEM) was employed to examine the relationship between disposition of uncertainty navigation, curiosity, and learning achievement. The SEM findings highlight that curiosity (e.g., joyful exploration, deprivation sensitivity) is a critical mediator in the positive relationships between three dimensions of uncertainty navigation (e.g., epistemic orientation toward uncertainty, positive affective reactions, negative affective emotions) and learning achievement. Without epistemic curiosity as a mediator, positive and negatively affective reactions toward uncertainty negatively predict student learning achievement. The results demonstrate that students exhibit complex emotions when engaging in an uncertainty-driven learning environment to learn science.

<p>Michaela CHLOSTOVA MUNOZ Co-Authors: Greta Pelgrims</p>	<p>Secondary special education students' appraisals of tasks and teaching practices in mathematics</p>	<p>This doctoral thesis research takes place in the context of secondary special education. Its aim is to explore students' commitment and self-regulation in a didactic sequence in mathematics according to the situated approach of learning motivation in regular (Boekearts, 2001) and special education school contexts (xxx, 2013, 2019). This approach states that engagement and self-regulation is linked to the way students appraise a teaching and learning situation. Nevertheless, the way they appraise the curricular discipline the task belongs to and its related teaching practices also seem to motivate commitment and persistence in learning. The goal of this study is to understand what predicts most students' engagement and self-regulation in tasks, among these three levels of appraisals (i.e. situational, contextual, curricular discipline). The research sample consists of 51 students with special educational needs (mage = 13,8 years) attending special education classrooms in secondary regular schools. Research design relied on a mixed method, combining quantitative (questionnaires completed by students) and qualitative (observations by video recording of students' activity and teaching practices, and interviews with students) data analyses. Statistical results show situational appraisals, and in particular specific task interest, as well as teaching practices appraisals, mostly predict engagement and self-regulation within mathematical situations. However, interviews reveal this task interest is mainly episodic, meaning students are attracted by secondary features and not by the mathematical knowledge to learn.</p>
<p>Rinat COHEN Co-Authors: Avi Assor Yaniv Kanat Maymon</p>	<p>The association between mothers' authentic inner compass and autonomy-supportive parenting</p>	<p>Sense of authentic inner compass (AIC) is the feeling that one knows what is important to oneself because one has values, aspirations, and goals with which one deeply identifies. Past research demonstrated the benefits of AIC, but there is no published research on parental dispositions promoting youth AIC. To increase knowledge of this issue, we examined whether mothers' AIC is associated with a corresponding AIC in their children, and explored autonomy supportive child-rearing practices that may serve as pathways linking mothers' AIC with adolescents' AIC and subsequent well-being. We examined a Bedouin Israeli sample because it represents a fairly patriarchal, autonomy-eschewing, context, where the benefits of mothers' authenticity and autonomy-support are not obvious.</p>

D

Presenting Author, Co-Authors	Title of Presentation	Abstract
Zoé DAVREUX Co-Authors: Benoît Galand	Discrete emotions in the face of climate change and dimensions of pro-environmental behaviors	<p>Adopting more environmentally-friendly behaviors is one way for mitigating climate change. It is also a central goal of Environmental Education. Pro-environmental behaviors (PEBs) were suggested to be multidimensional by some scholars, yet the proposed dimensions vary between studies. Climate change can also arouse very intense emotions in individuals, but the extent to which these emotions support or hinder the adoption of PEBs remains an open question.</p> <p>To better understand the relationships between emotions and PEBs, first it seems important to take into account the different characteristics of those emotions: their positive or negative valence, their activating or deactivating nature, the approach or avoidance motivations they generate, or their mixed nature. Next, it seems relevant to control for the effect of other, more classical predictors of PEBs, such as those considered by other theoretical models, like for instance the Theory of Planned Behavior (attitude, social norms, self-efficacy).</p> <p>Thus, the aim of the study is to investigate the relationships between several discrete emotions (having specific characteristics) and different dimensions of PEBs, while controlling for perceived social norms, attitude, self-efficacy and behavioral intentions.</p> <p>1,572 individuals aged between 16 and 98 participated to an anonymous survey. Consistently with other studies, two dimensions of PEBs were identified through EFA, a private and a public one. Each dimension of PEBs was associated with specific discrete emotions in multiple regression analyses, some positively and other negatively. The practical implications of these results will be discussed.</p>
Katrien DE COCKER Co-Authors: Arne Bouten Leen Haerens	Peer vs teacher relatedness: Do two dimensions exist and how do they relate to student outcomes?	<p>Students' basic psychological needs are important to foster (motivation for) learning and personal development. However, the need for relatedness (sense of connection with others) has been studied less. Evidence in primary and higher education suggests that the need for relatedness is multi-dimensional, with a factor for peers and teachers. Evidence in secondary education is missing. Hence, present aims were to examine (1) if two different dimensions of relatedness (relatedness to peers and relatedness to teachers) exist and (2) if their distinctive predictive value towards student motivation and (dis)engagement differ. Flemish secondary students</p>

		<p>(n=1042, 15.47 (1.65) years old, 41.0% male) completed scales on peer and teacher relatedness satisfaction and frustration, motivation for PE and (dis)engagement during PE. An exploratory and a confirmatory factor analysis confirmed the 4-factor model including peer relatedness satisfaction and frustration, and teacher relatedness satisfaction and frustration. Linear Mixed-Effects models showed that teacher relatedness satisfaction was positively and more strongly associated with student autonomous motivation and engagement than peer relatedness satisfaction. Teacher relatedness frustration was positively and more strongly associated with disengagement than peer relatedness frustration, while peer relatedness frustration showed positive and more stronger associations with controlled forms of motivation than teacher relatedness frustration. To conclude, the need for relatedness is multi-dimensional with peers relatedness satisfaction/frustration and teacher relatedness satisfaction/frustration being differently associated with student motivation and (dis)engagement. Consequently, future research should explore both teacher-relatedness and peer-relatedness separately to gain a comprehensive understanding of their influence in educational settings.</p>
<p>Stefanie DE JONGE Co-Authors: Evelien Opdecam Erika Patall Leen Haerens</p>	<p>Teacher communication matters: Reducing test anxiety through goal clarification and process feedback</p>	<p>Test anxiety is a concern for students and teachers as it can interfere with self-efficacy and result in lower performance. Accordingly, interventions have been implemented, yet they mainly focus on the individual student and less on students' social context. Grounded in the Self-Determination Theory, this study investigates whether aspects of the social context, that is the way teachers interact with their students about tests, can also reduce test anxiety. More specifically, we study whether goal clarification and process feedback, two teacher strategies that provide students with structure, can lower test anxiety and whether the basic psychological needs for autonomy, competence and relatedness mediate this relation. For the purpose of this study, a longitudinal pretest-posttest design in ecologically valid, authentic classrooms was conducted. 237 secondary school students from Year 11 and 12 completed questionnaires at two occasions about their test anxiety, need-based experiences and perceptions on their teachers' goal clarification and process feedback. Multilevel regression and path analyses revealed that student-level perceptions of both goal clarification and process feedback directly predicted decreased test anxiety. Students' experiences of increased need satisfaction, but not frustration, mediated these relations. Moreover, process feedback at the classroom-level showed a negative relation with test anxiety. These findings suggest that lower test anxiety is associated with contexts in which teachers are perceived to provide sufficient clarity and process feedback related to the learning goals. This research underscores the importance of students' social context and offers insights</p>

		into how teacher-student interactions in the classroom can inform anxiety-reducing interventions.
Paul DE MAAT	Students' experiences with and beliefs about independent silent reading	Independent Silent Reading (ISR) is a means for many schools to stimulate students' reading. However, ISR may be counterproductive, particularly for reluctant readers. In a qualitative study, we used interviews with 29 students varying in age (Grade 5-7), gender, reading skills, and involvement during reading to examine their experiences with and beliefs about ISR. After analyzing the results by means of grounded theory procedures, five themes were identified. Together, these themes suggest that it is important to ensure a quiet reading environment that enables students to focus as well as the presence of a range of books that allows students to choose books they deem interesting. In a next step, we aim to test the effects of interventions that are built on these outcomes.
JIAQIANG DONG Co-Authors: Takatoshi Mutou Rei Okamatsu Ayumi Tanaka	Effects of growth mindset interventions on well-being	Dweck's (2012) Growth Mindset theory provides a vital framework for comprehending the multifaceted capacities required by university students, encompassing sustained motivation, academic performance, and related aspects. Consequently, the efficacy of growth mindset interventions has been the subject of several studies. In our study, we aimed to replicate Parada and Verhaci's (2022) growth mindset intervention procedure among Japanese university students. The effectiveness of intervention and relationship between growth mindset, achievement goals, and academic performance were examined. Our study involved 91 university students across three phases: Phase 1 (online survey), Phase 2 (face-to-face intervention and survey), and Phase 3 (online survey). We partially validated the intervention effects, particularly noting effectiveness among individuals with a low growth mindset and high-performance goals.
Kit DOUBLE	Emotion regulation beliefs in teachers: Do teachers know when they are helping students' emotions?	Emotion regulation is a key part of academic success and wellbeing at school. Yet, students often lack the emotional knowledge and skills to regulate their own emotions. Unsurprisingly, teachers often step in to help regulate their students' emotions (e.g. providing emotional support and advice). Most research on emotion regulation focus on self-directed emotion regulation (intrinsic emotion regulation) only recently has research turned to focus on extrinsic emotion regulation of others' emotions. Accordingly, we know less about the extrinsic emotion regulation strategies that teachers can use to help their students feel better. The question the current research seeks to understand is whether teachers are able to accurately determine whether their extrinsic emotion regulation attempts are effective at helping students feel better. In two experiments, we show that teachers perceived efficacy when helping a student regulate their emotions is influenced to a greater extent by the student's average emotion levels rather than the relative effect of regulating vs not regulating the student's emotions. This led teachers to feel like they were

		<p>making students feel better both when they were not and even when they were making the student feel worse. We argue that this form of base rate neglect makes it difficult for teachers to learn through first-hand experience about the efficacy of their attempts to make their students feel better and specific training and guidance may be a more effective way to improve teachers' emotion regulation strategies.</p>
<p>Benjamin DREER-GOETHE</p>	<p>Beyond the surface: Exploring the complexity of student teachers' emotions via network analysis</p>	<p>Given the pivotal role of student teachers' emotions in shaping their learning and professional growth during field experiences, a comprehensive investigation is warranted. This study employs longitudinal data and co-occurrence network analyses to examine the frequency and patterns of positive and negative emotions among student teachers at three distinct intervals (beginning, middle, and end) of a 15-week field placement. The results uncover a substantial prevalence of mixed emotions among student teachers, often featuring stress alongside positive emotions like interest, attentiveness, excitement, strength, and confidence. Additionally, the composition and dynamics of emotional co-occurrences evolve over time, with an increase in mixed emotions observed during the initial and middle phases of field experiences. These findings underscore the inadequacies of traditional correlation analyses in capturing nuanced emotional nuances. The implications of these insights for supporting and enhancing student teacher development are thoroughly explored.</p>

E

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Ulf EBELING</p> <p>Co-Authors: Robert de Leeuw Janniko Georgiadis Fedde Scheele Götz Wietasch</p>	<p>Early bird or night owl: Insights into students' study patterns using e-learning registrations</p>	<p>Educational activities for students are typically arranged without considering their preferences or knowing their peak performance hours. Students might prefer to study at different times based on their chronotype, aiming to optimize their performance. While face-to-face activities during the academic schedule do not offer flexibility and cannot reflect students' natural learning rhythm, asynchronous e-learning facilitates studying at one's preferred time. E-learning usage data hence serves as a valuable proxy for study behavior, presenting research opportunities to explore students' study behaviors. This retrospective study aims to investigate when and for how long undergraduate students at a medical faculty use medical e-learning modules. We analyzed the usage data of 562 undergraduate multimedia e-learning modules over a span of two academic years. We employed educational data mining approaches and identified patterns in access times and durations. On average, students use e-learning for 16.8 minutes daily and stop using a module after 10.2 minutes, but access patterns vary widely. This study reveals new insights into the study patterns of a complete student cohort during and outside lecture hours. These findings underline the value of temporally free accessible study material. In addition, the findings may serve as a guide for researchers and educationalists for more individualized educational programs.</p>

F

Presenting Author, Co-Authors	Title of Presentation	Abstract
Flora FASSL Co-Authors: Maximilian Hofleitner Melanie Sticha Marko Lüftenegger	Are we envious of (class)mates' grades? - An experimental vignette study	Grades impact students' school careers and, therefore, might elicit envy. Research found high control and deservingness to elicit benign envy and low control and deservingness to elicit malicious envy. Friends appraise deservingness and control as high, making them more likely to experience benign than malicious envy. While research on envy among friends pointed towards the importance of relationship closeness when investigating envy, it is still scarce and only included adult samples. The present study applied an experimental vignette design to investigate (1) whether a typical school situation (i.e., receiving a worse grade than someone else) elicits envy and (2) whether the relationship closeness (i.e., friends or classmates) influences envy feelings. The sample consisted of 264 Austrian students (57.2% female, 0.8% diverse) attending grades 7-10. The students were randomly allocated to four different vignette conditions and subsequently answered items measuring state envy, appraisals, and social desirability. We found participants who read malicious envy-eliciting vignettes to significantly experience more malicious envy, less benign envy, and had lower control and deservingness appraisals than participants who read benign envy-eliciting vignettes. No differences were found for pain. To examine the influence of relationship closeness on envy feelings, Bayesian ANCOVAs were computed. We only found classmates to experience more malicious envy feelings than friends after reading a malicious envy eliciting vignette. The results show that grades elicit envy, that the newly created vignettes work and that friendship mostly does not play a role in envy of grades. Limitations and implications are discussed.
Christine FEISS Co-Auhtors: Tanja Held Gerda Hagenauer Sandra Moroni	The relationship between the quality of homework, students' anger during homework, and performance	The present study examines the relationship between aspects of homework quality (embedding homework in the teaching-learning process and differentiation), the anger experienced by students while completing German homework (language of instruction), and orthography performance. In total, 410 students from 23 eighth-grade classes in the Swiss canton of Bern have been surveyed. To date, no studies have investigated the relationship between either of the two qualitative aspects and anger as a specific emotion. Multilevel mediation models showed that at the student level, students' anger about homework contributed to a significant indirect effect of

		perceived embedding of homework in the teaching-learning process on students' orthography performance. However, no significant indirect effect of perceived differentiation in homework on performance was found. The results can guide the adaptation of the training and further education of teachers to enable them to give high-quality homework that does not trigger anger in students and, conversely, can positively impact their performance.
Lídia Vinczéné FEKETE Co-Author: Judit Sass	Enhancing engagement in higher education: Optimizing instructional videos for motivated learning	Frontal lecturing is the least motivating form of teaching, especially when it is provided in the form of instructional videos. Though these forms of presentations should not be the exclusive or dominant tools of the teaching-learning process, their usage and significance are increasing because they facilitate flexible and self-paced learning and (in the case of blended courses) they can release time for various forms of classroom activities. This form of teaching does not enable the use of several methods serving interactivity and deep learning strategies, such as elaboration and critical thinking (Pekrun, 2014), while the majority of undergraduate students struggle to maintain focus thus it is a particular challenge for educators to design their videos in a way that helps student engagement. The paper aims to support instructors with an insight into the theoretical background of academic emotions, especially boredom, and with practical recommendations in terms of the tools and methods used in their instructional videos, based on the results of an empirical study currently being conducted at Corvinus University of Budapest, with the involvement of 5 different subjects and instructors, 120 students.
Xiangyuan FENG Co-Author: Ni Zhang	Teachers' diversity conceptions and culturally responsive teaching	In the context of global efforts to diversify the teaching profession and integrate diversity into education, particularly in response to the increasing diversity of student populations, this study investigates the relationships between pre-service teachers' conceptions of diversity, equity and inclusion (DEI) and their culturally responsive teaching practices in Chinese secondary education. Drawing from scholarly research highlighting gaps in teacher preparedness for diverse classrooms, the study aims to elucidate how pre-service teachers' conceptions, intentions, and practices align, and how teacher education programs can effectively nurture these factors. Using a comprehensive battery of instruments including the Munroe Multicultural Attitude Scale Questionnaire (MASQUE) and the Teacher as Social Context (TASC) questionnaire, along with student evaluations of teachers' differentiated instruction skills using the My Teacher Questionnaire, data were collected from 257 pre-service teachers and 1356 students. Preliminary research results confirmed the validity and reliability of the three scales, revealing positive scores across DEI conceptions and a high-average level of differentiated instruction skills among participating teachers. Notably, emotional engagement with diversity issues positively correlated with differentiated instruction skills, while awareness of

		diversity issues showed a negative association. Additional results will be reported during the conference. The study's significance lies in its contribution to understanding how teacher education programs can better prepare teachers cognitively, emotionally, and behaviorally to create equitable learning environments, particularly for diverse and disadvantaged students.
Xiangyuan FENG Co-Author: Yingyan Li	Exploring the relationship between emotional regulation and online self-regulated learning	COVID-19 has prompted a rapid increase in student participation in digital learning environments. In contrast to traditional face-to-face instruction, digital learning requires students to exhibit a higher degree of emotional self-control and self-regulation in their learning. Nevertheless, empirical research exploring how students' emotional skills influence learning processes in digital environments is lacking, particularly in relation to learning behaviours such as time management, environment structuring, and help-seeking. To address this gap, a survey was conducted on a sample of 356 college students from 28 geographical areas. Multivariate multilevel analysis revealed that emotional self-control facets (stress management, emotional regulation, and impulse control) had distinctive effects on online self-regulated learning. Stress management is the sole facet that significantly and positively affects all learning strategies. In addition, we found that academic discipline can significantly affect how students approach self-regulated learning. The findings are particularly relevant to understanding the relationship between self-regulated learning and emotional self-control in online education.
Barbara FLUNGER Co-Authors: Nadie Grotentraast Roos Boone Fleur van den Bempt	Exploring students' hesitancy in applying effective motivation regulation strategies	University students frequently struggle with their motivation while studying. Students can regulate their motivation and sustain persistence in study tasks they find boring or irrelevant by applying motivation regulation strategies. However, students often do not apply motivation regulation effectively. A qualitative study was conducted to investigate the reasons underlying the selection of motivation regulation strategies, aiming to shed light on the discrepancies between knowledge about and implementation of motivation regulation strategies. 9 semi-structured interviews were conducted and analyzed using thematic analysis. The findings confirmed that students know about the effectiveness of specific motivation regulation strategies, but this knowledge does not necessarily translate to preference and utilization of a strategy. The analysis of the interviews highlighted distinct factors underlying this discrepancy, such as students' self-concept and ability for self-regulation, whether a strategy generates positive feelings or prevents negative ones, the specific situation, the time and effort required, convenience, and social burden. These results point to the impact of perceived costs of motivation regulation. Therefore, currently, further interviews are conducted to examine how various perceptions of costs, such as effort costs or psychological costs, are salient in students' decision-making processes when choosing motivation regulation strategies.

G

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Benoit GALAND Co-Author: Zoé Davreux</p>	<p>Does motivation and emotions predict the evolution of pro-environmental behaviors among children?</p>	<p>One aim of environmental education is to foster the adoption of nature-friendly behaviors. An important question is therefore which processes or variables environmental education activities should focus on in order to achieve this aim. A large number of variables have been suggested by environmental education researchers, such as knowledge, self-efficacy beliefs, emotions, as well as frequency of contact with nature or feelings of connection to nature. However, these different variables are not always considered together, making it difficult to identify their respective contributions. More importantly, most of the available studies follow a cross-sectional research design, which makes it impossible to test whether these variables do indeed predict changes in pro-environmental behaviors. 899 pupils in grades 4, 5 or 6 completed a questionnaire twice, six months apart. This questionnaire included measures of pro-environmental behaviors, action knowledge, self-efficacy beliefs, emotions, frequency of contact with nature, as well as the Connection to Nature Index (Chen & Monroe, 2012). Students' age, gender and socio-economic level were also assessed. Multiple regression analyses show that changes in pro-environmental behaviors are positively related to enjoyment of nature and self-efficacy beliefs, and negatively related to participants' age. The other variables had no direct effect on pro-environmental behaviors at T2. These results suggest that activities that promote self-efficacy and emotional experience of enjoyment of nature are a promising avenue for environmental education.</p>
<p>Yannan GAO Co-Authors: Anna-Lena Dicke Nayssan Safavian Jacquelyne Eccles</p>	<p>More than one "pipeline": Gendered STEM career paths based on longitudinal latent class analyses</p>	<p>Concerns for increasing women's representation in the STEM workforce has spurred extensive efforts to enhance women's STEM persistence, particularly in physics-related STEM fields. While research indicates gender preferences in STEM career choices, there's a notable absence of direct evidence elucidating the distinct career pathways for women and men in these fields. In this study, we use U.S.-based longitudinal data to explore men's and women's career trajectories across STEM domains. We tracked adolescents' (N = 814, 54% women; 48% White, 41% Black, 6% Latine, 5% other; M age = 13.12 years old [SD = 1.94 years]) career choices across non-STEM, health-STEM or physics-related STEM fields at ages 13, 18, 22 and 25. Longitudinal latent class analyses were used to identify</p>

		subgroups with distinct patterns of career choices. The result revealed four heterogeneous subgroups: 1) physics-STEM exploration, 2) health-STEM persistence, 3) non-STEM expansion and 4) health STEM exploration. Chi-square Test showed an association between patterns of career choices and gender: more men than expected were represented in the physics-STEM exploration group, whereas more women than expected were represented in the other three groups. Findings indicate frequent entries into STEM subfields occurred at various time points, more commonly than constant attrition from the STEM. Moreover, the sizeable subgroups with heterogeneous career paths highlight the diversity within STEM pathways, dispelling the myth of a homogenous “pipeline.” Lastly, our results highlight the need to explore the unique career paths of both women and men, beyond fitting one group into another group’s paradigm.
Alessio GIARRIZZO Co-Author: Nathalie DELOBBE	The Geneva Adult Motives for Education Scale: Development, validation, and relations to emotions	Motivation to train is a key predictor of successful training outcomes such as learning satisfaction, learning performance, or training transfer. Individual motivations are also known to have a central role in the elicitation of emotions. However, motivation is often measured by grouping motivational constructs related to stable and dispositional features of the learner. Though they are fundamental in predicting training engagement, these factors overlook the specificity of motives that lead an adult to engage in training, and that are especially likely to influence their affective reactions in this context. While some typologies seek to characterise adults’ contextualised and specific motives for engagement in training, we still need a reliable and validated measurement tool to advance research on the relationships between motivations and emotions in continuing education. The present contribution aims at developing and testing the preliminary psychometric properties of the Geneva Adult Motives for Education Scale (GAMES). Here we present the initial steps of its development: item generation and content validation, construct validity and reliability, as well as criterion validity in relation to other key motivational constructs (basic psychological needs, general and academic self-efficacy beliefs, and achievement goals orientation). Secondly, we explore the relations between motives and academic emotions. Given the relevance of individual motivations to predict academic emotions in training, the GAMES could become a useful tool to characterise the motivational profile of adult learners. Consequently, that would help tailor training programs best suited to achieve key learning outcomes such as training transfer.
Elisabeth GRAF Co-Authors: Jakob Schwerter Daria K. Benden	Situational and longitudinal relations between appraisals, anxiety, and learning during self-testing	Self-testing—i.e., regular low-stakes quizzing—is an evidence-based learning strategy supporting students’ academic success but students’ motivations to invest effort in self-testing is often limited. To date, little evidence exists on the complex interplay between motivation (expectancy-value appraisals), emotions (anxiety), and achievement during authentic self-testing exercises across a semester. Based

<p>Fani Lauermann</p>		<p>on situated expectancy-value theory and control-value theory, this study aimed to investigate how cognitive appraisals of control and task values (intrinsic value, utility value, cost) are associated with anxiety and how these variables relate to achievement during voluntary self-testing. Further, we tested whether achievement on self-testing exercises explains future motivational and emotional engagement in self-testing and how the reported experiences contribute to students' end-of-term achievement beyond trait-like motivational and affective dispositions. To test our hypotheses, we used data from 939 participants of an introductory math lecture, where students could participate in weekly self-testing exercises, for which their emotional and motivational evaluations were assessed. Multilevel structural equation models revealed that control (expectancy beliefs) and intrinsic value were negatively, while cost positively related to students' anxiety. Achievement was positively related to control and utility value, and negatively to anxiety. It revealed positive effects on perceived control, utility value, and cost in subsequent self-testing situations. At the inter-individual level, higher perceived control and achievement in self-testing situations across the semester predicted students' end-of-term achievement. It may therefore be important to tailor students' self-testing exercises to their ability levels to strengthen students' week-to-week perceived control and performance, and thus support their end-of-term academic success.</p>
<p>Karianne GRØNLI Co-Authors: Bente Walgermo Per Henning Uppstad Erin Margaret McTigue</p>	<p>Feedback on students' oral reading— A case for student agency: A systematic review</p>	<p>When beginning readers read aloud, the teacher's feedback affects students' reader identities, motivations, and emotions in the critical process of learning to read. This systematic review investigates feedback on elementary students' reading and its potential to support students' agency and motivation in learning to read. We identified and analyzed 52 empirical studies conducted in K–5 settings. Findings suggest clear co-occurrences of a) how feedback was presented and b) what aspects of reading were targeted: explicit feedback on decoding on one hand and implicit feedback on meaning on the other. Notably, implicit feedback practices were more strongly associated with support of student agency, suggesting that these practices offer greater potential for enhancing motivation. Finally, findings portray that two groups of students; struggling readers and L2 learners, tend to receive feedback that does not promote agency. Interestingly, the results show a discrepancy between teachers' perceived feedback practices and the actual findings. Although teachers are aware of the nuances in feedback types, this awareness is not always reflected in their teaching practice. In conclusion, this study portrays how teachers' feedback practice may affect motivational processes in reading, and thereby early development of reading skills. The potential of feedback practices to support students' agency and motivation in becoming proficient readers is discussed.</p>

<p>Irene GUIDON & Isabelle KRUMMENACHER</p> <p>Co-Authors: Tina Hascher Julia Mori</p>	<p>Fostering resilience: A qualitative exploration of experiences with a learning platform</p>	<p>Resilience is a vital ability that allows individuals to adapt and rebound from adversity, challenges, or stressful situations while safeguarding their wellbeing (Lazarus & Folkman, 1984). The ability to respond resiliently to professional challenges is seen as a valuable skill for teachers. This study, part of the NAME project, empirically explores methods for enhancing the resilience of preservice teachers during their training. The study implemented and evaluated an intervention program utilizing a newly developed learning platform based on the BRiTE program (Mansfield et al., 2016). Employing a quasi-experimental design, the study involved N = 235 preservice teachers (N = 136 in the experimental group; N = 99 in the control group) in their third semester at the University of Teacher Education for Primary Education in CITY. The effects of the intervention are investigated using a mixed-method approach. Quantitative data was gathered through self-report questionnaires on resilience and strategies administered to the entire sample before and after the intervention. Qualitative data was collected through semi-structured individual interviews of N = 21 participants from the experimental group, aiming to gain deeper insights into their resilience processes after the intervention. This presentation focuses on the qualitative findings, highlighting how preservice teachers respond to an intervention that aims at supporting their personal and contextual resources to fortify their resilience. The results underscore the importance of integrating resilience-promoting measures into teacher education programs from future teachers' perspectives.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Jannika HAASE Co-Author: Lysann Zander</p>	<p>University students' thriving during and after the pandemic: Evidence from four academic years</p>	<p>The COVID-19 pandemic created one of the largest disruptions of education systems in history and significantly impacted university students' academic and social lives. While there is substantial evidence on the negative repercussions of the pandemic on students' mental health and well-being, research in higher education remains scarce regarding a specific form of personal growth: students' thriving, i.e., their experiences of vitality and learning. In the present studies, we therefore examined university students' thriving at 14 time points, including 10 time points over the course of the pandemic (2020-2023), and the systematical comparison with 4 post-pandemic time points (2023-2024). Compared to the onset of the pandemic, in our overall sample (N=3,937; T1-T14; Study 1), we found decreases of students' thriving during the second and third pandemic semesters, when universities operated fully online, and increases at several later time points until May 2023 when the end of the pandemic was officially declared. In our longitudinal subsample (n=504; T1: first pandemic semester - T6: fourth pandemic semester, Study 2) results show a similar pattern for the first three pandemic semesters: students had intraindividual decreases in their sense of vitality and learning from T1 to the three subsequent time points. We discuss potential explanations for our findings and future research directions.</p>
<p>Tina HASCHER Co-Authors: Susan Beltman Caroline Mansfield</p>	<p>"What kept you going?" Teachers talk about their motivation during the COVID-19 pandemic</p>	<p>Motivation research offers a variety of theories that have also been applied to teacher motivation such as self-determination theory (Ryan, & Deci, 2002) or goal theory (Butler, 2007). Despite differences, motivation theories share the attention given to social aspects of motivation. The aim of our presentation is to shed light on social factors that were affected by the COVID-19 pandemic and that supported or inhibited teacher motivation. We will present results from two related, qualitative studies that were conducted during the pandemic in the year 2020 with primary teachers in COUNTRY (n = 26 teachers) and in COUNTRY (n = 21 teachers). More concretely, these two in-depth interview datasets were reanalysed to understand teachers' subjective perspectives on how the social aspects of their motivation for teaching were impacted during the pandemic and how social aspects played a role for coping with this exceptional teaching situation. Results indicate for instance that</p>

		social relatedness with students continued during the pandemic even when the contact was only online and loose and was a source of teacher motivation. Supportive relationships with colleagues were highly relevant for teacher motivation. Social utility values became also more important when navigating through the pandemic as a teacher.
Marine HASCOËT Co-Author: Catherine Audrin	Can social support prevent anxiety, burnout and drop-out in pre-service teachers?	Studies show that teacher attrition is a growing phenomenon in various countries (Ingersoll, 2001; Stokking et al., 2003). It therefore seems important to understand the determinants of this attrition, beginning right from the initial stages of training. In this study, conducted with preservice teachers, our aim is to explore how the support perceived by teachers from their peers and trainers can reduce the anxiety experienced during their studies, the risk of burnout and ultimately encourage perseverance. Data collected by questionnaire from 324 preservice teachers support our hypotheses. Results suggest that greater attention should be paid to support from peers and trainers in teacher training institutes.
Olli-Pekka HEINIMÄKI Co-Authors: Katja Upadyaya Katariina Salmela-Aro Toyma Hiroyuki	Satisfied or frustrated? A latent profile analysis of teachers' basic psychological needs fulfilment	Basic Psychological Needs Theory, a core component of Self-Determination Theory, highlights three essential psychological needs—autonomy, competence, and relatedness—as pivotal for human motivation and well-being. This study investigates the satisfaction and frustration of these needs among Finnish teachers through questionnaire data collected in 2021 (n=993) and 2023 (n=1278). Latent Profile Analysis conducted in R software identified two profiles: "Satisfied", with high need satisfaction and low frustration, and "Challenged", with moderate satisfaction and increased frustration. Notably, the Challenged profile was predominant at both time points. However, there was a positive trend towards greater satisfaction and reduced frustration over time: the proportion of teachers in the Challenged profile decreased from 61.8% in 2021 to 52.7% in 2023. Neither age nor gender predicted profile membership; however, meaningful work, perceptions of illegitimate tasks, and turnover intentions were statistically significant predictors. These findings underscore the importance of supporting teachers' basic psychological needs for enhancing their well-being and job-engagement.
Dora HERRERA Co-Authors: Lennia Matos Rafael Gargurevich Marjhorí Gomez Yasmin Cerna Benjamin Lira Cecilia Ferreyra	A potential exodus: What is behind dropping out intentions among university students?	In 2022, almost a quarter (23.2%) of Peruvian university students dropped out of their studies. This means that valuable human resources are lost. In light of this reality, the current study aims to determine which sociodemographic factors (sex, university type, career), academic variables (including GPA and availability of tutoring program) and psychological variables (specifically factors promoting resilience and Future Orientation as motivational variable) are associated with and can predict dropout intentions among undergraduate students. Participants comprised 768 students selected from nine public and private universities representing all three Peruvian geographical regions: coast, highland and rainforest. Students

		completed questionnaires assessing the specified variables. Validity evidence of internal structure and reliability was deemed acceptable for factors promoting resilience. Additionally, a seven-factor model for the subscales of Future Orientation as a motivational variable, demonstrated a good fit to the data with acceptable internal consistency. Dropout intentions were assessed using a single item. A structural equation model fit the data reasonably well ($\chi^2 = 232.273$, $df = 72$, $p < .001$, $CFI = .926$, $RMSEA = .069$, $SRMR = .052$). The findings indicate that students who scored higher on factors promoting resilience and most subscales of future orientation, were less likely to intend to drop out. Students' grades and the availability of tutoring programs did not predict dropout intentions. On average, male students endorsed higher dropout intentions ($d = 0.27$, $t = 3.07$, $p = .002$). These results offer general guidelines to further interventions aimed at protecting and retaining highly valued human resources.
<p>Maximilian HOFLEITNER</p> <p>Co-Authors: Joy Muth Flora Fassl Marko Lüftenegger</p>	The nature of schadenfreude: A multifaceted construct?	While schadenfreude – the pleasure of the misfortune of another person – is generally considered to be a unipolar construct, some theories propose different sub-forms of schadenfreude that are based on distinct concerns, such as justice and rivalry schadenfreude (Wang et al., 2019). Especially in the school context, where competition and social comparisons are common, it is reasonable to assume that students are provided with ample opportunities to experience different forms of schadenfreude. We, therefore, conducted a qualitative interview study with students to further explore the nature of this phenomenon and we found evidence for five distinct subforms of schadenfreude. Based on these five subforms we then developed a novel schadenfreude scale. The present study used a sample of 1884 Austrian secondary school students (51.3% female, 0.7% diverse, $age_{mean} = 14.1$) to investigate the structure of schadenfreude utilizing this scale. We calculated 1) a g-factor model, 2) a correlated factor model with three factors, 3) a correlated factor model with five factors, and a 4) higher-order factor model with five factors and compared their model fit indices. Preliminary results suggest that schadenfreude should be considered a multidimensional construct with five separate sub-forms.
<p>Kathryn HOLMES</p> <p>Co-Authors: Erin Mackenzie Kathryn Holmes Nathan Berger Matt Thompson</p>	Gender differences in factors related to adolescents' intentions to study senior mathematics	Student disengagement with mathematics increases in secondary school, particularly for girls, resulting in disproportionate enrolments of girls and boys in senior secondary mathematics courses. The decision to study mathematics in the senior years is influenced by a range of personal and social factors such as students' perceived competence and interest in mathematics, their perceptions of its relevance to their lives, and their views about levels of teacher support at school. Underpinned by Expectancy-Value theory, this study of 1182 Australian adolescents modelled male and female attitudes and perceptions separately to determine how

		these factors predict intentions to study senior mathematics. We found that adolescents with higher levels of intrinsic and utility value were more likely to continue to study mathematics, but the strength of these relationships varied by gender. We also found that perceived support from mathematics teachers was positively related to adolescents' intentions to continue studying mathematics, but that most of this influence was mediated by mathematics expectancies and task values. The findings have implications for schools and teachers as they point to interventions that could be tailored for girls and boys to maximise mathematics participation.
<p>Lisette HORNSTRA Co-Authors: Aafke Essen Nienke Smit Janneke van de Pol</p>	<p>Adaptive teaching: Associations with need satisfaction, student motivation, and achievement</p>	<p>Adaptive teaching (i.e. cognitive support that is tailored to students' understanding) can be considered an important facet of need-supportive teaching and can enhance students' motivation and academic achievement. This study aimed to examine whether satisfaction of students' needs for autonomy, competence, and relatedness serves as a psychological mechanism underlying associations between adaptive teaching and students' motivation and achievement. The study included 692 secondary education students from 35 classes. The results indicated that student-perceived adaptive teaching was positively related to students' need satisfaction and motivation, with mixed findings regarding academic achievement. Feeling competent mediated the association between adaptive teaching and achievement, while feeling autonomous and related mediated the association between adaptive teaching and intrinsic motivation. Furthermore, within-classroom variation in adaptive teaching was considerably larger than between-classroom variation, raising questions on the extent to which adaptiveness can be considered an overall quality of teachers. In all, the findings suggest that through adaptive teaching, teachers can support their students' psychological needs and motivation.</p>
<p>Xiaoshan HUANG Co-Authors: Negar Matin Jason Harley Ethan Churchill Jeffrey Wiseman Susanne Lajoie</p>	<p>Learners' interactions and emotional arousal in a collaborative diagnostic task: A multi-case study</p>	<p>This multi-case study investigated learners' interactions and emotional arousal among residents during a collaborative diagnostic task. Drawing from the theory of socially shared-regulated learning (SSRL), various forms of social interaction emerged. By comparing learners' interactive and emotional arousal patterns between the selected cases, we aimed to understand the interplay between different types of SSRL interactions, emotional arousal patterns, and diagnostic performance while learners worked collaboratively on solving clinical cases. To achieve our goal, we performed a multimodal, multi-case event-oriented approach by integrating multiple data sources of verbal and physiological data. The results showed distinct patterns in learners' interaction types between the selected cases, with differences in frequencies of metacognitive and cognitive engagement, and the proportion of emotional expression. The higher performance group performed more metacognitive interactions and cognitive reflections than the counter group. Conversely, the latter exhibited higher proportion of emotional and motivational</p>

		interactions and cognitive interactions at the performance stage. Furthermore, we identified two themes (i.e., metacognitive interactions, and expressions of emotions and motivational beliefs) that are more likely to trigger emotional arousal throughout collaborative problem solving. Specifically, emotional arousal was found to coincide with metacognitive interactions in both cases, particularly at the beginning and middle of the task. In contrast, emotional arousal was observed during emotional and motivational interactions towards the end of the task in both groups. Implications were discussed for practical application and further research directions. Specifically, the findings underscored the importance of considering both SSRL interactions and emotional arousal in collaborative learning environments.
Xiaoshan HUANG Co-Authors: Haolun Wu Susanne Lajoie	Understanding hot and cold psychological themes in social annotation using machine learning	This study explores the linguistic features driving peer recognition and fostering reading engagement on an online social reading platform. The participants comprised 91 undergraduates from a large North American University. Utilizing log file data and machine learning techniques, we identified psychological linguistic themes related to peer acknowledgment. Shapley values were employed to analyze 1,969 social annotation entries, identifying prominent psychological themes within three dimensions (i.e., emotion, cognition, and motivation) that facilitate peer acknowledgment in digital social annotation. These themes include positive affect, openness to learning and discussion, and expression of motivation. The findings assist educators in improving online learning communities and provide guidance to technology developers in designing effective prompts, drawing from both implicit psychological cues and explicit learning behaviors. Keywords: social annotation, peer acknowledgment, machine learning, psychological themes
Matthias HUBER & Christine JERABEK & Smirna MALKOC Co-Author: Silke Luttenberger	Teacher emotions, emotion regulation, and the experience of strain at the carrier entry	Whether the entry into the teaching profession is successful and perceived as a constructive experience for the further educational biography does not only depend on the skills and knowledge acquired during studies, but in particular on emotional and motivational factors during this intensive phase of professionalization. Nevertheless, there have been only few empirical studies dedicated to the emotional experience of career starters taking into account their different starting conditions so far. Therefore, the present study examines the significance of emotions, emotion regulation and the associated experience of strain by teachers during their career entry. For this purpose, 785 Austrian primary and secondary school teachers completed a questionnaire three months after starting the teaching profession (n=785). In addition to established scales for emotion regulation (ERQ), teacher emotions (TES), self-efficacy (ASKU) and the experience of strain (STR) of teachers, a new scale for recording the frequency and intensity of 17 discrete emotions during teaching (TEM-17) was used for the first time. The data collected was then

		<p>analyzed using various statistical methods (descriptive statistics, confirmatory factor analysis, bivariate correlations of variables and subscales, multivariate analysis of variance). First results not only show differences between the four different groups of career starters, but also draw attention to the connection between emotion regulation, the experience of strain and self-efficacy as well as the importance of specific teacher emotions depending on the emotion regulation strategies used during the entry into the teaching profession.</p>
<p>Aleksandra HUIC Co-Authors: Antonija Vrdoljak Nina Pavlin-Bernardic Vesna Vlahovic-Stetic</p>	<p>Teachers' (de)motivating styles and agentic (dis)engagement in higher education</p>	<p>In two studies, in the context of higher education, we examine assumptions from self-determination theory and the agentic (dis)engagement model about the associations between teachers' (de)motivating styles and student engagement. In line with theoretical assumptions from the darker and brighter motivational pathways we expected that, from both the teachers and students' perspectives, motivating styles of autonomy support and structure will be associated with agentic engagement, while demotivating styles of control and chaos will be associated with agentic disengagement. A total of 104 Croatian higher education teachers participated in a first online study. A total of 301 Croatian higher education students participated in a second online study. Both students and teachers filled out questionnaires reporting on own or perception of others (de)motivating styles according to the circumplex model (Situations-in-Schools Questionnaire – Higher Education) and agentic engagement and disengagement, focusing on a specific class and teacher/group of students. Results confirmed the positive role autonomy supportive teaching style plays for student engagement in both the student and teacher sample. However, not in line with theoretical assumptions of the bright and dark pathway, teachers' autonomy support was also negatively associated with students' agentic disengagement. Other (de)motivating styles were mostly not associated with either agentic engagement or disengagement, except for students' perception of their teachers' chaotic style being positively associated with agentic disengagement. Results are discussed in terms of practical and methodological implications.</p>

J

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Joost JANSEN IN DE WAL</p> <p>Co-Authors: Thijmen Van Alphen Jaap Schuitema Thea Peetsma</p>	<p>Teachers' stress and resilience: Cross-lagged relationships from lesson to lesson</p>	<p>This study aims to investigate the (cross)lagged relationships between teachers' stress and different aspects of resilience from period to period (i.e., class hours). Teachers' stress is conceptualized by focusing on a particular emotional stress response; anxiety. Teachers' resilience is approached as 1) teachers' situational, future oriented beliefs of being resilient and 2) their actual experienced stress recovery (i.e., having bounced back). Seven teachers participated in a diary study and filled out questionnaires each period they were at work over the course of ten workdays. The total number of questionnaires was 268. Data were analyzed through dynamic structural equation modelling. Results show that experienced stress recovery does not predict subsequent stress. However, subsequent stress is negatively predicted by previous resilience beliefs and the interaction between stress and resilience beliefs. Finally, despite the finding that experienced stress recovery does not directly influence subsequent stress experiences in teachers, it does positively influence subsequent resilience beliefs. Reversely, resilience beliefs for the next period also positively predict stress recovery after that period. This study provides a strong indication of a negative causal effect of believing to be resilient, in combination with previous stress, on subsequent stress. As such, for practice, it suggests that interventions should target teachers' resilience beliefs to reduce their stress experiences. Theoretically, resilience is shown to have different components that may influence each other, and have differential effects on stress. As such, conceptualizations should move toward different temporal manifestations of resilience.</p>
<p>Henriikka JUNTUNEN</p> <p>Co-Authors: Heta Tuominen Markku Niemivirta Jaana Viljaranta Lars-Erik Malmberg Auli Toom Eija Räikkönen</p>	<p>University students' situational motivation over a statistics course and relations to anxiety</p>	<p>Utilising an intensive longitudinal design and multilevel structural equation modelling approach, we investigated the variability of Finnish university students' situational motivation (expectancy-value-cost) and statistics anxiety during a statistics course, and how the situational motivational appraisals predict statistics anxiety on three levels: situation, topic, and individual. The results showed variability in motivation and anxiety on all levels, but the largest proportion of variability was on the individual level, particularly for statistics anxiety, followed by situation level. On all three levels, we identified a positive association between costs and statistics</p>

		<p>anxiety. On a situation level, values were negatively associated with anxiety. Expectancies were negatively associated with anxiety on both topic and individual levels.</p> <p>The findings highlight the importance of examining students' in-the-moment motivation and anxiety for a more in-depth understanding of the diverse contextual, subject-specific, and individual differences that influence students' multifaceted motivation and of the relations between motivation and statistics anxiety.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Haya KAPLAN</p> <p>Co-Authors: Vardit Israel Haled Al-sayed Huwaida Alatawna -Alhoashle</p>	<p>"Autonomy-Supportive Mentoring": Mentoring from the perspective of Self-Determination Theory</p>	<p>The study examines the impact of Autonomy Supportive Mentoring, a new mentoring model that encompasses both the training course for mentor teachers and their practical mentoring of beginning teachers (BTs). The model has been developed within an international project of the European Union called Promentors. Based on self-determination theory, the model seeks to support the psychological needs of both mentor teachers and BTs and to cultivate autonomous motivation for mentoring and teaching. The two-year long qualitative phenomenological study used semi-structured interviews. The participants were 13 Bedouin mentor-teacher pairs and five policymakers. The results indicate that the course trainees experienced need-satisfaction, changed their mentoring paradigm, and enhanced their mentoring motivation. In a parallel process, they supported the needs of the BTs, who in turn reported need-satisfaction and various positive outcomes. The study points to the effectiveness of the model and to its applicability in a collectivist population.</p>
<p>Alexandra KATSIKI & Alexander MINNAERT</p> <p>Co-Author: Fotini Polychroni</p>	<p>Students' math performance and social-emotional factors in school: An in-depth multiple case study</p>	<p>There is ample evidence from both educational practice and literature that mathematics performance is frequently related to high levels of negative and unhealthy academic emotions. To tap into the unique and real voice of each adolescent student, this qualitative study uses an in-depth approach to know more about students' motivational, cognitive, emotional and behavioral aspects and how they are related to math performance. This study uses the binary model of Rational Emotive Behavior Therapy (REBT) theory, which supports that students' healthy emotions originate from rational beliefs and are associated with adaptive behaviors, while unhealthy emotions originate from irrational beliefs and are associated with maladaptive behaviors. Six Greek adolescent students from middle school and high school were interviewed and shared information about their emotions, motivation and thoughts about the lesson of mathematics, about the ways they coped with math obstacles and how they perceived social support. A thematic analysis was conducted which resulted in the creation of three student profiles of motivational, cognitive, emotional and behavioral aspects in relation to mathematics performance. Students' profiles are discussed on the crucial importance of REBT theory as a form of social-emotional learning method that promotes students' motivation and</p>

		<p>math performance through the modification of students' problematic evaluations. Finally, we stress the creation and adaptation of social-emotional practices based on REBT theory in order to help students with their specific educational needs to increase their motivation.</p>
<p>Idit KATZ Co-Authors: Dikla Algov Savyon Savhat</p>	<p>The role of gender in student perceptions of teacher supportiveness and its impact on motivation</p>	<p>Introduction: Building on the theoretical framework of Self-Determination Theory (SDT; Ryan & Deci, 2020), this study aimed to elucidate how teachers' observed supportive and obstructive behaviors and students' perceptions of these behaviors affect the motivation to learn among male and female students. Method: The research involved twenty-nine teachers and 776 students (382 boys and 394 girls) in grades 3-6 from six state schools in X. Teachers underwent videotaped observation during a lesson, and their interactions were meticulously coded for need-supportive or thwarting behaviors towards each gender. Students completed questionnaires and reported their motivation to learn and perceptions of their teacher's supportive and obstructive behaviors. Results: T-test comparisons and a Multilevel Modeling analysis (MLM) were conducted. The results revealed a positive association between boys' and girls' perceptions of their teacher as need-supportive and their motivation to learn. Conversely, perceiving the Teacher as obstructive was negatively linked to motivation. Although teachers were observed to conduct more supportive and obstructive behavior towards boys, girls perceived their teachers as more supportive and less obstructive, aligning with higher self-reported motivation among female students. Notably, no association emerged between teachers' actual behavior and students' motivation, implying that students' perception of their teacher's behavior, rather than the behavior itself, is linked with learning motivation. Discussion: The results underscore the importance of comprehending students' gender-specific perceptions and emphasize teachers' need to be mindful of these distinctions to cultivate a motivating learning atmosphere.</p>
<p>Idit KATZ Co-Author: Adi Arden</p>	<p>Self-Determination Theory perspective on maternal need satisfaction and child emotional development</p>	<p>This study delves into the concept of "good motherhood" through the lens of Self-Determination Theory, focusing on the crucial role of mothers' psychological needs in shaping maternal behaviors and their impact on the emotional development of children. Utilizing a sample of 86 kindergarten student-mother dyads, the research investigates whether mothers' satisfaction or frustration of psychological needs is associated with their children's development of autonomous resources—authenticity, creativity, and agentic engagement and examines the mediating effects of mothers' supportive or thwarting behaviors and identity styles. Structural equation modeling reveals two distinct pathways: bright and dark. In the "bright pathway," maternal need satisfaction, mediated by a high commitment to identity, fosters structuring behaviors, enhancing children's autonomous resources. In the "dark path," maternal need frustration is associated with chaotic maternal behaviors, mediated by a</p>

		diffuse-avoidant identity style, impeding the development of these resources. The findings challenge traditional notions of motherhood, suggesting that for young children, adequate emotional support and the development of children's autonomy are linked to mothers' stable and normative roles rather than exploratory behaviors. This research underscores the variability in the definition of good motherhood across different developmental stages, calling for a nuanced understanding of the maternal influence on child development.
Inbar KATZ VAGO Co-Author: Moti Benita	Achievement goals and daily personal goal pursuit	Achievement goals are typically measured as trait-like abstract goals. However, in their daily academic pursuits, students pursue more concrete goals. The pursuit of these goals is replete with obstacles that can lead to an action crisis. We examined how mastery-approach and performance-approach goals affect progress, effort, and well-being during academic goal pursuit. We also asked whether these goals moderated relations between an action crisis and goal pursuit. Students were 154 Israeli students (average age=23.59 years, SD=2.17; 62% female) preparing for an exam. In this daily diary study, participants first reported the date of their most stressful exam, two related goals, and their trait-like achievement goals (mastery-approach, performance-approach). They then completed daily questionnaires assessing their progress, effort, well-being, and action crisis on the ten days leading up to the exam. Multilevel modeling showed mastery-approach goals positively predicted goal effort and progress and negatively predicted action crises, while performance-approach goals positively predicted negative affect and action crises. The more students endorsed performance-approach goals, the stronger the negative relationship was between action crisis and next-day goal progress. An action crisis was also negatively correlated with next-day positive affect among students with above-average levels of performance-approach goals. Finally, for students high on mastery-approach goals, an action crisis was unrelated to negative affect on the same day. The results suggest that different trait-like achievement goals can be mapped onto a common personal goal and affect its pursuit differently. Mastery-approach goals predict optimal goal pursuit, and performance-approach goals are associated with non-optimal goal pursuit.
Lena Sofie KEGEL Co-Authors: Lucas Wloch Carola Grunschel	Between-person differences and within-person variability of momentary academic self-concept	For decades, researchers have assumed students' academic self-concept to be a stable construct (e.g., Bong & Skaalvik, 2003). But insights from intensive longitudinal studies in schools showed that academic self-concept can vary from moment to moment (Tsai et al., 2008) and that personal characteristics explain how consistent or variable students' momentary academic self-concept is (Hausen et al., 2022). An important personal characteristic for momentary academic self-concept might be the attitude of students in the light of setbacks and personal failures – known as self-compassion (Neff, 2003). In the present research, we aimed to

		<p>examine within-person variability of momentary academic self-concept and its potential predictor self-compassion in two experience-sampling studies in higher education. In Study 1 (N1 = 64), we found that students significantly differed in their mean level of momentary academic self-concept and how consistent they reported their momentary academic self-concept. Self-compassion was positively associated with mean level and negatively with intraindividual variability of momentary academic self-concept. Therefore, self-compassion can be understood as a protective factor for a high and consistent momentary academic self-concept. Study 2 is currently being conducted and aims to test the findings in a larger sample and under control of Big Five personality traits. Such insights into within-person variability hold the potential to better understand the formation of academic self-concept and to identify intervention approaches for strengthening higher education students' academic self-concept.</p>
<p>Elina E. KETONEN Co-Authors: Milla Kruskopf Kirsti Lonka</p>	<p>Students' epistemic emotions during gamified university course: A process-oriented approach</p>	<p>Triggering learners' emotions is seen as the major gain of game-based learning (Loderer et al., 2020). Further, accumulating evidence identifies epistemic emotions as drivers of effective learning (e.g., Muis et al., 2015). The present study examined political science students' (N=22) epistemic emotions and learning outcomes in a gamified university course designed around a classical strategy game Diplomacy. Students' epistemic emotions (i.e., emotions related to the knowledge-related aspects of learning) were measured repeatedly after every course session and analysed with dynamic structural equation models (DSEM). The within-person analyses (N=212) revealed that compared to lectures, attending a game session increased all other epistemic emotions (curiosity, enjoyment, surprise, confusion, anxiety and frustration) besides boredom. Overall, curiosity, enjoyment, confusion and anxiety decreased and boredom increased during the course, whereas surprise and frustration stayed stationary. However, the individual differences in these trajectories indicated that students reporting decrease in anxiety, surprise and enjoyment gained better learning outcomes compared to those who showed a more stable trend. The findings suggest that students' epistemic emotions can be affected by instructional choices, such as gamification. Adding game features can trigger particularly positive, but also negative emotions among students. Those students who appeared to tolerate high-pressure and uncertainty by controlling their anxiety levels also achieved better test scores, whereas pure enjoyment of the game was not a sufficient premise for positive learning outcomes. The uniqueness of individual trajectories and temporal dynamics of epistemic emotions suggest that the conclusions based on the group-level findings may not be applicable to all individuals.</p>

<p>Triinu KILP-KABEL</p> <p>Co-Authors: Saku Määttä Jake McMullen Minna Hannula-Sormunen Kaja Mädamürk</p>	<p>Expectancy-value motivation profiles and their relation to distinct math skills</p>	<p>Math is all around us, however, people vary in how they focus on mathematical aspects in situations that are not clearly math-related and spontaneous focusing on quantitative is higher for students with better math skills. In the current study we aim to find how achievement motivation based on the expectancy-value theory relates to SFOR and other math skills to better understand the relationship between motivation, classroom math and spontaneous focusing tendencies. We will look at what type of motivation profiles emerge, and how the motivation profiles relate to math skills, SFOR, and to the guided use of quantitative relations. The participants were Estonian Grade five students from 12 schools (N = 335, 51% female, Mage = 11,58 years). The assessment took place during regular school hours via computer-based tests in the 2021/2022 school year. A questionnaire about achievement motivation included self-efficacy, attainment value, utility value, interest, and effort cost. Math skills were assessed by calculation and conversion tasks (procedural skills), multi-step regular word problem tasks, and novel real life word problems. SFOR was assessed by four task items, each of which had a corresponding guided focusing task. The results indicated that there are four distinct profiles of motivation. The high motivation group differed from the other profiles in all except the SFOR score. The complex and average profiles also differed from each other in all except the SFOR and guided use scores. Thus, students may have differing motivation profiles with significant differences in different math skills based on those profiles.</p>
<p>Kyung Min KIM</p> <p>Co-Authors: Yoonah Park Mimi Bong</p>	<p>Adolescent achievement goal profiles and their relationships with predictors and outcomes</p>	<p>The present study examined (a) achievement goal profiles that Korean adolescents endorse during two semesters, (b) individual and contextual antecedents of students' profile membership, and (c) consequences of the profiles. Two separate samples of Korean middle school students participated in each semester. Latent profile analyses revealed three profiles (high mastery and performance-approach goals, high performance-approach and performance-avoidance goals, and low levels of all goals) in the first semester and four profiles (additionally moderate levels of all goals) in the second semester. Self-efficacy, test anxiety, classroom goal structures, parent achievement goals, and peer achievement goals, but not theories of intelligences, were significant predictors of profile membership. Investigation of the outcomes of profile membership demonstrated adaptive functions of the profile with high mastery and performance-approach goals and maladaptive nature of the profile with moderate levels of goals. The profile with high performance-approach and performance-avoidance goals showed mixed consequences. Findings are discussed in the light of prior research and Korean culture.</p>
<p>Sungwha KIM</p> <p>Co-Authors:</p>	<p>Parental mindsets as determinants of children's achievement goals and performance in math</p>	<p>Parents communicate their beliefs about the nature of ability, or mindsets, to their children through their words and behaviors. While parental mindsets have received growing attention during the recent years, their role in student outcomes,</p>

<p>Hyun Ji Lee Mimi Bong</p>		<p>particularly achievement goals, has been relatively underexplored. Moreover, most previous studies have assessed parents' mindsets as either self-reported by parents or perceived by students alone, making it challenging to establish a comprehensive understanding of their role. Yet, how children perceive their parents' mindsets may not always align with the mindsets parents actually hold, and one may play a more significant role in shaping students' motivation and achievement than the other. Using the data from 507 third and fourth grade students and their parents in Korea, we examined how parental mindsets, self-reported and student-perceived, predicted students' achievement goals, persistence, and achievement in mathematics. Parental growth mindset was found to be a positive and significant predictor of students' mastery goals. Parental fixed mindset, in comparison, negatively predicted students' mastery goals and positively predicted students' ability and normative performance goals. Students' mastery goals, in turn, positively predicted their math persistence and achievement. The indirect paths from parents' mindsets to students' persistence and achievement via students' mastery goals were statistically significant. Compared to the self-reported parental mindsets, the student-perceived parental mindsets generally exhibited a stronger predictive power. The underexplored role of parents' mindsets is discussed in relation to students' achievement goals and learning.</p>
<p>Rachel KIRZNER</p>	<p>Self-Determination Theory, group norms, and participation in difficult classroom conversations</p>	<p>We are currently experiencing an era of increased polarization and decreased civility. Classroom conversations on controversial topics are one way of increasing students' skills in civil discourse, a necessary feature of healthy democracies. However, these classroom conversations can be especially challenging for instructors to facilitate. Peer-developed group norms are one approach to enhancing the motivation and ability of students to participate in civil discourse in the classroom, with self-determination theory (SDT) serving as the theoretical framework. SDT posits that meeting the basic psychological needs of autonomy, competence, and relatedness will increase motivation to complete tasks, and by extension lead to human flourishing. The pedagogical technique of peer-developed group norms supports autonomy by enabling students to develop their own guidelines for class discussions, and supports relatedness by using a group process in norm development. The norms, once developed, provide students with guidelines for effective participation and thus support perceptions of competence. A pilot study implemented in a bachelor's level university course on neighborhood inequalities supports the efficacy of student-developed group norms in supporting autonomy, competence, and relatedness. Students stated that they preferred developing the norms themselves (autonomy), that the norms had a positive impact on their ability (competence) to listen more openly, and that they felt more connected to their classmates</p>

		(relatedness) through the norm-development process. Grounded in SDT, peer-developed group norms appear to be a promising approach for supporting students in participating in difficult classroom conversations.
<p>Kerstin KISIELSKI Co-Authors: Pauline Voigt Susanne Narciss</p>	<p>Measuring achievement motivation: A systematic review of expectancy-value questionnaires</p>	<p>A thorough assessment of students' motivation is a pivotal initial phase in order to optimize their learning and academic performance. The expectancy-value theory (EVT), offering a comprehensive framework, that underscores both comprehensiveness and situational specificity in understanding motivational factors, serves as a well-founded basis for developing questionnaires tailored to capturing the diverse and context-dependent nature of student motivation.</p> <p>This systematic review aims to fill a gap in the literature by critically appraising and summarizing self-report questionnaires rooted in EVT. The research questions focus on the multidimensional nature of motivation, the situation-specificity of questionnaires, and the evidence of validity and reliability. The search, following PRISMA guidelines, identified 174 articles meeting eligibility criteria. A comprehensive coding scheme was developed for data extraction, addressing each research question. Preliminary findings from 93 studies indicate that out of 77 coded instruments, only 21 incorporate scales covering expectancy, value, and cost components. The review also reveals insights into the evidence on validity and reliability, with a significant number of studies reporting evidence on internal structure and relations to other variables. This ongoing review provides valuable information on existing EVT questionnaires, assisting educational researchers in selecting appropriate measures for their specific purposes.</p>
<p>Eva KNEKTA Co-Authors: Anders Hofverberg Hanna Eklöf</p>	<p>Challenging assumptions about vocational students' motivation</p>	<p>Although there is a discourse among politicians, school leaders, and teachers that students in vocational education and training (VET) programmes in upper secondary school are less motivated than students in higher education preparatory (HEP) programmes there are few large-scale studies comparing differences and similarities within and between these two groups of students. The aim of this study was to investigate and problematize differences in goal orientation and subject specific interest between students entering VET and HEP programmes. The study is based on questionnaire responses from 4262 students in last year of lower secondary school and administrative data on which upper secondary school program these students graduated from. Initial analysis showed that, as a group, students later entering VET programmes embrace motivational goals to a lesser extent and found most subjects less interesting than students later entering HEP programmes. However more nuanced analysis gave reasons to problematize the colloquial meaning of motivation and to the question the dichotomic division of programmes into VET and HEP.</p>

<p>Maximilian KNOGLER</p> <p>Co-Authors: Ricardo Böheim Annika Diery Judith Harackiewicz Tina Seidel</p>	<p>Promoting positive beliefs towards evidence: A utility-value intervention with preservice teachers</p>	<p>Preservice teachers often question the relevance of educational evidence for professional practice. Yet, according to expectancy-value theory, the extent to which preservice teachers consider educational evidence relevant for their teaching practice (i.e. utility-value) is a critical variable in promoting evidence-based practice in education. To further promote utility-value of research evidence among preservice teachers, the present study investigated the added value of a brief and easy-to-implement intervention that stimulates students to reflect on the utility-value of research evidence. The sample consisted of 3rd semester teacher students (n = 61) enrolled in a semester-long course on effective teaching who were randomly assigned to two conditions. In the first condition (default course design), teacher educators used two typically applied strategies for promoting utility-value, i.e. direct communication of utility-value and application tasks, in which students can discover utility-value. In the second condition (enhanced course design), students were additionally stimulated to reflect on the utility-value in two written assignments. Their value perceptions and related variables were measured at the beginning, during and at the end of the semester. Although a mixed model MANOVA did not yield a statistically significant group-by-time interaction effect, follow-up t-tests revealed a substantial and significant increase in students value perceptions in the enhanced course design, but not in the default course design. Overall, this study offers some limited support for the additional value of reflective writing assignments for fostering preservice teachers' positive beliefs toward research evidence in education.</p>
<p>Machiko KOBORI</p>	<p>A study of L2 Instrumentality of primary EFL pupils during the transition period in Japan</p>	<p>This study explores Japanese primary pupils' motivation to learn English as a Foreign Language (EFL) during the transition period from primary to secondary education. It particularly focuses on their notion of second language (L2) Instrumentality and attempts conceptual pairing of the L2 motivational framework to explore significant aspects of their EFL learning. It utilises classic and modern conceptual frameworks of L2 motivation: the Socio-Educational model and the L2 Motivational Self System. Data were gathered using a survey questionnaire at three state primary schools in two prefectures in Japan, Tokyo and Gunma, which are known as contextually different: Tokyo is well-known as the capital of Japan, while Gunma is situated about 100km away from central Tokyo. The sample comprised 197 learners (aged 11–12 years) in their final year of primary education in these three schools: Tokyo (1) and Gunma (2). Factor analysis, t-tests and one-way ANOVA were used for data analysis, mainly based on a cross-sectional approach. Results showed that Japanese primary EFL pupils held an explicit notion of L2 Instrumentality during the transition period from primary to secondary education. Moreover, internal constructs of L2 Instrumentality, Instrumentality prevention and promotion, were substantiated distinctively among them. Regarding the teacher variables to</p>

		<p>teach EFL, the English teacher's role was also indicated as significant within the context of their L2 Instrumentality prevention during their transition period from primary to secondary EFL.</p>
<p>Hanke KORPERSHOEK Co-Authors: Merlijn Karssen Annet Hermans Regina Pétit</p>	<p>Career guidance in secondary education: Supporting students' career development</p>	<p>In career guidance at school, orientation to subsequent education and vocational orientation should come together. Career-oriented activities at school often include activities in which students' discover their interests, capacities and motives to continue their educational career in a certain domain (e.g., health care, technology), and can have a positive effect on adolescents' career development. In this study, focusing on prevocational secondary school students, we evaluated the effects of career guidance activities on their career development. The research questions were: (1) What are the effects of career orientation and career guidance activities on students' study choice self-efficacy, study choice certainty, and normative beliefs? (2) To what extent do these effects vary across gender, migration background, and socioeconomic background? Eight pre-vocational secondary schools implemented a wide variety of career orientation and career guidance activities in their schools. In a pretest-posttest design, we evaluated the differences in student outcomes measured at the beginning and at the end of the school year. In total, about 350 students participated. The results revealed (despite the limitation that direct of effects of the career activities on student outcomes could not be evaluated) that students with a migration background need more support in the career decision process, supporting their self-efficacy in selecting a study program that fits their interests, capacities and motives, as their study choice self-efficacy decreased rather than increased from the beginning to the end of the school year.</p>
<p>Anne KOSUBEK Co-Authors: Hanna Gaspard Cora Parrisius Ann-Kathrin Jaekel Richard Goellner</p>	<p>Empowering education: How teacher motivation fuels student motivation via teaching quality</p>	<p>Teacher motivation is typically expected to be related to teaching quality, which in turn is related to student motivation. However, previous research shows inconsistent results with regard to transmission of motivation via teaching quality and is primarily based on cross-sectional studies in the subjects of mathematics or science. In addition, previous studies were mostly limited to the examination of one grade level. Therefore, in the present study, we investigated the extent to which teacher motivation is transmitted to student motivation via students' perception of the three basic dimensions of teaching quality in grade levels 5 to 9. Furthermore, we extend previous research by a comparison of mathematics and German language arts class. We used longitudinal data comprising two time points with an interval of one school year from 56 teachers and 1,105 students in mathematics and 48 teachers and 895 students in German language arts from grades 5 to 9 at German secondary schools. Teachers reported their self-efficacy and enthusiasm for teaching. Students reported their perceptions of teaching quality (classroom management, supportive climate, cognitive activation) for the respective teacher</p>

		and their own motivation (ability self-concept, intrinsic value) in each subject. Cross-level mediation analyses revealed multiple cross-level indirect effects for the transmission of teachers' self-efficacy and enthusiasm for teaching to students' self-concept and intrinsic value via their perceived classroom management and cognitive activation. In contrast, we found no support of longitudinal links via supportive climate. Notably, similar patterns of results were found for mathematics and German language arts.
Katie KUMASAKA	Higher education students finding flow online	In an era of increasing digital education, the rapid growth of students enrolling in online courses in higher education has been accompanied by issues and challenges concerning students' motivation and engagement while learning in this mode. Investigation of the positive and successful learning experiences of students in these environments can assist in shedding light on how to enhance online learning environments and improve student experience. Through the application of flow theory (Csikszentmihalyi, 2008) in a hermeneutic phenomenological approach, the study delved deeply into the intricacies of online students experiencing the phenomenon of optimal enjoyment or flow. Data from 54 Australian university students were collected through questionnaires, interviews and journaling with Interpretive Phenomenological Analysis (Smith et al., 2022) framing interpretation of findings. Key findings revealed that flow is influenced by authentic real-world tasks, and students with greater education self-efficacy are better positioned to experience flow. A significant contribution of this research is the Hermeneutic Star Framework developed by the researcher, utilised for interpretive understanding, which may assist researchers as a resource when conducting phenomenological studies. The study also offers insights for online designers, educators and students about how to optimise learning experiences. The unique, reflective and human sensitive methodology to explore flow encouraged a richer understanding of the hidden experiences of flow and the significance of its meaning in the context of online learning.
Anna KUUSI Co-Authors: Heta Tuominen Markku Niemivirta	Perfectionistic profiles, academic well-being, and perceived support in upper secondary education	Perfectionism is characterised by a combination of two individual tendencies: perfectionistic strivings and concerns. Group-based studies have identified meaningful perfectionistic profiles with differences in relation to well-being. However, studies examining perfectionistic profiles among upper secondary education students, and how they link with academic well-being and perceived support for well-being are still scarce. The first aim of this study was to investigate Finnish general upper secondary school students' (N = 664, girls = 47,3 %) perfectionistic profiles. We also investigated how profiles were linked with academic well-being (i.e., school engagement and burnout) and perceived support for well-being from school personnel and family. By using latent profile analyses (LPA), four distinct perfectionistic profiles were identified: ambitious (27,1 %), non-perfectionists (26,7

		<p>%), concerned (24,7 %), and perfectionists (21,5 %). Regarding profile differences, perfectionists and ambitious were the most engaged in their studies. Perfectionists and concerned expressed the most emotional and cognitive impairment, and exhaustion, while concerned reported the most mental distance. Interestingly, especially perfectionists reported not receiving enough support for their well-being from school personnel and family. The findings add to our understanding of the associations between students' perfectionistic tendencies, academic well-being, and perceived support, and thus provide some insight on how to best support students' well-being in schools.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Jeroen LAVRIJSEN Co-Authors: Eline Camerman Peter Kuppens Karine Verschueren</p>	<p>Need for Cognition as a moderator of associations between class difficulty and students' engagement</p>	<p>When confronted with challenging schoolwork, some students flourish, whereas others disengage. Why do students respond so differently to difficult classes? In this study, we examined the possibility that the intellectual investment trait of Need for Cognition, as the individual tendency to actively seek and enjoy cognitive effort, explains individual differences in engagement with challenging course content in math classes. We tested this proposal in an Experience Sampling Method (ESM) study in which 414 students (Mage = 16.2 years; 238 females) repeatedly reported, during real-life mathematics classes, the perceived level of difficulty of the class and five aspects of their engagement (i.e., enjoyment, interest, concentration, active participation and boredom). A negative quadratic association (inverse U-shape) between perceived difficulty and student engagement was observed, with student engagement particularly lower when students perceived classes to be very difficult. Students' math-specific Need for Cognition was found to substantially moderate this association. In particular, students with high Need for Cognition responded more favorably to challenging classes than students with low Need for Cognition. Hence, Need for Cognition particularly contributed to higher student engagement when students perceived classes to be very difficult. Overall, patterns were observed both at the between-student and the within-student level. These findings highlight differences between students in how class difficulty predicts student engagement and underscores the importance of Need for Cognition for students' motivational development.</p>
<p>Marja-Kristiina LERKKANEN Co-Author: Eija Pakarinen</p>	<p>Motivation promotes reading skills among Finnish primary school children in the COVID-19 pandemics</p>	<p>The study aims to investigate the role of motivation in reading skill development among a COVID sample of Finnish children who were in Grade 3 when the pandemic began in spring 2020. Their reading test scores were compared across Grades 2 and 4 with the pre-pandemic assessments of a pre-COVID sample. The COVID sample was assessed before (n = 198, 50.7% girls) and after the school closure due to the COVID-19 (n = 130; 55.4% girls). Also, the pre-COVID sample was assessed in Grade 2 (n = 377, 47.9% girls) and in Grade 4 (n = 346, 47.5% girls). In both samples, reading fluency and reading comprehension were assessed and their interest in reading and self-concept of ability in reading were measured.</p>

		<p>Child's gender, age, and parental level of education were controlled. The sample comparisons showed that children's reading fluency and comprehension were higher in the pre-COVID sample compared to the COVID sample at both time points (Grades 2 and 4). The results showed further that motivational factors were related to reading skills of children at Grade 4 only in the COVID sample and self-concept of ability in reading in Grade 2 predicted reading fluency in Grade 4 only in the COVID sample. The results suggest that motivation may play an important factor in protecting children from learning loss due to the distance learning caused by COVID-19.</p>
<p>Sasha LI Co-Authors: Nikki Lobczowski Krista Muis</p>	<p>Antecedents and resolution of confusion in self-regulated math problem-solving: A qualitative study</p>	<p>Confusion, a common emotional response to cognitive disequilibrium, exerts a complex impact on learning experiences and outcomes. The ability to resolve confusion has significant implications for students' engagement and motivation, as well as their academic performance. However, little research has been conducted to better understand the dynamic process of confusion and its resolution. The purpose of this study is to add insight into the antecedents of confusion and the strategies learners employ to resolve confusion. Using a qualitative exploratory design, we analyzed think-aloud protocols from 20 elementary students who reported being highly confused on a retrospective emotion scale during complex mathematics problem-solving. This sample was drawn from a larger group of 138 students, in which think-alouds were used to capture self-regulatory processes and confusion while problem-solving. The data were coded through three stages: regulatory processes, confusion, and antecedents. A thematic analysis revealed four antecedents of confusion: information comprehension difficulty, problem analysis failure, conceptualization challenge, and solution discrepancy. Each antecedent can cause cognitive disequilibrium, resulting in confusion, during different phases of self-regulated learning (SRL). When confused, learners would engage in SRL strategies to identify and resolve the sources of confusion to proceed with the problem. However, most learners failed to resolve their own confusion; via help seeking, students required scaffolding from an adult to resolve their confusion. Ultimately, results from this study can inform the development of targeted interventions and practices that empower learners to successfully resolve confusion and maximize learning outcomes.</p>
<p>Xin LIU</p>	<p>Dynamics of gender, mathematics identity and achievement: The role of teacher professional knowledge</p>	<p>Drawing upon from Vygotsky's Sociocultural Theory, the current study investigates the relationship between gender, mathematics identity, mathematics achievement, and teacher professional knowledge. A multilevel analysis was applied in Finland, Norway, and Sweden. The results show that students with a strong sense of identification with mathematics is associated with better academic achievements, which can be affected by factors such as gender, grade level, and educational settings.</p>

		The research emphasises the importance of teachers' mathematics knowledge in mathematics pedagogy and technology for enhancing student performance. Although pedagogical knowledge, contextual knowledge, and counselling knowledge may not have a direct impact on achievement, they play a crucial role in reducing gender inequalities in mathematics. The findings suggest incorporating gender-sensitive modules in teacher training programmes to foster inclusive mathematics education and help teachers address their biases and expectations about gender and mathematics. This approach is vital for enhancing mathematics education quality and minimizing gender disparities.
Nikki LOBCZOWSKI Co-Authors: Meiting Chen Xiaoshan Huang Shasha Li Hongwei Xie	Socioemotional experiences during collaborate learning: A systematic review	Classroom teachers are moving away from traditional teaching practices and beginning to adopt student-centered pedagogies such as collaborative learning, which can bring its own set of unique challenges. Groups of students may experience a wide range of emotions stemming from various collaborative components. To overcome these challenges, students will need to regulate to optimize their learning. Most of the research in this domain has focused on individual regulation and rarely has emphasized emotions. In this review, we highlight the issues and processes that influence the emergence of emotions in collaborative settings and discuss the corresponding socioemotional regulation strategies. Overall, four key areas are explored: (a) the factors that influence the formation of socioemotional challenges, (b) the strategies that students use to regulate their emotions in collaborative settings, (c) how these socioemotional experiences differ based on contextual factors, and (d) methods for researchers and teachers to help students overcome (or avoid) socioemotional challenges. Our findings connect socioemotional challenges to specific regulation strategies, while considering how the context influences each. As such, we provide clear guidance for educators to help student groups in various learning environments address collaborative challenges.
Sina LUDWIG Co-Authors: Melanie Sticha Martin Mayerhofer Manfred Prenzel Barbara Schober Marko Lüftenegger	Balancing demands and resources: Teachers' emotions, strain, and well-being in disadvantaged schools	When attempting to gain a comprehensive insight into teachers' everyday work, job demands and job-related resources are important predictive factors for teachers' occupational well-being, emotional experience, and experience of strain. Further relevant factors to include are personal resources such as teachers' self-efficacy. Linking these aspects with various outcomes was the aim of this study, with a particular focus on teachers in disadvantaged schools. More specifically, this study investigated whether teacher-reported job demands, job-related resources, and self-efficacy are associated with teachers' work-related emotions (i.e., joy, anger, and anxiety), their experienced strain, and their sense of identification with the school. The sample included 1757 teachers from 100 disadvantaged schools in Austria surveyed about their daily work life. In order to investigate the postulated associations, a latent SEM was conducted based on the assumptions of the Job

		<p>Demands-Resources Model. The results showed significant connections between job demands and all positive and negative teacher outcomes. Teacher self-efficacy was also consistently significantly related to the outcomes. A more ambiguous picture emerged for job-related resources in that various resources were significantly associated with differing outcomes. The results indicate that job demands and the personal resource of self-efficacy might play a steadier part in teachers' emotional and strain experience as well as their sense of identification in disadvantaged schools than job-related resources do.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Stefan MARKUS Co-Authors: Cornelia Gar Katrin Lohrmann Michaela Gläser-Zikuda</p>	<p>Students' interpersonal emotions towards teachers and the relevance of teachers' basic need support</p>	<p>Caring relationships, as outlined by Self-Determination Theory and the Ethics of Care, are characterized by support for basic psychological needs. Within the school context, teachers significantly influence students' satisfaction of these needs for competence, autonomy, and relatedness through their attitude (engrossment; e.g., interest in the other) and action (e.g., assistance). Therefore, the teacher-student relationship impacts emotional experiences through relational effects. While most of the existing research focuses on achievement emotions, our study aims to explore a broader spectrum of emotions experienced in school, particularly students' interpersonal emotions towards their teacher. These emotions encompass a range of feelings such as affection, admiration, gratitude, envy, contempt, anger, and anxiety, which arise in response to social interactions in the educational context. The aim of our research is to investigate the relation of students' perceived teacher support for basic psychological needs and students' interpersonal emotions. Utilizing a cross-sectional design, we surveyed 1781 German secondary students based on standardized instruments. In line with our assumptions, we found strong positive correlations between perceived teacher support and students' positive interpersonal emotions, and negative associations with negative interpersonal emotions. Correlations were higher for interpersonal emotions than for achievement emotions, with the strongest associations found for relatedness support. These findings underscore the importance of nurturing teacher-student relationships to foster a range of positive interpersonal emotions elicited by the teacher. Additionally, our study highlights the need for further exploration into interpersonal emotions in educational settings.</p>
<p>Thomas MARTENS Co-Author: Moritz Niemann</p>	<p>Theoretical expansion for motivational regulation: Time frame and internalization</p>	<p>Motivational processes, especially within the framework of self-regulated learning were primarily investigated by questionnaire. New data sources can be triangulated to understand motivational processes much better, for example: eye tracking, physiological data or trace data. These advances in empirical data sources should be accompanied by theoretical expansion. So, this theoretical paper will expand motivational regulation two directions: (1) extending motivational time frame and (2) complementing engagement processes with internalization processes. Expanding</p>

		<p>of the time frame is especially necessary to understand data generated within a micro-level time frame, like physiological data. Capture of motivational internalization is important to connect data sources of different time frames. For expanding the time frame three different levels can be defined: A micro-level time frame describing direct learning processes that are associated with solving problems and resolution of confusion. These processes may last for seconds or minutes. A meso-level time frame reflecting processes that are described by most theories of self-regulated learning. These processes may last for minutes, hours, even days or weeks. A macro-level time frame comprising processes that develop over months or years usually covered by personality theories. The internalization processes can be defined as connection from micro-level to meso-level and finally to macro-level. They can be understood as complementary processes to models of self-regulated learning that typically describe engagement processes. Empirical examples from different studies will illustrate how to connect data from different time frames to better understand motivational internalization over different time frames, e.g., the impostor phenomenon in higher education.</p>
<p>Kaja MÄDAMÜRK Co-Authors: Gintautas Silinskas Eve Kikas</p>	<p>Motivation and worry profiles related to math skills before, during, and after the COVID-19 pandemic</p>	<p>The COVID-19 pandemic forced students and teachers into a unique and demanding learning environment worldwide. The current study aims to understand whether motivation to learn math and the level of academic worry were differently related to math exam results before, during, and after the pandemic. The study was carried out in the years 2018, 2019, 2021, and 2023 among 15-year-old students in the same 12 schools in Estonia. Students answered a questionnaire regarding their motivation and worry of learning math and few weeks later completed the national math exam. Latent profile analyses were used to explore the profiles combining math-specific task persistence, interest, self-efficacy, and worry in math classes. A striking difference between the profiles emerged regarding students' math exam results. Namely, during the pandemic (year 2021) only the group with high task persistence, interest, self-efficacy, and low worry managed to pass the math exam and get over 50% of correct answers (i.e., 77%). In other cohorts, before and after the pandemic, only the low motivation profile groups tended to get a result lower than or close to 50%. The results demonstrate the importance of having high motivation and low worry during extraordinary learning situations to succeed in math.</p>
<p>Bright Malema MBEYE Co-Authors: Chia-Wu Lin Hsin-Tien Ho</p>	<p>Enhancing self-perception of organizational behavior learning with improvisational interaction</p>	<p>This research enhances students' academic self-efficacy and self-awareness through improvisational interaction of drama teaching, which could bring them into the organizational context and advance their reflected best-self (RBS). The sample consists of 53 students enrolled in a bachelor's organizational behavior course at a National University in Taiwan. This study employs two alternative teaching methods: regular lecture in the first half and improvisational interaction of drama teaching</p>

		<p>in the second half of the organizational behavior class. For the evaluations of teaching effectiveness, quasi-experimental design with pre and post-tests and qualitative data were collected and analyzed. The findings revealed significant improvements (means difference between pre and post-test) in academic self-efficacy, self-monitoring, and inner self-awareness as a result of improvisational interaction of drama teaching. According to the results of regression analysis, differences between pre and post-tests of academic self-efficacy and input effort had considerable predictive power for final grades in this course. The qualitative analysis results show that students' responses to the course, both overall and in terms of process, are extremely positive. Students' self-reflections are divided into two categories: general and professional. General self-reflection is classified into three subcategories: past, present, and future, while professional reflections are divided into two subcategories: team-related and leaders-follower's relations. To summarize, improvisational engagement in drama education increases self-efficacy and self-awareness, as well as positive student assessments based on quantitative and qualitative data analysis.</p>
<p>Laura MCQUADE</p>	<p>Factors affecting secondary teacher wellbeing in England: Self-perceptions, policy and politics</p>	<p>After the challenges of the Covid-19 pandemic, the NEU (2021) report that one in three teachers plan to leave the profession in the next five years. As previous studies published by the DfE (2016, 2016a, 2016b and 2016c) focusing on workload have not affected the wastage rate of the profession, there is something deeper at work which needs to be explored. A critical theory, mixed method approach is used to gain a breadth and depth of understanding of the attitudes of 55 respondents to a survey and 17 participants in semi-structured interviews. All data collection was carried out in secondary schools in Lincolnshire, where teacher pay is good in comparison to the county average of workforce pay. These methods aim to test the assumption that concerns about workload and pay are causing teachers' discontent. The findings reveal that teacher attitudes towards their working lives are complex due to individuals trying to internalise the values of both traditional and new professionalisms. Due to this, teachers can appear contradictory in their demands and tolerance of the demands of the profession and themselves. The characteristics of neoliberal management including transactional leadership, competition and ambivalence to processes in favour of outcomes, do not match traditional professional values of dedication, expertise and working for the greater good.</p>
<p>Martijn MEETER Co-Authors: Meimei Liu TuongVan Vu</p>	<p>Do college students spend more time studying when assignments are interesting?</p>	<p>Over the last decades, many programs in higher education have moved away from a reliance on frontal lecturing, towards a system in which students work on problems introduced in small-group seminars. These assigned problems are designed to trigger students' interest and thus motivate them to study independently in between seminars. However, is triggered interest maintained while students work on</p>

Nienke van Atteveldt		<p>the problems, and does an interesting problem indeed result in more study time investment? To study this, we longitudinally followed three samples of students in problem-based courses. Students rated their interest in problems presented in the course both prospectively when a problem was presented (triggered interest), and retrospectively after having worked on it (maintained interest). They also reported the independent study time spent on the problem. We found that only maintained interest, measured retrospectively, correlated with independent study time, while triggered interest did not. We further found that an extrinsic factor, namely proximity to an exam, did affect students' time investment, independent of triggered or maintained interest in the problem. Across participants, however, there was a correlation between the average interest in the assigned problems and independent study. This suggests that any relation between interest in the problems and independent study may result more from individual differences between students (e.g., differences in intrinsic motivation or in self-control) than from an any strong influence of interest on the time invested in independent study.</p>
<p>Belinda MERKLE Co-Author: Oliver Dickhaeuser</p>	<p>Interest-major fit and disappointed expectations influence motivation, choice and success in a major</p>	<p>Wrong expectations about a field of study (major) are frequently named reasons for low study success. However, little research has examined how feedback on forecasts of interest-major-fit and disappointed expectations changes motivation, choice of major and subsequent study success (intrinsic motivation, satisfaction, emotions, achievement). Drawing from cognitive dissonance theory and expectancy-value theory, we assume that lower forecasted interest-major-fit and higher forecasted disappointed expectations predict changes in motivation for a major (lower expectancies for success and values, higher cost) and a lower likelihood for choice of this major. Based on the person-environment-fit theory, we propose higher study success for prospective students who received feedback regarding their forecast of interest-major-fit and disappointed expectations (compared to no feedback). We conducted a longitudinal study involving over 2000 prospective students who received feedback on their forecasts and participated in a survey about their motivations for a major both before and after receiving feedback. Subsequently, 597 of these prospective students entered the respective major and participated in a survey about their study success. Additionally, we surveyed 322 students who did not receive feedback on their forecasts before enrollment. As hypothesized, lower interest-major-fit-forecast and higher disappointed expectations-forecast predicted greater negative changes in motivations and a lower likelihood of choice. Additionally, prospective students who received feedback on interest-major-fit-forecasts and disappointed expectations-forecasts before enrollment were more successful compared to those who did not receive such feedback. We discuss</p>

		theoretical implications for theories on study choice motivation and subsequent emotions and achievement, as well as practical implications for study orientation.
<p>Angelica MOË Co-Authors: Monica Bolognesi Francesca Lanciano</p>	<p>Raising teacher self-compassion to increase well-being and reduce stress: A meta-analysis</p>	<p>Self-compassion is a kind and understanding attitude towards ourselves, characterized by reduced self-judgment and mindfulness dispositions. Research demonstrated it relates with well-being and reduced ill-being in a range of populations including teachers. Moreover, it can be promoted through structured trainings. This research aimed at assessing the beneficial effects of self-compassion interventions with teachers by also examining effects on related well-being dimensions. A meta-analysis of existent intervention studies with teachers was run. 1706 papers were retrieved. After the screening, 10 eligible RCT studies which involved 689 participant teachers were analysed, leading to a confirmation of the effectiveness of the trainings to increase self-compassion ($d=0.55$) and decrease stress ($d=0.95$). Theoretical and practical implications are discussed.</p>
<p>Riikka MONONEN Co-Authors: Pinja Jylänki Anna Tapola Johan Korhonen</p>	<p>Longitudinal relations between math anxiety and performance: The role of self-concept and interest</p>	<p>While a negative relation between math anxiety (MA) and performance is well-documented in the literature, we still lack research about the directionality of this relationship, and the roles of motivational factors in it. In this study, we investigated the longitudinal relations of MA and performance from the 4th to 5th grade, and how math self-concept and interest predict MA and performance. Finnish students' ($n = 345$) MA (cognitive and affective dimensions) and math performance (multi-digit arithmetic fluency) were measured twice, and math self-concept and interest once in the 4th grade. Cross-lagged panel model showed that grade 4 math performance predicted grade 5 MA (both cognitive and affective), but not vice versa, thus supporting the theoretical Deficit Model of MA. When motivational factors were included in the model, only grade 4 math performance predicted grade 5 affective MA. Math interest was a significant predictor of affective MA, whereas math self-concept predicted only math performance. As our results follow the Deficit Model of the directionality between math performance and MA, in school practice, emphasis should be given in supporting students' math skills and interest, which in turn, may help in reducing MA. Lack of interest in math could also be considered as a risk factor for experiencing MA, especially the affective dimension of it.</p>
<p>Tânia MOREIRA Co-Authors: Pedro Rosário Daniela Moreira Joana Martins</p>	<p>Beyond borders: A tale of (dis)engagement in Roma students from Portugal, Spain, and Romania</p>	<p>Addressing the educational paths of Roma students remains a significant objective within the education strategies of the European Union. Despite some progress, students from Roma backgrounds encounter persistent challenges throughout their educational journeys, such as high rates of non-attendance and early school dropout. This study draws upon the Self-System Model of Motivation and ecological models of acculturation to examine how self-related assets - representing motivational forces - interact with context-related assets (parents and teachers) in shaping school (dis)engagement among Roma students across three European countries.</p>

		<p>The research sample comprises 735 students aged 9 to 19 from Roma backgrounds in Portugal, Spain, and Romania. The findings reveal that students' perceptions of various aspects of contextual support, including parental and teacher involvement, have a differential impact on enhancing motivational forces. These motivational forces, comprising the utility value of school, a sense of belonging, and control beliefs, influence students' behavioral and emotional (dis)engagement within the school environment. Findings underscore the absence of country invariance, clarifying variations in the significance and direction of relationships across the three countries despite similarities in structural associations. The study highlights the nuanced influences of country-specific cultural contexts on (dis)engagement trajectories of students from Roma groups. By delineating these nuances, the findings emphasize the necessity of considering these factors for tailored educational interventions and policy development that account for the complex interplay between the cultural context and student engagement among Roma populations.</p>
<p>Matthew MORENO Co-Authors: Keerat Grewal Jason Harley</p>	<p>Examining machine learning to predict medical learner's regulation in medical simulations</p>	<p>This study examined the use of supervised machine learning algorithms to predict how medical learners regulated themselves during high-fidelity medical simulations. The study examined thirty-eight (N= 38) medical residents at a Canadian university who were grouped into 17 (n= 17) teams of two- members. Residents' self-regulated learning (SRL) and socially shared regulated learning (SSRL) interactions and physical behaviors were coded as they completed their simulation scenarios. Their electrodermal activity (EDA) were recorded to provide a measure of their emotional arousal. Using a Mixed-Effects Random Forest (MERF) algorithm, results indicated that this model was effective in predicting EDA activation through SRL and SSRL codes. This study expands how we can use multimodal data to capture the dynamics of medical trainees' cognitive, affective, metacognitive, and motivational (CAMP) processes, and how medical learners' regulation affects their learning.</p>
<p>Joy MUTH Co-Author: Marko Lüftenegger</p>	<p>Teachers' mindset meaning system: Achievement goals, beliefs, and classroom practices</p>	<p>Mindsets are crucial factors for individuals' adaptive behaviour in educational contexts. In meaning systems, associations between mindsets and behaviour are mediated through motivational aspects. It is assumed that students should also benefit from teachers adopting a growth mindset, but even though many studies have investigated the mindset processes of students, analyses of teachers' meaning systems are lacking. This study, therefore, examines relationships between teachers' mindsets, self-efficacy, achievement goals (mastery, performance-avoidance), and instructional practices (goal structure dimensions of task, autonomy, recognition, grouping, evaluation, time). 650 Austrian in-service teachers (69.6% female; mean age 45.1 years; SD = 11.3) provided answers to the survey. Data were analysed using latent mediation modelling with fixed mindset as a predictor, self-efficacy,</p>

		<p>mastery goals, performance-avoidance goals as mediators, and the six mastery classroom goal structure dimensions as outcomes. The results indicated positive relations between a fixed mindset with performance-avoidance goals and negative relations with self-efficacy and mastery goals. Mastery goals and self-efficacy negatively fully mediated the effects of fixed mindsets on five of six mastery goal structure dimensions. No mediation was found for performance-avoidance goals except for the fixed mindset-autonomy link. In conclusion, the study's findings support the idea that a meaning system approach is also valid for teachers and provides insights into the interplay between mindset, self-efficacy beliefs, achievement goals, and classroom practices.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Reut NACHOUM Co-Authors: Christopher Niemiec Yaniv Kanat-Maymon	Mothers' basic psychological needs as antecedents of parenting and child autonomous functioning	<p>Much like the airplane safety instruction that advises securing your own oxygen mask before assisting others, we speculate that parenting, too, requires the satisfaction of parents' own needs, in order to support their children's adjustment in one of the stormy developmental periods. Relying on self-determination theory, we conducted a two-wave longitudinal study and tested whether mothers' basic psychological needs satisfaction and frustration, when children were 20 months old, predicted mothers' autonomous and controlled parenting styles and child's mastery motivation and rule internalization at about 4.5-year-old. Participants were N = 127 mother-child dyads. At T1 we measured parents' need satisfaction and need frustration, as well as autonomy-supportive/controlling parenting style, behavior problems (CBCL), child temperament and demographics variables. At T2 we measured autonomy-supportive and controlling parenting styles, child's mastery motivation and rule internalization. Data was analyzed using SEM approach. Results indicated good model fit. Over and above baseline measures and demographic variables, mothers whose needs are frustrated at 20-months were more likely to become controlling and less autonomy-supportive toward their four-year-old children. Mothers' autonomy support in turn was associated with child's mastery motivation, and mother's controlling parenting was negatively associated with child's rule internalization. Altogether, these findings emphasize the critical role of maternal psychological needs in shaping parenting practices and, consequently, child outcomes. The findings draw attention to the harmful effects of maternal need frustration, leading to controlling parenting, and undermining autonomy-supportive practices. This conclusion is in line with SDT studies, emphasizing the detrimental effects of need frustration on parental functioning.</p>
Valentina NACHTIGALL Co-Author: Nikol Rummel	On the relationship between students' conceptions of scientists and their study interest	<p>In research on science education, it has often been hypothesized that stereotypical conceptions of scientists are a reason why many students decide against a career in the natural sciences. With regard to the social sciences and humanities, it has been claimed that these disciplines are often studied for the wrong reasons. One such wrong reason likely relates to inaccurate conceptions of scientists within the social sciences and humanities. Following the self-to-prototype matching strategy,</p>

		<p>students' study interest is likely affected by the discrepancy between their self-image of their abilities in that discipline and their image of the prototypical scientist working in that field. So far, empirical evidence that supports these hypotheses is rare, especially with regard to the social sciences and humanities. In an interview study with 64 school students, we therefore investigated students' conceptions of natural and educational scientists and compared these conceptions for students with high and low study interest and self-image in the corresponding disciplines. The results of Epistemic Network Analyses yielded significant differences demonstrating that students with low study interest and self-image in the natural sciences hold more stereotypical and negative conceptions of natural scientists than students with high interest and self-image. Students with high study interest and self-image in educational sciences tend to view educational scientists more strongly than their counterparts as pedagogical practitioners (and less as scientific researchers). Thus, our study provides empirical evidence for an often stated but so far rarely investigated relationship between students' conceptions of scientists and their study interest and self-image.</p>
<p>Susanne NARCISS Co-Authors: Helena Laudel Antje Proske</p>	<p>Fostering the learning from errors with the "Failure Identification Elimination Reflection-Circle"</p>	<p>This paper describes the development and evaluation of the "Failure Identification Elimination Reflection-Circle" (FIER-circle) that aims to support students in detecting and correcting their errors when working on math tasks. In a first evaluation study, two teachers of two 6th-grade High School classes (n=37) implemented the FIER circle as part of their mathematics classes, and a third class (n=18) served as a control class. The development of students' perceived error climate and their error beliefs was measured over half a year. Students' academic math self-concept was measured as a control variable. Contrary to our expectations, the intervention and control groups did not differ significantly concerning their perceptions of the error climate and their error beliefs. Possible reasons will be discussed, such as the intervention's implementation or the study's duration.</p>
<p>Moritz NIEMANN Co-Author: Thomas Martens</p>	<p>Epistemic emotions influence metacognitive judgments of confidence</p>	<p>This study investigates the influence of epistemic emotions experienced during learning on metacognitive judgments of confidence made after learning. In line with the cue-utilization approach, we hypothesize that due to their salient nature, learners use epistemic emotions as cues to inform their metacognitive judgments. Ninety-two participants took part in a laboratory learning study where they spent 45 minutes learning about functional human neuroanatomy in a digital learning environment. They were presented with the exact same assessment questions before and again after learning. In addition to each question, participants rated how confident they were that the answer was correct. The epistemic emotions Curiosity, Flow, Confusion, Frustration, and Boredom were self-reported by the participants following a video-stimulated recall interview procedure. We used multilevel models</p>

		<p>to test the influence of each individual emotion on Judgments of Confidence on the Post-Assessment. All five epistemic emotions significantly influenced post confidence. The positive emotions Curiosity and Flow increased confidence, while the negative emotions Confusion, Frustration, and Boredom decreased confidence. These results persisted when controlling for learning gains and confidence in the pre-assessment. Only the influence of confusion became non-significant. Our results indicate that epistemic emotions experienced during learning significantly influence metacognitive judgments of confidence made after learning, and that emotions contribute unique explanatory power that is not shared with learning gains or prior confidence, highlighting the informative role of epistemic emotions on metacognitive judgments.</p>
<p>Fernando NUNEZ-REGUEIRO</p>	<p>Autonomous motivation positively impacts acquisitions in mathematics: A large-scale RI-CLPM</p>	<p>This communication presents a study on the reciprocal effects between autonomous and controlled motivation in mathematics, and mathematics acquisitions. THEORY: Current research in self-determination theory (SDT) supports the view that autonomous forms of motivation (i.e., taking pleasure in learning activities, identifying with learning goals) support learning outcomes. On the contrary, the relation of controlled motivation (i.e., working at school to obtain rewards, or avoid feelings of guilt or punishments) to learning is more mitigated. Moreover, the reverse effect of acquisitions on motivations has received little attention. Finally, research is mainly correlational or based on residualized change models that may provide fragile evidence, by confounding within- and between-person processes of change. AIMS AND HYPOTHESES: This study aimed to analyze reciprocal relations between school motivation (autonomous, controlled) and acquisitions, particularly in mathematics among vocational students. METHOD: We use data from a large sample of high school students (N = 4843 students, 440 classes) using a short version of the Academic Self-Regulation Questionnaire (Ryan & Connell, 1989), and standardized tests in mathematics across 3 semesters. We compare cross-lagged panel models (CLPM) and random-intercept CLPM (RI-CLPM), thus accounting for statistical issues. RESULTS: Whereas CLPM results suggest positive bidirectional effects among all combinations, RI-CLPM results suggests that autonomous motivation predicts increases in acquisitions, whereas controlled motivation does not (non-significant effects). In turn, acquisitions predict increases in controlled motivation, but not in autonomous motivation. Aligning with SDT, results thus suggest that autonomous motivation (vs. controlled motivation) is most adaptive to school functioning and learning.</p>



Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Paul O'KEEFE Co-Authors: Ramya Sakthivel E. J. Horberg</p>	<p>A growth-mindset-of-interest intervention helps learners seize new educational opportunities</p>	<p>Can adopting a growth mindset of interest—the belief that academic interests are developed, not fixed—help students benefit from new curricula and learning opportunities? First, Study 1 revealed how a growth mindset of interest can help adults seize lifelong-learning opportunities to expand their knowledge and employable skills. In a cross-sectional study, university graduates (N=525) with a stronger growth (vs. fixed) mindset of interest were more likely to take advantage of lifelong learning opportunities offered by the government, their alumni institution, and employers. Next, Study 2 revealed that a growth-mindset-of-interest intervention (Authors, 2023) lead students to reap the benefits of their new multidisciplinary curriculum, by embracing new academic identities and fostering stronger school belonging. Specifically, students entered their pre-university school strongly identified with science but not arts, yet their new curriculum mandated engagement with both academic areas. In a randomized controlled field experiment, incoming students (N=151) completed the intervention or active-control materials before matriculating. Approximately 7 months later, students in the intervention condition reported a stronger arts identity (without diminishing their science identity), and stronger belonging in school, relative to the control condition. Moreover, although adopting a stronger arts identity was associated with lower belonging in the control condition, this drop was eliminated in the intervention condition. Finally, by improving students' school belonging, the intervention indirectly predicted higher year-end GPAs. Together, this research underscores how a mindset conducive to expanding learning boundaries can help learners seize educational opportunities.</p>
<p>Kezia OLIVE Co-Authors: Junlin Yu Katariina Salmela-Aro</p>	<p>The role of lesson-specific relatedness, competence and autonomy in adolescents' physics task values</p>	<p>Objective: To support adolescent students' science learning, this study aims to investigate how students' experiences within science lessons influence students' motivation. Specifically, we examined how students' perceived psychological needs satisfaction in physics lessons was associated with students' physics task values. Method: We followed 174 students from two upper secondary schools in Helsinki, Finland (16-year-olds, 54% female), who were taking a 6-lesson physics module. At the end of each lesson, they rated their perceived competence, autonomy, and relatedness, alongside their intrinsic value, attainment-utility value, and cost. We</p>

		<p>fitted multilevel SEMs to identify the relationships among these variables, at both intra- and inter-individual levels.</p> <p>Results: At the intra-individual level, students reported higher values and lower cost in lessons where they experienced higher competence and relatedness with their teacher compared to their individual average experience. At the inter-individual level, students perceiving higher relatedness with the teacher relative to their peers reported lower cost, and those reporting higher competence relative to their peers had higher values. Compared to boys, girls reported significantly lower relatedness with their teacher, although they had higher attainment-utility value for physics.</p> <p>Significance: Taken together, this study demonstrated that in each lesson, adolescents' experience of competence and relationship quality with teachers relates significantly to their values in learning physics. These results support the argument that teachers play a critical role in providing positive experience in promoting adolescents' sustained science motivation, especially for groups such as female students, who seem to struggle to have such positive relational resources in science classes.</p>
<p>Sierra OUTERBRIDGE Co-Authors: Michelle Taub LaVonda Walker Joel Schneier</p>	<p>Achievement goal orientation as a predictor of keystroke logging & self-regulated learning processes</p>	<p>Many universities in the United States require a first-year writing course for undergraduate students, as writing is a multi-disciplinary skill required for most professions. Furthermore, these courses often foster self-regulated learning (SRL) to develop student writers who can effectively enact these processes. There are several affective and metacognitive factors that impact student SRL. As such, this research explores the key role of motivation, as well as keystroke logging behaviors during reflective writing for a writing course. Our results investigated the relationship between motivation, keystroke logging, and SRL, as they can often lead to deeper learning. Significant relationships, particularly with goal orientations in relation to keystroke logging and perceptions of self-regulated learning during a self-reflective writing prompt, demonstrate the importance of fostering motivation in student writers.</p>

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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Eija PAKARINEN</p> <p>Co-Authors: Jenni Salminen Minna Torppa Marja-Kristiina Lerkkanen</p>	<p>Teacher occupational well-being in relation to children's social competence in toddler classrooms</p>	<p>This study examined to what extent teachers' occupational well-being is associated with children's social competence in Finnish toddler classrooms. The participants were 42 ECEC teachers and 242 toddlers (114 girls; 128 boys; Mage 2.5 years). Teachers reported their occupational well-being (i.e., job satisfaction), ill-being (i.e., teaching stress, emotional exhaustion) and related factors (teacher efficacy, organizational climate) in a questionnaire. Teachers also rated children's social competence (prosocial [i.e., cooperation and empathy] and antisocial [i.e., disruptiveness and impulsivity] behaviors). Data were analyzed with the Mplus program with multilevel and complex models. The results showed that teachers' self-efficacy and organizational climate were not directly associated with children's prosocial behavior. However, organizational climate was indirectly positively associated with children's prosocial behavior via teacher's job satisfaction. The results also showed that teachers' occupational well-being was negatively associated with children's antisocial behavior. Finally, teachers' occupational ill-being was not associated neither with children's prosocial nor antisocial behavior. The results highlight the importance of teachers' occupational well-being for children's social competence in toddler classrooms. Implications for research and practice will be discussed.</p>
<p>Cora PARRISIUS</p> <p>Co-Authors: Katharina Wendebourg Ines Pieronczyk Heiko Holz Hannah Deininger Torben Schmidt Detmar Meurers Benjamin Nagengast Ulrich Trautwein</p>	<p>Does the gamification of an intelligent tutoring system for 7th graders affect their motivation?</p>	<p>Derived from situated expectancy-value theory, we implemented a learner dashboard, a pedagogical agent, and individualized feedback into the intelligent tutoring system FeedBook for learning English as a foreign language. Using a randomized controlled field trial with N = 618 seventh-grade students, we tested their efficacy in fostering students' self-concept and subjective task values, as well as individual differences in the gamification effects as a function of students' gender and initial motivation. We observed positive effects of the learner dashboard and the pedagogical agent on student motivation for students who additionally received control (i.e., true/false) feedback instead of individualized feedback. Students with high initial motivation reported higher subsequent motivation if they had access to the dashboard or agent. However, they also consistently reported lower subsequent motivation if they received individualized feedback. The gamification elements thus showed mixed effects and only under certain conditions. More research is needed</p>

		that disassembles the various psychological processes that different gamification elements can trigger.
<p>Francisco PEIXOTO Co-Authors: Aleksander Baucał Jelena Radisic Lourdes Mata Ksenija Krstic Mafalda Campos Teresa Caetano</p>	<p>"Should I ask or should I tell them?": Teachers beliefs and practices fostering students' motivation</p>	<p>Motivation is crucial for academic success. According to the Expectancy-Value Theory (EVT), a student's choice, engagement, and performance in a task depend on their expectancy for success and subjective task values. Empirical studies on math teaching highlight two contrasting perspectives: static (teacher-centred) and dynamic (student-centred). This study explores how teacher beliefs and practices impact students' motivation in math education, investigating their relationship with changes in students' subjective task values and perceived competence. Utilising data from a longitudinal study, the participants consisted of 862 fifth-grade students from Portugal who completed an Expectancy-Value scale twice (spring 2022 and spring 2023), along with their respective math teachers (N=65) who responded to measures regarding their beliefs and practices. Regression analyses reveal that practices promoting student agency mitigate declines in intrinsic value and perceived competence, while beliefs emphasizing math as a set of rules are linked to increased perceived costs. Conversely, a dynamic perspective on math attenuates declines in attainment value. Ongoing Latent Profile Analyses (LPA) further explore associations between teacher profiles and student motivation. These findings underscore the importance of aligning teacher beliefs and practices with student motivation in math education, informing potential interventions and teacher training initiatives.</p>
<p>Armanda PEREIRA Co-Authors: Sofia Vidal Daniela Rosendo Sara Teixeira Sara Miranda Sandra Mesquita Pedro Rosário</p>	<p>Unraveling critical thinking predictors: The role of family-related and motivational variables</p>	<p>Critical thinking is considered one of the 21st-century competencies. Further research is necessary to understand this construct in the educational context. Especially research focused on the development of this emergent competence in elementary school children. This study investigated the influence of family-related variables and motivational factors on the critical thinking competencies of fourth-grade students. The sample comprised 625 students aged between eight and eleven years. A path analysis was conducted to understand the influence of family-related variables in critical thinking mediated by students' aspirations and self-regulation. One of the most noteworthy results shows that critical thinking is related to students' motivational variables, i.e., aspirations and self-regulation. Data also suggest that enhancing parental engagement in school and helping families develop their children's aspirations and self-regulation might result in heightened critical thinking. This results in highlighting the role of students' aspirations and self-regulation in enhancing critical thinking. These results also reinforce the importance of educators being aware of the indirect influence of the family context on the development of critical thinking competencies.</p>

<p>Pilvi PEURA Co-Authors: Mika Paananen Vesa Närhi Mikko Aro Heidi Korpipää Hannu Savolainen</p>	<p>Does teacher support promote student's self-efficacy for self-regulation?</p>	<p>Both students' capabilities for self-regulation and self-efficacy beliefs are important predictors of academic success and wellbeing in school. This study brings together Bandura's social cognitive theory (1997), Zimmerman's self-regulation theory (2008) and the research of the role of classroom climate (see Wang et al., 2020) in examining how the perceived teacher support influences student's self-efficacy for self-regulation (SESR) among children from Grade levels 3 to 4 (N = 718). First, we examined whether experiences of teacher support (emotional, instructional, and organizational) relate to SESR. The more students experienced emotional, instructional, or organizational support from the teacher, the higher was their SESR. Next, we examined whether self-evaluated hyperactivity and inattention symptoms moderated this association. Students with hyperactivity and inattention symptoms had lower SERS than their peers, however hyperactivity and inattention symptoms did not moderate the association between teacher support and SESR. The findings underscore the importance of supportive classroom environments that provide emotional, instructional, and organizational support for fostering all students' beliefs of their capabilities for self-regulation.</p>
<p>Kukka-Maaria POLSO Co-Authors: Heta Tuominen Petri Ihantola Markku Niemivirta</p>	<p>Cross-domain motivational profiles predicting the choice of STEM vs. non-STEM vocational programmes</p>	<p>According to the Situated Expectancy-Value Theory, students' educational choices are predicted by the intraindividual hierarchies of their domain-specific motivational tendencies: the probability of choosing a task increases when a student anticipates success in it more likely than in the other options. While empirical person-oriented research has found evidence for such predictions among students opting for tertiary education, of practical and theoretical importance is also whether similar dynamics apply to younger students selecting vocational upper secondary programmes. Thus, the present study investigated how adolescents' cross-domain expectancy-value-cost profiles in math and language arts at the end of basic education are associated with their choices between STEM vs. non-STEM vocational programmes.</p> <p>A nationally representative sample of Finnish students (N = 1,590 of whom 36.5% opted for vocational programmes) were classified into motivational profiles according to their subject-specific self-concepts, task values, and perceived costs with latent profile analysis. Next, profile differences in the likelihood of choosing a STEM programme were investigated using data from national registers. We identified five motivational profiles that were characterized by overall moderate, high, and low motivation, as well as predominant math and language arts motivation. As expected, students with predominant language motivation were the least likely to choose a STEM programme, while the other profiles did not differ significantly from each other. After controlling for gender, only the difference between predominantly math- and language-motivated students remained significant. These findings</p>

		highlight the major role of gender in guiding the formation of both motivational tendencies and educational choices in adolescence.
<p>Sanni PÖYSÄ</p> <p>Co-Authors: Noona Kiuru Matilda Sorkkila Marja-Kristiina Lerkkanen Eija Pakarinen</p>	Profiles of teachers' resilience and work burnout: The role of individual and contextual factors	The present study utilized person-oriented approach to examine profiles of teachers' resilience and work burnout. The participants were 331 Finnish elementary school teachers (79 % females) who filled out an online questionnaire in the Spring of 2022. The four-profile solution was identified using the latent profile analysis: 1) High Resilience and Low Burnout (31.7%), 2) Moderate Resilience and Low-Average Burnout (29.9%), 3) Low Resilience and High-Average Burnout (31.1%), and 4) Low Resilience and High Burnout (7.3%). Furthermore, the differences between the profiles were examined with respect to individual factors (work meaningfulness and over-commitment with work) and contextual factors (supportive organizational climate and leader-follower relationship). The findings of this study provided new insights to our understanding of teachers' occupational well-being. Such understanding can be used when aiming to find ways to support teachers' occupational well-being and motivation.
<p>Antti PULKKA</p>	Do students' goal orientation profiles, and self-described goals and reasons for goals correspond?	The present study examined how students' achievement goal orientations, self-described goals and reasons for goals are related to each other. To achieve this, common goal orientation survey and person-centered approach is used, and compared to qualitative data regarding goals and reasons. The participants were 184 students (aged 20 to 23 years) of the Finnish National Defence University. Four goal orientation profiles were identified: mastery-oriented (focus on mastery-orientations; 43.5%), success-performance-oriented (focus on performance orientations; 12%), disengaged (no strong focus; 32%), and avoidance-oriented (focus on performance-avoidance and work-avoidance; 12.5%). Students' open answers most often displayed mastery-intrinsic goals followed by mastery-extrinsic goals. Regarding reasons for goals, students' answers displayed reasons of work-relevance, succeeding in ranking on the course, aspects reflecting self-esteem and professional identity. Goal orientation groups were only weakly related to open-ended answers: disengaged students mentioned mastery-extrinsic goals more frequently, avoidance-oriented students mentioned work-avoidance goals more frequently, and the mastery-oriented students mentioned work as a reason more frequently than could be expected by chance. Regarding connections between goal and reasons, as displayed in the open-ended answers, mastery-intrinsic goal was related to work [as a reason for the goal], and unrelated to ranking, mastery-extrinsic goal was related to ranking, and unrelated to work, and performance-approach goal was related to ranking. Finally work-avoidance goal was unrelated to work, and related to self-esteem. The contributions of different kinds of measures and the relationships between goals and reasons are discussed.

<p>Ita PUUSEPP Co-Author: Kati Aus Eve Kikas</p>	<p>Latent profiles of teacher and student-rated task persistence from Grade2 to Grade3</p>	<p>High task persistence (TP) is associated with perseverance, while low TP in children leads to avoiding challenging tasks. Classroom TP assessments primarily rely on teacher ratings. Currently, aspects of TP development and disparities between teacher and student ratings remain understudied. Our study aims to identify profiles based on teacher and student-rated TP, exploring developmental trajectories from Grades 2 to 3 as well as gender, motivation, worry, and math skills variances within TP profiles. Involving 618 students (322 boys) and their 51 class teachers, latent transition analysis revealed three TP profiles in Grade 2 and four in Grade 3. Two similar profiles across grades emerged: the Low, Incongruent and the Medium, Moderately Incongruent group. Additionally, in both grades a profile with very high teacher-rated TP emerged: the High, Congruent group in Grade 2 and the High, Mildly Incongruent group in Grade 3. In Grade 3, a fourth profile was identified: Medium-High, Congruent. At both grade levels, there emerged meaningful differences between profile groups in terms of academic and motivational indicators as well as gender. Transitions between the profiles over one school year were predicted by gender and performance on calculation tasks. Future studies should examine whether incongruence in students' and teachers' perceptions explains additional variance in academic outcomes and well-being.</p>
<p>Ita PUUSEPP Co-Authors: Sonja Laine Kirsi ja Tirri</p>	<p>Associations between third grade students' mindset, inhibitory control, learning-related behavior</p>	<p>The aim of the present study was to examine associations between elementary school students' mindset, learning-related behavior, and response inhibition. For this, 101 third graders reported their math ability mindset and their endorsement of a mastery goal over a performance goal in math was behaviorally assessed. To assess the participants' inhibition skills, they completed a go/no-go task, which requires participants to inhibit their inappropriate responses. Mindset and response inhibition were used to predict the likelihood to prefer a mastery goal over a performance goal. The results indicate that students' mindset was linked to their behavior only when their response inhibition was moderate to high. This suggests that, to support young students' adaptive learning-related behavior, both their growth mindset as well as inhibitory control should be nurtured.</p>

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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Jelena RADISIC</p> <p>Co-Authors: Aleksander Baucal Francisco Peixoto Ksenija Krstic Anu T. Laine</p>	<p>Motivational trajectory of primary school students in six countries</p>	<p>Based on data from a longitudinal study in six European countries (data collected in spring 2022 and spring 2023), we observe a change in students' task values (i.e., intrinsic value, utility value, attainment value and cost) and expectancies across grades 3 and 4 and grades 4 and 5. Almost 13,000 students were involved in the sample. Results indicate a decline in all the task values and perceived competence between the two grades (i.e., grades 3 to 4 and grade 4 to grade 5). A more significant decline is observed between the two-time points in the transition between grades four to five. Among the countries observed (i.e., Norway, Sweden, Finland, Estonia, Portugal and Serbia), the grade parameters in the observed decline are similar, except for Serbia, where distinct patterns could be observed across both transition points. The results are discussed in light of the situational nature of motivational theories, providing a possible rationale for cultural specificity.</p>
<p>Vanessa RADTKE</p> <p>Co-Authors: Corinna S. Martarelli Wanja Wolff</p>	<p>Boredom and stress during easy and difficult tasks – Does mindfulness help?</p>	<p>Boredom and stress are common in our everyday lives, with both having significant impacts on individuals' well-being and health. While mindfulness is widely known as effective in reducing stress, its impact on stress caused by boredom remains unclear. This study investigates how boredom proneness (BP) and state boredom are linked to stress levels during repetitive tasks, alongside the question if mindfulness helps to reduce this experience of stress. A sample of 195 participants performed an easy and a difficult Stroop task across two online sessions separated by at least two days and answered questions about their experience of boredom and stress during the task. They completed the Short Boredom Proneness Scale (SBPS) and the Cognitive Affective Mindfulness Scale-Revised (CAMS-R) in a counterbalanced order, at least one day after each Stroop. Results of our linear mixed models confirmed our hypotheses, indicating that a tendency to greater BP aggravates the sensation of stress during repetitive tasks, while a tendency to be more mindful mitigates it. Exploratory analysis revealed a reduction in mindfulness's stress-buffering effect among individuals with a higher tendency of BP. This highlights the complex interplay between boredom, stress, and mindfulness and their relevance during the performance of repetitive activities. Future research should investigate the alignment between physiological stress responses and</p>

		subjective experiences while exploring the potential for boredom to induce stress. Moreover, further research is required to understand the potentially obstructive effect of BP among mindful individuals.
Alicia RAMOS Co-Authors: Maarten Vansteenkiste Jeroen Lavrijsen Bart Soenens Karine Verschueren	New insights on motivational development of high-ability learners across educational stages	According to self-determination theory, motivation varies based on the fulfillment of psychological needs, ranging from autonomous to controlled forms. High-ability students (top 10% in terms of general cognitive ability) may face unmet needs in general education, which is more designed for average learners. This study, involving two large samples (Sample 1: N = 3,429 students; Sample 2: N = 5,740 students) explored the development of motivational profiles across four education stages, comparing high- and average-ability students. It also examined predictors of the profiles, including need-supportive teaching practices and adequate curricular challenge. Using latent profile and transition analysis, it identified profiles that were consistent across samples and across educational stages through the end of compulsory education. High-ability students were more prevalent in profiles characterized by lower autonomous motivation, and shifted towards even lower levels during secondary school. Insufficient curricular challenge, which was reported to a greater extent by the high-ability students, was linked to the lower quality profiles. Needs-supportive teaching practices were associated with high quality motivation among both high-ability and average-ability students. Findings emphasize the necessity for tailored secondary school environments to better address the needs of high-ability students, highlighting the importance of adequate challenge for fostering high quality motivation.
Mauro RAMOS	Teacher wellbeing in Chile: The role of work structure, and their basic psychological needs	This research addresses the persistent compromise of teachers' well-being stemming from inherent organizational factors. Chile's adherence to the OECD has increased regulatory demands and administrative tasks, limiting teachers' focus on effective teaching (Guerrero, Balboa, & Miranda, 2017). Consequently, this has blurred the understanding of collaboration and autonomy, undermining the goal of a contemporary teaching-learning process aligned with societal demands (Vangrieken, 2018). Drawing from psychological perspectives such as Deci & Ryan (1985; 2000), the study emphasizes the significance of satisfying teachers' basic psychological needs, including autonomy, competence, and relatedness, for overall well-being, especially in the context of their work. The research aims to analyze the intricate interplay between the structure and organization of teachers' work, the fulfillment of their basic psychological needs, and their well-being. The study uses longitudinal quantitative methods and structural equation modeling (SEM) to investigate how fluctuations in psychosocial risk factors impact teacher well-being, mediated by changes in the satisfaction of basic psychological needs. Hypothesizing that variations in psychosocial risk factors during the academic year influence

		<p>teachers' autonomy, competence, and relatedness levels, the study anticipates uncovering a connection between the organizational aspects of teachers' work, the satisfaction of their basic psychological needs, and their well-being. The research also expects to identify fluctuations in well-being, autonomy, competence, and relatedness linked to changes in specific psychosocial risk factors within schools. With a sample size of over 350 teachers, this research aspires to contribute valuable insights into enhancing teachers' well-being and optimizing the teaching environment. Preliminary results and implications are discussed.</p>
<p>Anna RAWLINGS Co-Author: Anna Tapola</p>	<p>Self-control and temperament as predictors of secondary students' interest, strain, and effort</p>	<p>In this study, we examined self-control and temperamental reward and punishment sensitivities as potentially interlinked predictors of 8th-graders' (N = 268) domain-specific (mother-tongue) interest, psychological strain, and effort exertion (i.e., motivational appraisals). A model was specified in the SEM framework where temperamental tendencies were set to predict all other variables, and self-control to predict the motivational appraisals. Indirect effects from temperament on the motivational appraisals via self-control were also examined, and the effects of gender were taken into account. Self-control was found to predict interest and effort positively and was itself negatively predicted by punishment sensitivity (i.e., temperamental inhibition; SP) and interindividual reward sensitivity (i.e., sensitivity to reward derived from others' praise or attention; SR_{inter}). SR_{inter} was also a direct, positive predictor of strain. Intraindividual reward sensitivity (i.e., sensitivity to reward derived from novelty, personal successes, and related inner states; SR_{intra}) positively predicted both interest and effort. Somewhat surprisingly, SP had both a positive direct effect and, together with SR_{inter}, a negative indirect effect via self-control on effort. Girls reported higher SP and domain-specific effort than boys, and boys rated their domain-specific strain higher than girls. In all, the findings suggest that self-control is supportive of motivation, and is itself guided by temperament. The apparent educational importance and potential complexity of the linkages point to a need to examine these relationships further with a larger sample and in a longitudinal setting.</p>
<p>Bruno REMOLIF Co-Authors: Delphine Paumier Julien Chanal</p>	<p>Relationships between motivations, emotions, and academic outcomes among primary school students</p>	<p>The self-determination theory (Ryan & Deci, 2017) adopts an original perspective on motivation, recognizing different types of motivation leading to distinct affective, cognitive, and behavioral consequences. These motivations are situated on a continuum of self-determination ranging from controlled motivations (extrinsic motivations) to autonomous motivations (intrinsic motivations). Studies have shown that autonomous motivations are associated with better well-being, higher performance, and increased engagement. Chanal and Guay (2015) demonstrated that autonomous motivations are more specific to academic subjects than controlled motivations. Therefore, autonomous motivations in each academic subject should be</p>

		<p>more closely related to consequences in that same academic subject than controlled motivations. The main objective of our study is thus to test this hypothesis by examining the links between motivations, emotions, and academic performance in different subjects and in school in general. Our hypothesis is that autonomous motivations will be more correlated with consequences than controlled motivations, both at the situational and contextual levels. To address these objectives, a study was conducted in primary schools with 251 students (52% female; Mean age = 10.88). Various motivational regulations, positive and negative emotions, and academic outcomes in three academic subjects (French, mathematics, German) and for school in general were reported by the students. Preliminary results show closer links between autonomous regulations and various consequences among students than for controlled regulations in all considered subjects.</p>
<p>Ville ROKALA Co-Authors: Eija Pakarinen Marja-Kristiina Lerkkanen</p>	<p>Teachers' occupational wellbeing: Profiles of teacher self-efficacy and burnout dimensions</p>	<p>This study examined the profiles of teachers based on their occupational wellbeing in terms of self-efficacy and burnout dimensions (emotional exhaustion, cynicism, and sense of inadequacy). The data were collected from 316 Finnish class teachers in spring 2021. Four teacher profiles were identified by using latent profile analysis (LPA): 1. lowest burnout – highest self-efficacy (15.3%); 2. mediocre burnout and self-efficacy (45.4%); 3. above average inadequacy and cynicism – mediocre self-efficacy (30.4%); and 4. highest burnout – lowest self-efficacy. In profiles where levels of self-efficacy were higher, teachers also reported less burnout, and vice versa. The profiles differed with respect to teachers' levels of turnover intentions and supportive organizational climate. Levels of turnover intention were higher in profiles with higher levels of burnout dimensions and lower levels of TSE. Supportive organizational climate varied between most of the profiles, being higher on profiles with lower levels of burnout and higher levels of TSE. According to our findings, a supportive organizational climate may protect teachers from experiencing cynicism and a sense of inadequacy.</p>
<p>Christine RUBIE-DAVIES Co-Author: Mengnan Li</p>	<p>Promoting a positive learning environment: Teacher emotions and expectations</p>	<p>This study aimed to examine the relations between teacher emotions and teacher expectations, both of which, in separate studies, have been shown to be significant in influencing teaching practices and students' outcomes. The participants were 135 Chinese homeroom teachers from 14 high schools. Structural equation modelling showed that 1) high teacher expectations positively predicted pleasant emotions of joy, pride, and love, and 2) negatively predicted negative emotions of anger, fatigue, hopelessness, and anxiety. The results suggested that teachers appeared to improve their emotional experiences when their expectations for their students were high. The study contributes to the scarce base of knowledge on the interplay of these two factors in the teaching profession. Additionally, the findings from this</p>

		study have practical implications by indicating that teacher emotions might be improved through an intervention related to their beliefs.
Christine RUBIE-DAVIES Co-Author: Mengnan Li	Beliefs of ethnically diverse students and perceptions of classroom belonging	The beliefs of ethnically diverse students and associations with their perceptions of classroom belonging were explored in this study. The literature in this field is sparse even though classroom belonging has been associated with achievement and motivation. The participants were 389 students from diverse groups living in low socioeconomic areas in New Zealand. The study explored the relations between beliefs about teacher support, student support, and self-efficacy with perceptions of classroom belonging. Student ethnicity was not associated with their beliefs. For all students, positive perceptions of teacher support, student support and self-efficacy were related to positive assessments of their classroom belonging. Fostering a positive classroom climate is likely to be associated with more positive student beliefs and well-being.

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Presenting Author, Co-Authors	Title of Presentation	Abstract
Reito Visajaani SALONEN Co-Authors: Eeva Haataja Chase Sherwell Man Ching Esther Chan Ross Cunnington	Physiological synchrony in interpersonal agency: A case study on collaborative problem solving	Educational sciences are adapting different technologies to classroom research and collaborative work situations. Rapidly developing gadgets designed to measure physiological activity such as Heart rate or skin conductivity have eased access to human body reactions in real-life situations. Studies no more contain only technical results but also have a wider perspective to understand relations between results and theory. In our research, we used two novel approaches to understand connections between physical arousal and interpersonal behavior collaborative learning, which is an educational approach with established benefits for student learning and engagement in close relation to motivation. Skin conductivity is a way to obtain physiological changes both reactive to situation (phasic), but also level of intensity and duration (tonic) during the situation. Skin conductivity is measured by Empatica E4 bracelet and combined with joystick analysis of video to estimate person interpersonal agency during collaborative group work. This is a case study of 4 students working collaboratively during one lesson. Results indicate that students have reactive physiological arousal and students' agency has a connection to physiological reactions. Interpersonal agency is maximal correlated to students' phasic and tonic EDA in window of physiological lag of 30 seconds. This maximum correlation weakens for situations of low collaboration and topic of discussion. Benefits of both EDA and IP CAID analysis leads to new analyzing methods to establish more information about the total process. During physiological synchrony, we could detect MTLC dropping for all, which indicates alternation in agency.
Katja SAXER Co-Authors: Jakob Schnell Julia Mori Tina Hascher	On the relationship between student well-being, teacher–student, and student–student relationships	The rapid and profound changes in our world pose a great challenge to student well-being, especially at the secondary school level where age-related changes also occur. Therefore, many school systems have recognized the importance of fostering not only the skills of academic achievement but also the skills of well-being. Relationships that students form with teachers and peers in the classroom are important for their academic, social, and emotional development and are known to be one of the most important contributors to student well-being. However, less is known about longitudinal and reciprocal effects between classroom relationships and multiple dimensions of student well-being. Therefore, this longitudinal study

		<p>examines the relationship between positive and negative dimensions of student well-being, teacher–student relationships, and student–student relationships using two waves of data separated by one year and a structural equation modelling (SEM) approach. Secondary school students in Grade 7 (N = 757) and Grade 8 (N = 720) in Switzerland filled out a self-reported questionnaire. Results showed no significant effects between the dimensions of student well-being, closeness, and cohesion. Conflict had a negative effect on physical complaints and social problems in school over time. Additionally, students’ positive academic self-concept significantly negatively influenced conflict across two waves. Providing a multi-dimensional approach on student well-being as well as taking both relationships into account adds to a profound understanding of classrooms processes. Insights on these relations can help educators, schools, and researchers develop strategies to foster relationships in the classroom and, in succession, enhance well-being in school.</p>
<p>Juliane SCHLESIER Co-Authors: Diana Raufelder Daniela Raccanello</p>	<p>Differences in students’ emotion regulation considering perceived learning environment</p>	<p>Research on students’ emotion regulation strategies (ERS) lacks information about their individual preferences for various ERS, and rarely examined within-person fluctuations and between-person differences in ERS development. Furthermore, the school environment has hardly been considered. We conducted two studies on students’ use of ERS in dealing with emotionally challenging classroom situations (DECCS). This study had two aims: (1) To explore ERS latent profiles, examining the role of mathematics achievement emotions and performance, and (2) To differentiate between within-person fluctuations and between-person differences in ERS, considering students’ perceived environment. We involved 635 4th to 7th-grade students (Sample 1) and 140 5th-grade students (Sample 2). We measured their ERS use through the DECCS questionnaire, at one point in Study 1 and across three waves in Study 2. Respectively for the two studies, we conducted a latent profile analysis with a three-step approach and a random intercept cross-lagged panel model (RI-CLPM). For Study 1, a four-profile solution fitted the data best. Profile 1 comprised the biggest group (84.8%; ambitious and high need satisfaction). Profile 3 (7.5%; flexible ERS, highest need for support, and low autonomy/competence) was significantly associated with more anger and less joy. For Study 2, the RI-CLPM showed non-significant autoregressive and cross-lagged paths. Moreover, the perceived environment was significantly and positively associated with ERS at each wave. Our findings indicate that students’ perceptions of their learning environment should also be considered when investigating their ERS use. Extending this knowledge is a preliminary step for developing resources to improve students’ ERS.</p>

<p>Rahel SCHMID Co-Authors: Robbert Smit Nicolas Robin Alexander Strahl</p>	<p>The role of momentary emotions in promoting error learning orientation</p>	<p>Students often encounter numerous errors while engaging in visual programming. In order to learn from these, it is important that students regulate their emotions and view errors as learning opportunities. This study sought to investigate the interaction between momentary emotions—specifically, feelings of enjoyment, anxiety, and boredom—and students’ error learning orientation (ELO), within the context of a one-day visual programming course held in an extracurricular learning setting. The study involved 269 lower secondary school students (grades 7-9), constituting the sample. Data collection occurred within the framework of an intervention study, employing questionnaires administered both before and after the course, alongside four assessments of students’ emotional states conducted throughout the duration of the program. The findings indicated that initially, the students’ emotions were influenced as anticipated by their ELO. Throughout the course, emotions exhibited a positive shift, whereas students’ ELO remained consistent. There were no discernible distinctions in ELO between the control and intervention groups. However, the anticipated reciprocal relationship between students’ emotions and their ELO by the conclusion of the course was not observed. Modifying ELO within the confines of a one-day course poses challenges. Nonetheless, educators can facilitate the development of a constructive ELO in students over time through tailored pedagogical strategies. These strategies seek to reduce the impact of negative emotions typically encountered when making errors, ultimately fostering a perspective where errors are embraced as valuable learning opportunities.</p>
<p>Jakob SCHNELL Co-Authors: Katja Saxer Julia Mori Tina Hascher</p>	<p>Longitudinal interactions of Swiss secondary school students’ well-being, engagement and achievement</p>	<p>Students’ well-being has become an important part of education policy in many countries. Research shows that student well-being, school engagement, and academic achievement are reciprocally related. However, prior research has neglected the multidimensionality of the constructs of well-being and school engagement. The present study used a six-dimensional student well-being model with positive and negative dimensions and a three-component school engagement model to untangle the reciprocal effects of well-being dimensions, engagement components, and academic achievement. A longitudinal cross-lagged panel analysis using a sample of N = 754 Swiss secondary school students revealed differential effects: While student well-being had no influence on achievement, one negative dimension was reciprocally related to cognitive engagement. Behavioral engagement had a positive influence on positive well-being dimensions and on achievement. Achievement had positive influences on a positive and a negative well-being dimension. The results imply that strengthening students’ behavioral school engagement may be an efficient way to promote both their well-being and achievement.</p>

<p>Andrea SCHWIETER Co-Author: Thomas Martens</p>	<p>Understating internalization – The Impostor Phenomenon in higher education</p>	<p>The Impostor Phenomenon (IP) was first mentioned by Clance and Imes in 1978 and describes mostly high-achieving people who have difficulty internalizing their objectively measurable successes to their own competences and abilities and live under the constant fear of being exposed as impostors. This has health, social and economic implications, as impostors are more vulnerable than the general population to anxiety disorders, depression and burnout due to their dysfunctional attributional behaviour. The present study investigated the impostor phenomenon among students (N = 120) with regard to correlations with work styles, possibilities of self-regulation and intelligence. Positive correlates of IP and chronic stress, perfectionism, procrastination, intelligence, negative correlates of IP and self-soothing and no correlation between IP and intelligence were assumed. Furthermore, it was presumed that the effect of perfectionism on IP is intensified by stress. All hypotheses could be accepted. Students with a strong impostor self-concept show significantly more frequent work behaviour such as perfectionism or procrastination, experience more chronic stress and have fewer opportunities for self-regulation. Chronic stress was identified as a mediator of the effect of perfectionism on the impostor self-concept. Theoretical and practical implications are discussed, especially, which factors will disrupt internalization processes and how these factors can be addressed in higher education.</p>
<p>Gintas SILINSKAS Co-Authors: Justina Davolyte Noona Kiuru Saule Raiziene</p>	<p>Latent profiles of teachers' and parents' academic support: Links to children's task persistence</p>	<p>We aimed to identify latent profiles based on teachers' and parents' academic support (frequency of help, positive affect, and autonomy support) and examine their associations with children's task persistence in Grades 2 and 3. A total of 612 children (48% girls) completed academic performance tests at the end of Grade 2 (T1) and at the end of Grade 3 (T2). Parents (n = 576) reported on their academic support at home (T2). Teachers (n = 40) rated each student's task persistence (T1 and T2) and the frequency and extent of academic support provided to each student (T2). The results were adjusted for child gender and academic performance. First, latent profile analysis identified four teacher–parent academic support profiles in Grade 3: Average help and autonomy with predominantly positive teachers' affect (37.5%), Average help, autonomy, and positive affect (26.3%), Higher than average help, average autonomy with moderately low teachers' positive affect (32%), and High help, average autonomy with predominantly low teachers' positive affect (4.2%). Second, the results indicated that the likelihood of belonging to a particular teacher–parent academic support profile was related to children's task persistence: The more persistent children were in Grade 2, the more likely they belonged to the more positive teacher–parent profile in Grade 3 (lower help, average autonomy, and higher positive affect). Third, for children belonging to the Average help and</p>

		autonomy with predominantly positive teachers' affect profile, task persistence improved across Grades 2 and 3.
Gintas SILINSKAS Co-Authors: Kati Laine Arto K. Ahonen	Adolescents' financial literacy: Correlating factors in PISA 2018	We investigated the financial literacy of 15-year-old teenagers in European OECD countries, based on the OECD's PISA assessment (N = 30 019). We show that financial literacy is connected to five broad categories of factors: information and communication technology (ICT), financial literacy, home and school learning environments, general motivational approaches to tasks, and socio-demographic factors. Concerning ICT factors, perceived competence and perceived autonomy of ICT use were positively related to financial literacy scores. Financial literacy factors such as confidence in using digital services and perceived autonomy in handling money were positively related to financial literacy. Regarding home and school factors, learning financial concepts at school was positively, whereas parental involvement was negatively related to financial literacy. As for motivational factors, both work mastery and mastery goal orientation were positively related to financial literacy scores. Finally, there were no gender differences, but low socio-economic status and having an immigrant background were related to lower financial literacy. Overall, despite some variation, the most consistent finding across European OECD countries was that for adolescents to develop financial literacy, they should be exposed to financial concepts at school and granted autonomy in handling a certain amount of money independently.
Izabela SORIĆ Co-Author: Irena Burić	Personality traits and emotion regulation: The mediating role of beliefs in emotional expressivity	Research revealed a wide range of different, often very intense, emotions that teachers experience in their daily work. Undoubtedly, it was established that the use of adaptive strategies of emotion regulation is crucial for the psychological and professional well-being of teachers. Consequently, the identification of personal and contextual antecedents of successful emotion regulation has become an important area of research. Therefore, the aim of this research was to determine whether teachers' personality traits predict used emotion regulation strategy, and whether belief about their emotional expressivity mediate in these relationships. Data from secondary school teacher was on-line collected at two time points. At the first point, teachers answered socio-demographic questions, completed BFI-2 questionnaire (Soto & John, 2017) and the scale of beliefs in their own emotional expressiveness constructed for this research. At the second point, they completed The Emotion Regulation Questionnaire (Gross & John, 2003). The performed analyses showed different patterns of association between different personality traits and emotion regulation strategies. The mediation analyses revealed that teachers' beliefs about their emotional expressivity did not play a mediator role in the relationship between personality traits and reappraisal. However, the belief in emotional expressivity proved to be a complete mediator in the relationships between

		openness and agreeableness with suppression. In addition, it partially mediated the relationship between extraversion and suppression. Overall, the results indicated that beliefs about emotional expressivity could play a mediator role depending on which personality trait and which strategy of emotion regulation are involved in investigated relationship.
Kristján Ketill STEFÁNSSON	Reading motivation in adolescence: The use and misuse of smartphones in schools	The surge in smartphone use among adolescents can be seen both as a resource and a challenge for teaching and learning. Extensive screen use on weekdays has especially been linked to negative outcomes, and additional studies have been called for to clarify elements such as screen content. The model of motivational dynamics was used to formulate the study hypotheses of a negative relation between adolescent total smartphone use (general + study related) during school hours and reading motivation; and a positive relation between study related smartphone during school hours and reading motivation, while controlling for several covariates (i.e., gender, autonomy, competence, and relatedness). The sample in this cross-sectional study consisted of survey responses collected from 4065 students in Grades 8 – 10 from 75 Icelandic schools in the autumn of 2023. A random-intercept multilevel model was specified to test the study hypotheses. Compared to students without a smartphone at school (n = 499; 13%) the results indicated a small (d = 0.23 – 0.28), moderate (d = 0.48 – 0.60), and large (d = 0.89 – 1.34) decline in reading motivation for each additional hour of daily total smartphone use during school hours. In contrast, daily smartphone use for study purposes at school was positively and weakly related to reading motivation ($\beta = 0.12$), but only after controlling for the negative effect of total smartphone use at school. The results call for more research on the possible reciprocal relation between extensive smartphone use and reading disengagement.
Marlene STEINBACH Co-Authors: Johanna Fleckenstein Livia Kuklick Jennifer Meyer	Tackling low-performer's motivation: The role of incorrectness cues in AI-based feedback	Automated scoring based on artificial intelligence (AI) enables more frequent, performance-contingent feedback for written texts. While learners need corrective (i.e., negative) feedback for improvement, feedback that mirrors failure may harm motivation, making it necessary to design motivating automated feedback messages especially for low-performers. To mitigate the potentially demotivating impact of explicit incorrectness cues, literature suggests providing elaborated feedback (EF) information. While EF necessarily includes information on answer correctness as it mirrors performance, the cue can be adjusted to be more implicit or explicit. This study compares the effects of more implicit and explicit incorrectness cues in AI-based automated, negative EF on student motivation and performance. After completing an English writing task, N = 104 (Mage = 13.97 years) low-performing students received EF either with or without explicit cues of incorrectness. We examined pre-post effects and group differences in motivational and performance

		outcomes. Data show that student performance improved but their motivation declined throughout the unit in both feedback conditions. Exclusion of explicit error notifications did not buffer detrimental motivational effects. Exploratory findings suggest that excluding incorrectness cues led to more decrease in self-concept and intrinsic value. Our findings highlight the need for further research into the design of negative feedback to ensure that it effectively motivates and supports low-performing learners.
Ronja STEINHAUSER Co-Authors: Belinda Merkle Oliver Dickhaeuser Martin Daumiller Markus Dresel Johanna Ott Stefan Janke	Predicting PhD students' well-being through motivation-/skill-fit-forecasts and practical experience	Prospective PhD students often choose a PhD based on their interests and skills. However, it is unclear whether they can accurately make forecasts about the fit between their interests, skills and PhD requirements when deciding for/against a PhD. Person-environment-fit theory suggests that the fit between an environment and an individual's interests (motivation-fit) and skills (skill-fit) impacts well-being and previous research in higher education shows that prospective students' motivation-fit-forecast predicts later well-being. Therefore, we hypothesize that prospective PhD students' fit forecasts should predict later PhD well-being (discrete emotions, satisfaction, mental health). However, these forecasts might be biased due to misconstruals of future situations. Thus, we hypothesize that practical experiences can improve predictions by reducing misconstruals. We tested these hypotheses in a longitudinal field study. Students who considered starting a PhD (n = 648) were asked for their subjective motivation-fit-forecast and skill-fit-forecast (t1). Of these students, 100 subsequently actually started a PhD and within the first three months took part in a survey about their well-being in their PhD (t2). A multivariate multiple regression analysis revealed that motivation-fit-forecast proved to be an overall significant predictor for well-being, while skill-fit-forecast and the interaction between practical experiences and motivation-/skill-fit-forecast were not. Our results suggest that encouraging students to consider their motivation-fit with a PhD could help them in their decision-making and foster positive emotions during their work as a PhD student.
Kim STROET Co-Author: Roben Scholten	Effects of a Self-Determination Theory based intervention in university statistics education	This study explores the effectiveness of a Self-Determination Theory (SDT)-based intervention aimed at improving social sciences students' perceptions and outcomes in university statistics courses. Given the widespread negative perceptions towards statistics—ranging from boredom and uselessness to fear and hatred—the intervention focused on modifying teacher behaviors to enhance students' motivation. The intervention emphasized supporting students' needs for autonomy, competence, and relatedness through specific, practical teaching behaviors, such as acknowledging negative feelings, providing meaningful rationales for learning activities, and fostering a sense of volition and competence. The study involved 8 teachers and 32 students in an introductory statistics course, divided into

		<p>intervention and control groups. The intervention included a workshop and a follow-up meeting for teachers. Students' perceptions of need-support, motivation, engagement, and academic performance were assessed through surveys before and after the course, alongside teachers' feedback on the intervention. Results indicated a significant increase in perceived need-support among students in the intervention group, with a medium effect size. However, the impacts on engagement, academic achievement, and autonomous motivation were very small and nonsignificant. Teachers' evaluations improved slightly in the intervention group, but not significantly. Despite the modest effects on student outcomes, teachers reported positive experiences with the training program, highlighting its importance and satisfaction with the implemented changes. This study contributes to the literature by demonstrating the potential of SDT-based interventions in enhancing university statistics education, suggesting that even minimal changes in teacher behavior can influence student perceptions and motivation, albeit with mixed outcomes on engagement and academic performance.</p>
<p>Jennifer SYMONDS</p>	<p>Student momentary engagement in the life course: A sociocultural developmental perspective</p>	<p>This presentation of theoretical work will explore the development and function of student momentary engagement in the life course, through a sociocultural lens. Momentary engagement will be defined as the self-regulated dynamic co-action of motivation, emotion, cognition, and behaviour, that engages a student in a task across seconds, minutes, and hours. Momentary engagement will be further described as a complex, dynamic person environment interaction, that is shaped by agency, culture, and individual development. The presentation will detail how competencies for momentary engagement develop from infancy, impacting how individuals engage in the moment in childhood, adolescence, and adulthood. Momentary engagement will then be set in a life-course perspective, detailing how individual capacity for momentary engagement builds across educational and work transitions, channelling resources to individuals to create higher-level attractor states of patterns of engaged behaviour across months and years. In conclusion, I will explain the fundamental role of agency in developing momentary engagement across the life course and argue for engagement's potential in mitigating against educational and socioeconomic inequalities.</p>

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Presenting Author, Co-Authors	Title of Presentation	Abstract
Anna TAPOLA Co-Authors: Anna Rawlings Pinja Jylänki Riikka Mononen Johan Korhonen	The interplay of cognition and affect in fourth graders' mathematics performance	Working memory (WM) capacity influences students' math performance together with their emotional and motivational tendencies. The negative relationship between math anxiety and both WM and performance is well-established, and some studies have also found WM to mediate the effect of math anxiety on math performance. However, much less is known, first, about the links between WM and positive motivational factors, such as interest in mathematics, and second, about the interconnections of these cognitive and affective processes, particularly among elementary school students. Consequently, in this study, we examined both the direct and mediated effects of math anxiety and interest through WM on fourth grade students' (N = 338) performance in an arithmetic fluency task, while controlling for their generalized anxiety. Findings from a model applying structural equation modeling showed math anxiety to predict performance negatively, while the effects of WM and interest were positive. However, although there was a negative effect from math anxiety to WM, the indirect effects of neither math anxiety nor interest via WM on performance reached significance. Nevertheless, the results emphasize the importance of acknowledging both cognition and affect in students' academic pursuits.
Mikko TILIKAINEN Co-Authors: Janne Lepola Anu Kajamies	What is interactive classroom resilience?	In this theoretical paper, we present a conceptual analysis of resilience in classroom interaction. Only few conceptualizations exist that integrate teacher resilience and student resilience in the context of classroom teaching. We draw on two dynamic organizers of teaching interaction – an adaptation model for motivational orientations and the instructional core (the so-called “didactic triangle”) – to make sense of interactive classroom resilience. Resilience emerges in the dynamic, relational interplay between teachers, students, and curriculum. We seek for core practices – rather than just processes – that are critical in promoting resilience through teaching. To qualify as core practices of resilience, the activities have to satisfy two conditions. First, they need to cultivate shared emotional awareness between teachers and students. Second, they have to incorporate shared intentionality into classroom interactions. Two core practices are suggested. The first, emotional scaffolding, is enacted during lessons to promote students' study

		activities with affective considerateness. The second, joint-planning, extends emotional scaffolding to planning and evaluation stages of teaching. We outline a model of interactive classroom resilience that applies instructional core informed with motivational perspectives. The systemic model illustrates students' study ability as an educational aim and the role of teaching interaction in strengthening it. The conceptual model helps us to better explore the dynamics between teachers' and students' resilience in future research and develop resilient classroom practices in teacher education.
<p>Cecilia TOSCANELLI Co-Authors: Michael Parmentier Ieva Urbanaviciute Andreas Hirschi</p>	Profiles of job boredom, burnout and work engagement and their link with the work environment	<p>Purpose – This study proposes an examination of job boredom, considered as an amotivational work-related state in relation to (1) other well-known well-being indicators and motivational states (i.e., work engagement and burnout) and (2) the psychosocial work environment (i.e., job demands and resources) drawing on the Job Demand-Resources theory (Bakker and Demerouti, 2017) and Warr model of affective well-being (e.g., Harju et al., 2014). Method – This study was based on a two-waver longitudinal design with a sample of 260 Belgian workers. Latent Profile Analysis (LPA) and Latent Transition Analysis (LTA) were performed to investigate the profiles of the above-mentioned psychological states and to test their stability over time. Finally, to study the predictors (i.e., job demands and resources) of the profile membership, a multinomial logistic regression was performed. Findings – Preliminary results show four combinations of boredom-engagement-burnout profiles. Multinomial logistic regression analysis at T1 showed that hindering job demands predicted the probability of belonging to the more unfavorable profiles. Job resources such as variety, learning opportunities, and the perception of being useful for the organization predicted the probability of belonging to favorable profiles. Further analyses are currently in progress and will be finalized by the time of the conference. Conclusion – Our findings highlight the importance of considering work-related motivational states and well-being outcomes combined rather than in isolation. Moreover, our findings stress the importance to promote well-balanced working conditions and reinforce the motivation path through job resources and reduced hindering demands.</p>
<p>Marjo TURUNEN Co-Authors: Tiina Törmänen Kati Vasalampi Joonas Muotka Hanna Jarvenoja</p>	Variation in students' situational motivation during collaborative learning	<p>Current motivation research emphasizes increasingly situated, social processes underlying motivated behaviors, both in the moment and over time. Situated expectancy-value theory (SEVT) (Eccles & Wigfield, 2020), for example, emphasizes contextual, situation-specific dynamics in motivation. However, there is still relatively little research on the situational variation of motivation in collaborative learning contexts. In this paper, we address this gap and investigate students' situational motivation during collaborative learning by studying temporal changes in students' expectancies for success, and how those are related to students' general</p>

		<p>motivational beliefs, motivation regulation skills, and situational appraisals of task values and costs. 91 students took part in the data collection, answering a questionnaire on general motivational beliefs in learning biology and chemistry and motivation regulation strategies, completing a collaborative science task, and filling out a repeated situational self-report. Two motivational profiles, that differed significantly in terms of students' situational expectancies for success, were identified using a latent profile analysis. The profiles evidenced situational changes in students' motivation during a collaborative learning task. Moreover, the results show that the students' general motivational beliefs predicted the profile membership, but also that motivation changes momentarily during a collaborative science task, and the collaborative learning setting can reduce the situational appraisals for costs.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Tim URDAN Co-Authors: Eleftheria Gonida Georgia Stavropoulou</p>	<p>Student motivation and teacher-student relationships: A comparison of Greek and German contexts</p>	<p>To gain a better understanding of student motivation and engagement, we examined the effects of two social-contextual variables on student motivation and engagement. We compared the associations between perceived teacher-student relationship quality (TSRQ) on motivation and engagement among middle school students in two different cultures, Greece and Germany. Mean comparisons revealed that Greek students had generally more positive motivation and engagement profiles than German students but we found no differences in perceived TSRQ between the two countries, although there was a significant gender x country interaction. Regression analyses indicated that perceptions of TSRQ are associated with students' achievement goals, engagement, and belonging. In addition, there is some evidence that the strength of the associations between TSRQ and engagement differs by country. Taken together, these results suggest that factors within the student, classroom, and sociocultural context can influence student motivation and engagement. To gain a more thorough understanding of motivation and engagement, these sociocultural factors should be considered in future research.</p>
<p>Tim URDAN Co-Authors: Johanna Ott Martin Daumiller Markus Dresel</p>	<p>Teacher identity development: A comparison of Greek and German middle grades teachers</p>	<p>Teacher identity is a multifaceted construct that includes important sociocultural components, such as the culture and educational systems in the countries where teachers work. We conducted individual interviews with middle-grades teachers in Greece (n = 24) and Germany (n = 17) to examine similarities and differences in their professional identities. Most teachers in both countries discussed how they evolved from overly controlling classroom managers to a warmer approach with clear professional boundaries with students. Teachers in both countries also frequently mentioned the impact of becoming parents on their professional identities. There were also important differences between teachers in the two countries, including a greater emphasis on adopting a social-worker role among German teachers and a greater emphasis on subject matter expertise and delivery in Greece. These differences may be attributable to differences in the school systems. In Greece, teachers worked in mixed-ability neighborhood schools with an emphasis on academic development, whereas in the tracked school system in Germany teachers worked in the lowest academic school level, serving mostly lower-income</p>

		students and focusing on preparing students for work. Consideration of these socio-cultural factors is important when trying to develop theories about teacher identity and its effects on teacher motivation, burnout, and well-being.
Sabiha ÜZÜM Co-Author: H. Özlen Demircan	Emotion across cultures: Comparative analysis of emotion-related contents in children's storybooks	The present study aims to discover the role of cultural context in predicting emotion-related contents found in children's storybooks written in Türkiye and written in Western countries and translated into Turkish. The study was conducted as a cross-sectional predictive study by collecting data from 21 children's storybooks. In the narratives of the storybooks, the focal themes of emotional incidents as social & personal and attribution of emotions to others and to self were coded deductively as categorical variables. Log-linear analysis was preferred to analyze the data, depending on the categorical nature of all the study variables. The preliminary results indicated that cultural context could be a predictor of both focal themes of emotional incidents and attribution of emotions. In other words, in the preliminary analysis, cultural context significantly predicted emotion-related content in children's storybooks. In this context, it was revealed that Turkish storybooks are more inclined towards depicting collectivist emotion-related content rather than individualist ones, in comparison to Western storybooks.



Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Thijmen VAN ALPHEN Co-Authors: Joost Jansen in de Wal Jaap Schuitema Thea Peetsma</p>	<p>Day-to-day relations between teachers' Future Time Perspective and work-related stress</p>	<p>Many teachers experience stress from their work, leading to increased poor performance and burnout. How teachers perceive their future may be related to these stress experiences. However, much about the relationship between teachers' Future Time Perspective (FTP) and their stress experiences remains unclear. This study was aimed to gain a deeper understanding of the nature and direction of the relationship between FTP and work-related stress among teachers. To achieve this, we employed daily measurements to account for the dynamic nature of teaching as a profession and to minimize memory bias. 151 secondary school teachers complete short daily questionnaires for 15 consecutive workdays, reporting on their levels of their work-related stress and FTP. The data were analyzed using Dynamic Structural Equation Modeling, allowing for the separation of between- and within-level variance. When comparing teachers, the results showed that those who thought more about the future also reported more stress. However, when teachers showed more positive feelings towards their future, they reported less stress. These results are reflected in the correlations within days, but not found in the cross-lagged effects from one day to the next. These findings may indicate that positive feelings moderate the thoughts teachers have regarding their future. The absence of a day-to-day relationship could suggest that each new day presents distinct challenges which are largely overcome on that day itself. To better capture the dynamics between FTP and stress, future studies may examine this relationship on an even smaller time scale (e.g., from hour to hour).</p>
<p>Wieke VAN DER GOOT Co-Authors: Nico Van Yperen Robbert Duivier</p>	<p>Do individual differences alter effects of supervision styles on psychological needs and well-being?</p>	<p>In Self-Determination Theory (SDT) literature, there is a theoretical debate whether individual difference variables, such as need strength, may influence need-based experiences. In this study, we examined whether junior doctors' work-related need strength modified the appraisal and effects of consultants' supervision styles. We hypothesised that supervision styles predicted affective states through need-based experiences (Hypothesis 1). Next, we predicted that the effects of need-based experiences on affective states would increase when junior doctors' need strength was higher (Hypothesis 2). Finally, we anticipated that the effects of supervision styles on need-based experiences, and accordingly, affective states, would</p>

		<p>increase when junior doctors' need strength was higher (Hypothesis 3). We conducted a secondary analysis of an experimental vignette study of supervision styles among junior doctors (N = 150, Mage = 29.81, 73.3% female). First, we analysed unmoderated mediation effects and found – similar to previous findings – that supervision styles impacted junior doctors' positive and negative affect through need satisfaction and need frustration, respectively (Hypothesis 1). Next, we performed second and first stage moderated-mediation analyses, respectively. The outcomes showed that work-related need strength did not modify the effects of need-based experiences on affective state (Hypothesis 2), nor did it modify the effect of supervision styles on need-based experiences, and accordingly, affective states (Hypothesis 3). These findings underline the importance of considering both need satisfaction and frustration as underlying mechanisms for explaining well-being in Post-graduate Medical Education. Furthermore, the lack of moderation of work-related need strength endorses SDT's principle of universality.</p>
<p>Sanne VAN DER VEN Co-Authors: Jojanneke van der Beek Eva van de Weijer-Bergsma Evelyn Kroesbergen</p>	<p>Effects of positive and negative feedback on math emotions, self-concept and performance</p>	<p>Feedback on students' academic performance can strongly influence affect and achievement (Hattie&Timperley; Wisniewski et al 2020). Typically, positive feedback is related to positive emotions and high performance, and negative feedback shows the opposite pattern (Goetz et al., 2023). However, performance and feedback are strongly intertwined, leading to possibly confounding effects. In the present study we used an experimental approach to separate the effect of feedback from possible pre-existing effects of ability differences. To this aim, 219 6th-grade students were randomly assigned to one of three types of feedback: positive, negative, or control. They completed a math test and were then told that relative to their classmates they had performed very well (positive feedback condition), they had performed poorly (negative feedback condition), or they were only reminded of the test, without feedback (control condition). After receiving the feedback they rated their emotions (anxiety, anger, enjoyment, hope) and mathematics self-concept, and they completed a second math test. Path models were fitted using Mplus (Version 8.3; Muthén & Muthén, 1998-2019) to analyse the effects of this randomized feedback manipulation on emotions and self-beliefs. Prior mathematical self-concept and prior mathematical abilities were included as moderators. The results showed no main effects of positive feedback. There were negative effects of negative feedback on emotions and self-concept, but a positive effect on performance. The results show that a single instance of negative feedback manipulation can affect children's math-related emotions and self-beliefs. Results are discussed in relation to motivational theories and daily educational practice.</p>

<p>Nele VAN DOREN Co-Authors: Leen Haerens Johnmarshall Reeve Hye-Ryen Jang Arne Bouten Sofie Compernelle Katrien De Cocker</p>	<p>Uncovering longitudinal relations between teachers' (de)motivating styles and student motivation</p>	<p>Self-Determination Theory-based research has indicated that students who perceive their physical education (PE) teachers as more motivating tend to exhibit higher levels of autonomous motivation and lower levels of controlled motivation and amotivation, while the opposite holds true for students who perceive their PE teacher as more demotivating. However, these findings are predominantly based on cross-sectional data, which are insufficient for determining the causality of associations. This study extends previous SDT research by relying on longitudinal data. In total 339 secondary school students participated in this study (M age = 15.24 (1.60) years). The students filled in an online questionnaire assessing their motivation for PE and their perception of their PE teacher's (de)motivating style at two different time points. Cross-lagged path panel analyses were performed to investigate the direction of the relation between students' motivation and their perception of their PE teachers' (de)motivating style. Results showed that students' perceptions of their PE teacher's (de)motivating style at T1 did not predict their motivation at T2. However, students' motivation at T1 predicted their perceptions of their PE teacher's (de)motivating style at T2. In conclusion, it seems that students' motivation drives PE teachers' (de)motivating style, instead of the opposite pattern. This is problematic as the rich get richer (intrinsically motivated students get taught by a motivating teacher), while the poor get poorer (amotivated students get taught by a demotivating teacher). Thus, it is important to make teachers aware of these dynamics to the benefit of the students.</p>
<p>Daphné VAN LOOY Co-Authors: Johan van Braak Amélie Rogiers Maarten Vansteenkiste Carolien Frijns</p>	<p>Looking into students' test-taking motivation through the lens of their goals and motives</p>	<p>Today, researchers explore how variations in students' test-taking motivation (TTM) influence their educational careers. Existing research based on Expectancy-value Theory, however, struggles to explain variations in students' TTM within low-stakes test contexts. This study proposes a TTM framework that addresses both students' goals (Achievement Goal Theory; AGT) and motives (Self-Determination Theory; SDT) to examine variations in their TTM. Based on the Goal Complex Model, it can be expected that not only students' goals but also their motives for pursuing them can vary. This research examined the occurrence of secondary school students' test-taking goals (AGT) and motives (SDT) and their relation with students' background characteristics. This was investigated by means of semi-structured interviews (n=29) and a student questionnaire (n=1628) within the context of the newly introduced central assessments for mathematics (i.e., an authentic low-stakes test context) in Flanders. Based on the interview data, on the one hand, thematic analysis showed the occurrence of students' achievement goals in the context of these assessments (i.e., task-, self- and other-based goals). Moreover, these goals were expanded with a growth-based goal. Based on the questionnaire data, on the other hand, structural equation modelling results revealed how students' goals and</p>

		<p>motives are related to their background characteristics such as their gender, socio-economic status, and academic track. The study's findings not only contribute to understanding TTM dynamics but also highlight the value of the novel TTM approach to examine variation in students' TTM. Finally, the study sheds light on the potential implications for educational assessment and practice.</p>
<p>Linda VAN ZUTPHEN Co-Authors: Johan Lataster Laura Huiberts Renate de Groot</p>	<p>Students' psychological needs and emotional well-being in teacher presence versus teacher absence</p>	<p>The emotional well-being of secondary school students is at stake, which has negative consequences for their study success. Research suggests that an educational context that meets the three basic psychological needs—autonomy, competence, and relatedness—can support emotional well-being. However, little is known about these factors in secondary education in the context of teacher presence. The current study aimed to investigate the moderating role of teacher presence on the association between psychological needs and emotional well-being within secondary school students. Data were collected using experience sampling among 55 students from a secondary school in the Netherlands. Momentary psychological need satisfaction and emotional well-being (positive and negative affect) were assessed at 10 random timepoints a day for seven consecutive days. Additionally, information about teacher presence, social context, and educational activities was collected. Data were analyzed with multilevel regression analysis. At the individual level, autonomy and competence satisfaction were significantly positively associated with positive affect, and negatively associated with negative affect. Students perceived significantly more autonomy and less relatedness satisfaction during teacher absence compared to teacher presence. A stronger positive association between autonomy satisfaction and positive affect was found during teacher presence than during teacher absence. Teacher presence moderated the association between autonomy satisfaction and positive affect, suggesting a distinctive role of the teacher in facilitating basic psychological needs and emotional well-being. Further research into teacher presence, what teacher behaviors are important, and how this relates to SDT-supportive education and could improve students' emotional well-being in the daily educational context is needed.</p>
<p>Kati VASALAMPI Co-Authors: Valtteri Eskola Tuomo Virtanen</p>	<p>Support and self-beliefs preventing disengagement and dropping out of upper secondary education</p>	<p>In the present longitudinal study, we examined the role of the support from teachers and students on upper secondary students' competence beliefs (i.e., self-concept) in literacy and in math, and further, on their school engagement during upper secondary education. Moreover, we examined whether the support, beliefs, and school engagement predict intention to drop out or the completion of upper secondary education. The sample consisted of 1626 Finnish students, who were examined three times: 1) during the first year in upper secondary education (T1, age 16-17), 2) during the third year in upper secondary education (T2) and 3) 3.5 years from the start of upper secondary education (T3). Information on the participants'</p>

		graduations from upper secondary education was achieved from school registers. The results indicated that when students have strong support for schoolwork from the beginning of the upper secondary education studies, they are likely to have high self-concept. Strong support combined with high self-concept facilitated students' school engagement during upper secondary education studies. The high school engagement, in turn, prevented from intention to drop out and added likelihood for completing upper secondary education. Findings highlight the importance of social context as a tool preventing students from dropping out of upper secondary education.
Cécile VASSAUX Co-Authors: Joris Felder Gaëlle Molinari	Understanding teacher well-being: An exploratory study through the lens of social representations	Teacher well-being is an increasingly urgent and complex issue in education. The understanding of this phenomenon is crucial to improve the work quality of teachers. However, the teachers' vision of their occupational well-being and the way how their characteristics could influence their vision have not yet been investigated. Addressing this research gap, this study aims at exploring the teachers' occupational well-being through a social psychological lens, using the theoretical framework of social representations. The objective is to understand how Swiss upper secondary teachers perceive their well-being and how teachers' characteristics might shape teacher social representations. In total, 70 teachers from the Geneva Canton have completed the questionnaire composed of sociodemographic questions and the free association technique. This technique invited the participants to associate the first five words that came spontaneously to their mind based on the stimulus "teacher well-being". The most frequent produced terms were then analysed through a factorial correspondence analysis.
Sophie VON DER MÜLBE Co-Authors: Kristina Stockinger Anne Scheunemann Lena Sofie Kegel Jens Fleischer Detlev Leutner Joachim Wirth Carola Grunschel Markus Dresel	Motivated and feeling good? Effects of motivational regulation on student well-being and motivation	While motivational regulation (MR) has been shown to predict study motivation and academic success, its relations with students' subjective well-being (SWB) have received little attention. Initial evidence suggests that apart from promoting achievement, feeling motivated may also imply feeling good which, in turn, forms a critical component of students' health. However, these relations are not yet well understood, and prior research on MR outcomes has generally relied on cross-sectional designs. Moreover, recent research highlights that effective MR comprises multiple components beyond frequency of strategy use, which has been the primary focus to date, namely situation-specific fit and application quality. Therefore, we adopted a comprehensive approach to MR and SWB differentiating between frequency of strategy use, situation-specific fit, and application quality as well as affective and cognitive facets of SWB (anxiety, boredom, hope, joy; study and life satisfaction) and conducted a four-wave longitudinal study with university students (N=527). We examined influences of frequency, situation-specific fit, and application quality of MR strategy use and regulatory effectiveness on changes in affective and cognitive

		<p>facets of SWB and motivation in terms of expectancy of success and study value as more distal MR outcomes. Preliminary results from two measurement points show that all three MR components as well as regulatory effectiveness at the semester beginning (T1) contributed to favorable changes in various aspects of students' SWB and motivation from T1 to three months later before the exam period (T2). The findings have implications for revisiting MR theories and developing effective and efficient interventions promoting SWB.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Bente WALGERMO Co-Author: Per Henning Uppstad	Motivational dynamics within a reading test situation: The power of situational interest	School assessments impact our interest and confidence in future tasks. To cultivate progressive learning environments, classroom assessments should reflect engaging instruction, boosting students' motivation and self-assurance in learning, even during assessments. However, given that most studies compare performance and motivational factors only after task completion, attention towards students' motivational dynamics during classroom assessment is scarce. To explore how students' motivation and performance may alter during assessment, the present study investigates third grade students' motivation and performance over 3 sections of a mandatory reading screening test (N=526, mean age 8.6, 49.7% girls). Before and after each test-section, students' situational interest and self-efficacy were reported in addition to their willingness to undertake similar tasks in the future (continued interest). The cross-lagged reciprocal effects SEM-models revealed pre-task situational interest as stronger predictor for continued interest for every subtest than actual task performance. General reader self-concept and interest for reading were controlled for in the equations. Only for spelling, continued interest was also supported by post task self-efficacy. Results further indicate that pre task situational interest was the strongest predictor for whether the students would like to work with similar tasks in the future. Meaning that initial situational interest predicts continued interest for such reading tasks above and beyond actual task performance. Consequently, the importance of triggering situational interest in assessment situations both for test developers and classroom instructional practices are discussed.
LaVonda WALKER Co-Authors: Sierra Outerbridge Michelle Taub	Emotional bridge: Connections between emotions and keystroke logging in first-year writing students	Affective computing technology tools can bridge the gap between educator and student perceptions of emotions while engaged in self-regulated learning in academic writing courses. This study investigated the relationship between 1) emotions and keystroke logging behavior in writing in first-year writing students and 2) emotions and students' perception of their writing. Results indicate joy decreased as text production increased. However, there was no statistically significant difference in basic emotion expressions based on students' perceptions of their writing. Future research seeks ways to use effective technologies to identify student emotions,

		which can inform how educators develop instructional support for learners in the college environment.
Zheni WAMG Co-Authors: Steve Carroll Eric Wang	Bridging employees' perceptions of CSR, sense-making, and engagement for successful self-regulation	This research focused on a calling conditioned path model from perceived corporate social responsibility (CSR) to work engagement via meaningfulness under the framework of self-determination theory. Survey data collected from 224 corporate employees in the US were tested using the PROCESS plugin (version 4.3) in SPSS. Regression results supported the positive direct and indirect paths from perceived CSR to meaningfulness and work engagement but not the conditioning effect of calling. Limitations, future research, and implications were discussed as this research expanded the micro-CSR research and unboxed the assumptions of employees as autonomous agents seeking consistent interpretation and authentic perception of organizational practices in CSR during their sense-making. Non-confirming of the calling conditioning the path model shed light on it being a dynamic multi-dimensional and multi-level construct to be further researched.
Netta WEINSTEIN	Motivation and need contributions to daily well-being: Both social and solitude contexts matter	Research to date shows that daily satisfaction of the needs for relatedness (feeling connection to others), autonomy (volitional and self-congruent action), and competence (efficacy within important actions) fosters emotional well-being (e.g., Reis et al., 2000), but those findings largely reflect experiences during social interactions. Does solitude time meaningfully contribute to daily well-being, insofar as it can satisfy psychological needs? And, are needs more likely to be satisfied in choiceful versus forced (i.e., autonomous) solitude and social contexts? This talk will present findings of a three-week daily diary study (N=178) assessing autonomous motivation and satisfaction for relatedness, autonomy, and competence in two complementary everyday contexts: during solitude and social time. I will explore findings about the relative benefits of psychological need satisfaction within these two settings. I will also explore their compensatory capabilities and address the question: do experiences in one setting compensate for their deficit in another? Finally, I will present findings linking motivation for solitude to psychological need satisfaction experienced during this time. Findings will speak to the roles of motivation and emotion in everyday contexts and to what it means to have 'balance' between different modes of daily life.
Julia WELBERG Co-Authors: Daniel Laumann Susanne Heinicke	How do empathizing and systemizing influence interest, motivation and enrollment in physics?	German students in secondary schools generally show low interest and motivation in physics, which leads to low enrollment in physics courses in upper secondary schools. This trend is particularly pronounced among girls compared to boys. However, there are of course also boys and girls, for whom that does not apply. This study attempts to analyze which one characteristic of a person beyond gender, which might influence interest and motivation in physics as well as preferences regarding taking physics courses in upper secondary schools. In this regard, it is

		examined how peoples' cognitive style with reference to the Empathizing-Systemizing Theory as a further individual characteristic influences interest, motivation, and enrollment with respect to physics at school. The study (N=174) shows a strong influence among upper secondary students of systemizing on both interest and motivation in physics. In a path model it can be shown that that there is a strong influence of a tendency to systemize, while gender has only a small influence on the motivation to learn physics. The results of the study indicate that the cognitive style of individuals should be considered just as gender and other characteristics, in measures to increase students' interest and motivation in physics to facilitate that more students take physics courses in the upper school in the future.
Matilde WENGER Co-Authors: Jean-Louis Berger Marina Fiori	Teaching styles and empathy in vocational education and training: How much do the concepts overlap?	Empathy and teaching styles are key elements for a successful teacher-student relationship. This also applies to vocational education and training (VET), an educational context in which we investigated the links between empathy and teaching styles. The study's specific goal was to empirically evaluate the similarity of these two concepts, using multidimensional positioning analyses (ALSCAL), a method endorsed by self-determination theory (suggesting a circumplex approach of teaching styles). To this end, 105 Swiss VET teachers completed an online questionnaire. Empathy was measured using a four subdimensions scale (empathic concern personal distress perspective-taking and fantasy), as were teaching styles (autonomy support structure control and chaos). Results showed that the circumplex approach was supported even when including empathy aspects. Concurrently, empathy's components were clearly distinct from the four teaching styles. More specifically, a first axis identified autonomy support and structure (teaching style) as opposed to personal distress (empathy). A second axis identified control and chaos (teaching style) as opposed to perspective-taking, empathic concern, and fantasy (empathy). Conversely, teaching styles were not diametrically opposed, but were partly opposed to empathy facets. Hence, the first axis distinguished between personal distress on the one hand and autonomy support and structure on the other hand, while the second axis contrasted the other three empathy facets with control and chaos. Accordingly, our results revealed a marginal empirical and conceptual overlap between teaching styles and empathy and point to the importance of including empathy as an additional dimension describing the way teachers interact in class with apprentices.
Egon WERLEN Co-Author: Christof Imhof	The influence of emotional states on attention in tasks with self-evaluation	In this study, we used data from 44 undergraduate students from 14 classes to investigate the influence of the emotional states valence and arousal on attention and whether the addition of students' self-evaluation scores makes a difference. There is evidence in the literature that emotional states influence attention, which is defined as the focus on stimuli and information. Increased attention promotes learning

		<p>performance. This also applies to self-evaluation, which according to Rolheiser and Ross (2001) focusses on attention. Using a multilevel analysis with courses on the second level, we were able to show that valence, but not arousal, predicts attention. The addition of self-evaluation improves the model but has no significant influence on the prediction by valence. The results are largely consistent with the specialised literature, except that in our study arousal shows no influence on attention. This result is important for us a) for the further development of our tasks with self-evaluation, and b) for the development of non-intrusive measurement methods for attention (e.g. with mouse tracking) to provide personalised feedback during the performance of tasks.</p>
<p>Lucas WLOCH Co-Authors: Sophie von der Mülbe Markus Dresel Carola Grunschel Lucas Wloch</p>	<p>Behavioral and emotional academic procrastination scale: Validity and relations to academic outcomes</p>	<p>The Behavioral and Emotional Procrastination Scale (BEPS; Bobe et al., 2022) is a two-dimensional questionnaire assessing behavioural and emotional aspects of academic procrastination. The behavioral subscale measures voluntary delay of intended actions, while the emotion-related subscale gauges subjective discomfort, encompassing worries, guilt, and negative mood during procrastination. Previous research on a non-representative sample established factorial validity, measurement invariance, and internal consistency. The present study, using a representative sample of N = 890 higher education students, reaffirms BEPS validity with tests of factor structure, internal consistency, measurement invariance. We also tested theoretically implied relations with other relevant constructs and offer standardized normative values. The results supported the originally suggested two-dimensional model and we found robust internal consistencies. Multigroup CFAs yielded scalar invariance for gender, fields of study (social sciences, STEM, other), and different types of institution (university, university of applied sciences). Examining the procrastination dimensions' relations to other variables in an integrative structural equation model, motivational costs were significantly related to delay but not to the emotional component of procrastination, namely subjective discomfort. Both dimensions regressed on overall study satisfaction and grade point. T-transformed normative values and percentile ranks allow interpretation of individual scale scores in relation to the population and facilitate their use in practical higher education diagnosis and research.</p>



Presenting Author, Co-Authors	Title of Presentation	Abstract
Fang XU	Educational utility value and perceived difficulty for Chinese adolescents	<p>This study investigates the relationship between socioeconomic status (SES), parenting factors, and educational motivation outcomes—specifically, utility value (UV) and perceived difficulty (PD)—among Chinese adolescents across diverse subjects and age groups. Analysing data from the China Education Panel Survey (CEPS) covering two age cohorts (12-13 and 14-15), our findings reveal a higher UV and lower PD among the younger cohort. Compared with school and class differences, individual characteristics played a dominant role in explaining UV and PD variances. In examining the role of SES and parenting factors, SES emerged as a positive predictor of English UV and a negative predictor of PD across all subjects, highlighting the subject-specific role of SES on different motivation outcomes. Parenting factors, including parental demandingness, responsiveness, time spent with children and aspiration, showed varied relationships with UV and PD. While responsiveness and aspirations generally predicted higher UV and lower PD, indicating a positive educational pathway, demandingness presented as a "double-edged sword" positively predicting UV in all subjects for both cohorts, Mathematics PD among younger cohort and English PD among older cohort. Furthermore, the study found significant interactions between SES and specific parenting factors, indicating that parental time spent with children and aspirations toward bachelor's degree and above might play a stronger role for higher SES adolescents in predicting higher UV and lower PD compared to lower SES counterparts. This study also underscores the significant role of SES and parenting on Chinese adolescents' English educational motivations, revealing the importance of family resources in English learning.</p>



Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Junlin YU Co-Authors: Tieme Janssen Sibel Altikulaç Smiddy Nieuwenhuis Nienke van Atteveldt</p>	<p>Developmental changes in mindset meaning systems: The role of perceived classroom goal structures</p>	<p>Students' mindset, effort beliefs, and achievement goals are traditionally conceptualized as forming two coherent meaning systems: a growth mindset-mastery goal system and a fixed mindset-performance goal system. However, recent research shows that students often combine these elements in more nuanced ways, and these combinations may evolve over time. This longitudinal study aims to explore patterns and changes in students' mindset meaning systems, and the role of perceived classroom goal structures in contributing to the changes. Participants were 430 Dutch adolescents followed over the initial two years of secondary education (Grades 7–8, MAgeT1 = 12.9). Four mindset profiles emerged consistently across two time points: Growth mindset-Low PG (performance goals), Growth mindset-Moderate PG, Mixed mindset-High PG, and Fixed mindset-Disengaged. The Growth mindset-Low PG profile was the largest in Grade 7, whereas the Fixed mindset-Disengaged profile became the largest in Grade 8. Maladaptive transitions were observed in 21% of students, contrasting with adaptive transitions in only 11% of students. Notably, maladaptive transitions in mindset meaning systems were linked to an increase in perceived performance-avoidance goal structure in the classrooms. This suggests that creating a safe space for students to fail or make mistakes may be essential to growth mindset development.</p>

Z

Presenting Author, Co-Authors	Title of Presentation	Abstract
Linda ZENGER Co-Authors: Barbara Flunger Tamara Van Gog	Towards measuring students' autonomy regulation strategies as part of their motivation regulation	<p>University students regularly struggle with their motivation. This is problematic because motivation is strongly associated with academic achievement and well-being. According to Self-Determination Theory, motivation comprises a set of regulation styles directing students' engagement. Within this set, intrinsic and identified regulation have been found to be more advantageous for academic outcomes than introjected and extrinsic regulation. Intrinsic and identified regulation can be fostered through autonomy support. Yet, university students often cannot rely on support from others. While working independently, students can apply motivation regulation strategies, e.g., mastery self-talk, to enhance their motivation. Two motivation regulation strategies that have been investigated in prior research, could be seen as autonomy regulation. Students may also apply further autonomy-regulating strategies. However, although autonomy support has received a lot of attention, whether students use autonomy-regulating strategies on their own has hardly been explored. Here, we investigated if five additional autonomy-regulating strategies (providing oneself with choices, taking one's own perspective, acknowledging one's own feelings, displaying patience towards oneself, and using invitational self-talk) can be confirmed empirically and differentiated from established motivation regulation strategies. Moreover, we investigated the associations between autonomy-regulating strategies and distinct types of motivation, as part of motivation regulation. In two samples with university students (N=221, N=155), confirmatory factor analyses showed that the autonomy-regulating strategies could be empirically distinguished. Using structural equation models, we found that only displaying patience towards oneself was positively associated with identified regulation. Considering all strategies together, mastery self-talk showed the most robust associations with outcomes in both samples.</p>
Yuanyuan ZHU Co-Authors: Diana Dolmans Latifa Abidi Rashmi Kusurkar	Fostering motivation through a Societal Impact Project: Students' and teachers' perspectives	<p>Background: Fostering autonomous motivation is conducive for students' experiences in their study programmes since it is associated with many positive outcomes. However, stimulating students' autonomous motivation for their curricula remains a challenge. This study designed and evaluated an extracurricular project called the 'Societal Impact Project' designed on the combination of three</p>

<p>S. Eleonore Köhler Hans Savelberg</p>		<p>educational principles: authentic tasks, collaborative learning, and scaffolding. The project aimed to support students' basic psychological needs of autonomy, relatedness, and competence which according to the Self-determination Theory, facilitate students' autonomous motivation. Methods: First-year bachelor's students in the studies of Biomedical Sciences and Health Sciences participated in the project. Students as well as coaches participated in focus groups conducted after the project. We adopted thematic analysis. Results: We synthesized three main themes. First, having freedom was motivating, but students needed support. Second, working in groups work could be motivating or demotivating, but communication made a difference. Third, society relevant problems stimulated motivation and learning, but they also posed challenges. All three themes were interconnected in facilitating students' motivation. Conclusion: Students felt autonomously motivated when they had autonomy with support, relatedness based on active collaboration and effective communication, and competence through structured activities in the project, support from coaches, and group work on authentic problems.</p>
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POSTER SESSIONS

A

Presenting Author, Co-Authors	Title of Presentation	Abstract
Ann-Charlotte AKSNES	Engagement in reading fiction in L1 Norwegian at upper secondary school, preparatory program	Reading fiction has occupied a central role in the L1 Norwegian subject, but the premise has changed in the last fifteen years. Studies show that young people's reading habits in Norway are changing. We know that engagement is important in learning in general and in reading development specifically. It is a pressing matter to develop knowledge on how to influence students' engagement, as well as to support L1 teachers in enabling their students to be engaged readers who participate actively in their own learning. The project has a qualitative research design using multiple methods. The aim is to create knowledge on teachers' and students' perspectives about the factors that can enhance engagement in reading fiction in L1 Norwegian at upper secondary school, preparatory program. To do this we will conduct three studies. First, focus group interviews with L1 teachers from upper secondary school on their perspective on what enhance and undermine engagement in reading fiction in school. Secondly, through classroom observation, we will study lessons in the L1 Norwegian subject. Finally, interviews with students for a deeper understanding of the findings. The result of the project will both contribute to the broader discussion on how to engage adolescents in reading fiction in L1, and, more specifically, point towards implications for the L1 instruction in upper secondary school.

B

Presenting Author, Co-Authors	Title of Presentation	Abstract
Lisa BENCKWITZ Co-Author: Bastian Carstensen	The role of family characteristics in a motivation and achievement intervention study	The present study plans to investigate the role of structural (e.g., SES) and process-related family characteristics (e.g., home numeracy activities) in the effectiveness of a comprehensive intervention that was designed to improve the mathematics achievement and motivation of students in Grade 5. Therefore, data from N = 1,044 students and N = 459 parents that was collected in three measurement points throughout a whole school year will be analyzed. The intervention program consisted of access to an adaptive e-learning program, remedial teaching lessons, and a motivation intervention. The study included three experimental groups who received variations of the intervention program and one control group. To investigate the moderating role of family characteristics on the intervention effects regarding students' achievement and motivation, interactions between the dummy variables representing the experimental groups and the family characteristics will be tested in Mplus. Findings will be available at the time of the conference.
Florian BERENS Co- Author: Sebastian Hobert	Motivation relates to learning behavior, success and drop out in an undergraduate statistics course	A positive correlation between motivation and learning success has been empirically established for numerous disciplines. Despite this old and stable finding, however, little is known about why this intuitively plausible relationship exists. Based on self-reports by learners, some studies suggest the hypothesis that an increased learning effort could be the explanatory mediating factor. However, there is a lack of studies that integrate learning behavior into the investigation of mediating explanations for the positive relationship between motivation and learning success in a more objective and multidimensional way. The present study addresses this gap by examining an introductory statistics course for students in social science subjects for which, in addition to motivational data, detailed information on learning behavior is available that is obtained from the usage data of the learning management system used. The analyses of this data show that, on the one hand, there is indeed a positive relationship between motivation and learning effort invested, but at the same time variables related to the distribution of learning are also significantly related to motivation in a way that makes them also appear to be suitable mediators. In addition, the analyses show that motivation is not only related to learning success among those who complete the course, but can also predict who will drop out. Those who are particularly unmotivated drop out even earlier than

		others. Here, too, the learning behavior of prospective dropouts shows differences at an early stage.
<p>Femke BORST Co-Authors: Lisette Hornstra Barbara Flunger</p>	<p>A multi-informant approach on teachers' need-supportive teaching practices and student motivation</p>	<p>According to self-determination theory, teachers can boost motivation and academic performance of their students by supporting their three basic psychological needs – autonomy, competence, and relatedness. Need support can be provided through autonomy support, structure, and involvement. Often, need support occurs in dyadic (1-on-1) interactions between the teacher and the student. Previous research indicates that the need support provided by teachers in these dyadic interactions is difficult to measure accurately. Specifically, the perceptions of teachers and students regarding the provided need support only show low correspondence. The aim of this study is to address limitations of teacher reports and student reports on need-supportive teaching by exploring perceptions of peers on need-supportive teaching as a unique supplementary perspective. By integrating this unique perspective of peers into the investigation of dyadic teacher-student interactions, differences in need-supportive teaching can potentially be further elucidated, and student outcomes may be more accurately predicted. To achieve this, we examine how the reports of peers, teacher reports, and student reports are related to one another and to what extent the reports of peers have unique predictive value beyond student and teacher perceptions for students' motivation, engagement, and academic performance. This research may contribute to the development of new instruments for investigating dyadic teacher-student interactions within the framework of self-determination theory, and potentially also to the advancement of instrumentation for educational practice.</p>
<p>Dovile BUTKIENE Co-Authors: Saule Raiziene Lauryna Rakickiene</p>	<p>Dimensionality of cost in Lithuanian adolescent sample</p>	<p>Based on expectancy-value theory (Eccles et al., 1983) we aimed to explore dimensionality of perceived cost of studying math in sample of Lithuanian adolescent students. More specifically, we aimed to investigate whether the construct of cost is best represented by a four-dimensional structure or if a unidimensional structure would suffice. Also, we sought to determine is it reasonable to postulate general cost factor alongside more specific sub-dimensional costs. The sample comprised of 1497 ninth-graders (43.5 % boys, 55.3 % girls, 1.2 % other; mean age = 14.88, SD = 0.34), from 24 public schools located in cities, towns and rural areas throughout country. Perceived cost was measured using the scale of 18 items, corresponding to four facets of cost (effort cost, opportunity cost, emotional cost, and psychological cost). The results of this study showed inadequacy of a unidimensional model for interpretation of perceived cost and provided support for the internal structure of the four cost dimensions as theoretically anticipated. The results also showed that both general cost factor and cost sub-dimensions are of interpretative value. In particular, items measuring Psychological cost loaded mostly on the respective sub-factor, while loadings on general factor were weak or nonsignificant.</p>

<p>Marius BYTAUTAS Co-Author: Sigitas Daukilas</p>	<p>Socially excluding emotions as a threat to learning motivation: The role of teachers</p>	<p>Youth social exclusion research has increasingly delved into the internalized aspects of the phenomenon, identifying internalized social exclusion as a significant counterpart to measurable forms of exclusion. This internalization encompasses individual's attitudes towards him or herself and their social environment, manifesting in socially excluding emotions such as embarrassment, insecurity, and otherness. This theoretical study aims to explore the impact of internalized social exclusion within the educational context, probing into its potential effects on learning motivation and proposing educational responses to foster inclusivity. Applying theoretical literature review method, we highlight the interconnectedness between internalized social exclusion and its impact on students' behavior and interactions within educational settings. Students experiencing internalized social exclusion often exhibit behaviors such as social withdrawal, concealment, and overcompensation. These behaviors are characterized by a focus on the self rather than engagement with the learning environment, posing challenges for curriculum internalization. In response to these challenges, we propose a shift towards character education with a psychosocial basis, aiming to foster acceptance towards the self, the social environment, and their interactions. By emphasizing the emotional integration of individuals with their surroundings as a fundamental goal, this approach offers a promising alternative to traditional inclusion measures within educational settings.</p>
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C

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Concettina CAPARELLO</p> <p>Co-Authors: Carmelo Francesco Meduri Luana Sorrenti Pina Filippello</p>	<p>Students' perceived school atmosphere and school success: The mediating role of school refusal</p>	<p>Several studies have shown that the school atmosphere perceived by students can play a key role in promoting their well-being in the classroom and their school success. However, no study to date has analyzed if the students' perceived school atmosphere could contribute to school refusal behavior and, in turn, reduce or promote students' school engagement and underachievement. A cross-sectional study (528 Italian high school students) was conducted to evaluate the mediating role of school refusal behavior (Anxious anticipation, Difficult transition, Interpersonal discomfort and School avoidance) in the association between students' perceived school atmosphere (Student Relations, Student-Teacher Relations, Educational Climate, Sense of Belonging, and Interpersonal Justice), and school engagement and underachievement. In order to evaluate the association between variables, was to carry out a structural equation modelling (SEM) with latent variables [$\chi^2(270) = 655.239, p = .000, CFI = .95, SRMR = .04, RMSEA(90\%CI) = .052(.047, .057)$]. Mediation</p>

D

Presenting Author, Co-Authors	Title of Presentation	Abstract
Martin DAUMILLER Co-Author: Jan Beck	Which goals do you pursue? Examining achievement goals of secondary school students	<p>Goals that students pursue at school determine learning engagement and academic success. Theoretically, the two fundamental types of goals (i.e., mastery and performance goals) can be distinguished based on their valence (approach and avoidance of goals) and additional facets (task and learning goals; appearance and norm goals). However, empirical investigations of this structure are rare, particularly for secondary school students. The present study aims to (a) confirm the existence of the before-described achievement goals in secondary school students, and (b) to investigate this theoretically derived goal structure along with the validation of a questionnaire for their assessment. We modified an existing scale to measure these differentiated goals in secondary education students. Cognitive interviews with 20 students provided initial evidence that the goals therein are indeed understood and pursued by students. Subsequently, N = 1,131 secondary school students filled out the questionnaire. Multilevel confirmatory factor analyses confirmed the structure of the proposed hexagonal structure of goals as well as scalar invariance across gender, age groups (lower vs. upper secondary classes), and measurements six weeks apart. Correlations with an older and less differentiated questionnaire measuring achievement goal orientations (Spinath et al., 2012) confirmed convergent and discriminant validity. School grades correlated weakly with mastery goals and the normative (but not the appearance) component of performance goals. Taken together, these results stress the importance of distinguishing between goals that students pursue at secondary school – especially within performance goals. Furthermore, our study showed that achievement goals are finely differentiated as early as lower secondary education.</p>
Brenda DOWNING Co-Author: Toni Rogat	A case study of motivation regulation and metamotivation development in a learning to learn course	<p>This study aimed to contribute to extant research which has investigated the benefits of Learning to Learn Courses (L2L) for cognitive self-regulation and learning strategies, as few studies focused specifically on motivation regulation (MR) intervention. The case study explores the quality change trajectories of employed MR strategies of undergraduates enrolled in an elective L2L course (n=43). Through analysis of course artifacts including students' written reflections, diary entries, and project planning sessions, the case study extends understanding beyond self-report survey measures and explores quality of MR strategy use and metamotivational knowledge</p>

		<p>development. The majority of students experienced quality improvement in their employed MR strategies. Six change trajectories in students' quality of MR strategies were identified with the majority of change trajectories either increasing quality or of stable adaptive quality. By closely exploring case studies of these adaptive change and positive development across the L2L course, we gain insight into the productive reflections and trials involved in modifying MR strategy use, and the social, instructional and metamotivational resources that made this growth possible. Ultimately, the nature of these qualitative descriptions of development during a motivation regulation focused SRL course has implications for guiding future development of student supports and instructional programs.</p>
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E

Presenting Author, Co-Authors	Title of Presentation	Abstract
Joseph EISMAN Co-Authors: Miriam Davidov Adar Ben-Eliyahu	Achievement goals, emotions, and self-regulated learning for disliked courses	We examined the relationship between achievement goals and behavioral, cognitive, and emotional self-regulated learning and engagement in 108 university students in a course they disliked. Correlations and linear regressions of survey data found that mastery goals predicted behavioral self-regulated learning. This may suggest that students who dislike a course may not be emotionally engaged but rely on cognitive engagement and behavioral self-regulated learning to achieve their goal. This is surprising when considering mastery goals are associated with positive emotions and that behavior, cognition, and emotions are interrelated concepts (Pekrun, 2023). Thus, we argue that the context for students' mastery goals matter.
Joseph EISMAN Co-Authors: Miriam Davidov Adar Ben-Eliyahu	Motivation, emotions, and self-regulated learning for disliked courses	Student motivation influences self-regulated learning (SRL) and engagement. However, these patterns and relationships may depend on additional circumstances, like the students' perception of their course. Following, we examined student motivation and behavioral, cognitive, and emotional SRL and engagement in 108 university students who disliked a course using achievement goal theory (Elliot & Harackiewicz, 1996) and situated expectancy value theory (Eccles & Wigfield, 2020). Correlational and linear regression analysis found that behavioral SRL was predicted by mastery goals, attainment value, expectation of success. We also found that mastery goals for a disliked class predicted behavioral SRL. Additionally, behavioral SRL was associated with cognitive and behavioral engagement of course materials, and behavioral and cognitive engagement were predicted by attainment value and expectation of success.

F

Presenting Author, Co-Authors	Title of Presentation	Abstract
Anne Christiane FRENZEL Co-Authors: Hannah Kleen Anton Marx David Sachs Franziska Maier-Bosch Mareike Kunter	Is it in their words? Teachers' enthusiasm and their natural language – A sentiment analysis	Teacher enthusiasm is an undisputed facet of high-quality instruction with demonstrated positive effects on student outcomes (Feng et al., 2023; Kunter et al., 2013). Existing research typically operationalized teacher enthusiasm via trait-based teacher- or student self-report. Strikingly little is known how teachers' trait enthusiasm manifests in their actual in-situ classroom behavior. Some findings have been reported regarding teachers' nonverbal behaviors (Keller et al., 2017), but the links between teacher enthusiasm and their language are unknown so far. The present contribution fills this research gap by applying AI-supported sentiment analysis, a branch of natural language processing, which rates the emotional sentiment of text or transcribed utterances based on emotion lexica (Liu, 2020). N=19 secondary mathematics teachers and their N=393 students participated in our study. We employed sentiment analysis to quantify teachers' emotional tone from transcribed video recordings of full mathematics lessons (45 minutes), using Remus et al.'s emotion lexicon SentiWS (v2.0, 2019). In line with expectations, there were consistent medium-sized positive correlations between teachers' and students' ratings of state enthusiasm during the videotaped lesson, on the one hand, and teachers' verbally expressed sentiment (positive intensity), on the other. Further, teachers' own, but not the students', ratings of trait enthusiasm also were positively linked with teachers' verbally expressed sentiment in the videotaped lesson. This is the first study to employ this innovative approach on transcripts of German teachers' in-class talk. Besides the expected quantitative links between teacher enthusiasm and their language, it also promises qualitative insights on emotional teacher talk in mathematics.
Luke FRYER Co-Authors: Kaori Nakao Quint Oga-Baldwin	Motivations to learn across three middle school subjects	While many factors play a role in students' motivation-to-learn, the instruction students' experience is widely acknowledged to be central. How does instruction support middle students' motivation to learn? Does it differ between subjects of study? Perceived Control Theory and Self-Determination Theory both posit their answers to these questions on a foundation of basic psychological needs: Competence, Relatedness and Autonomy. A variable and person-centered study addressed these questions across six-months: midway students' instructional experiences (Structure, Relatedness, External-Control and Autonomy-Support) and end of students' Year-9

		<p>school year (motivation to learn: regulated motivation and self-efficacy. Latent Profile Analyses were conducted based on student's motivation to learn separately in each of students' Math, Native and Foreign Language classes. This was followed by three multiple regression (simultaneous) analyses, with students' instructional experience predicting the likelihood of subgroup membership for each class. Latent Profile Analyses resulted in four subgroups: Poor-quality/Average/Introjected/Good-Quality. Across the three classes, Structure was the most important positive predictor of Good-Quality subgroup membership, with External Control playing a smaller but meaningful negative predictive role. Experiences of Relatedness predicted students' membership in the Introjected subgroup. Autonomy-support was not a meaningful predictor of subgroup membership. The Good-Quality and Introjected subgroup presented similar profiles and covariates for positive motivations-to-learn (intrinsic, identified and self-efficacy); differing only in the Introjected and Extrinsic motivation they experienced. Finding add to reviews indicating the important role of motivation profile with a high quantity motivations but of mix regulation. Findings contrast with past research which have emphasized Autonomy-Support over other instructional experiences: Structure/Relatedness.</p>
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G

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Johannes GALE</p> <hr/> <p>Co-Authors: Junlin Yu Katariina Salmela-Aro</p>	<p>Heterogeneous growth mindset trajectories in lower secondary school: Predictors and outcomes</p>	<p>The present study aims to identify diverse growth mindset trajectories among lower secondary school students in Finland. While prior research indicates a trend towards a more fixed mindset during lower secondary school, our understanding of the specific sub-trajectories remains limited. Focusing on these distinct mindset trajectories is crucial as it allows us to pinpoint student subgroups most at risk, a consideration often missed by studies focusing on average trends over time.</p> <p>Secondly, the study will investigate the role of student-centered pedagogical practices and a sense of belonging as predictors for growth mindset trajectories during adolescence. Lastly, it will explore whether these trajectories can predict academic achievement, adding a nuanced layer to our understanding of the interplay between mindset development and educational outcomes. The analysis involves three waves of longitudinal data spanning the students' lower secondary school journey, aiming to uncover distinct mindset trajectories and examine their predictors and outcomes. Unlike some previous studies, the average growth mindset in this Finnish cohort showed only a slight decline each year, providing unique insights into mindset development in this environment. Moving forward, the study will employ latent class growth curve analysis to identify distinct growth mindset trajectories and explore their associations with student-centered practices, sense of belonging, and academic achievement. This comprehensive approach aims to inform educators and policymakers on effectively supporting students in their growth mindset development during adolescence.</p>
<p>Michelle GLERUM & Kate HOPE</p> <hr/>	<p>Nurturing connections: The influence of place-based writing on motivation and emotional wellbeing</p>	<p>In this study, we employ Seligman's (2018) PERMA model, including the five essential elements of wellbeing, as the foundational learning theory in a set of ten university and community college first-year composition courses. Using place-based writing pedagogies, we explore the effects of spending time outside, writing and walking in nature—including learning about various regional, state, and national parks in our area—on students' emotional regulation and wellbeing, their motivation to learn and participate, and their overall success in the course. We draw from Chou and Hung's (2021) research that finds improved mental health and increased learning engagement among students who spent time walking in nature. Our preliminary findings</p>

		suggest that students report feeling higher levels of motivation, emotional stability, and success in the first-year writing course as a result of inviting students to spend time together outdoors.
Hernán GONZÁLEZ CRUZ Co-Authors: Tanja Fritz Martin Daumiller Stefan Janke	Investigating attitude as a moderator of performance goals and online cheating	Investigating the interplay between attitudes, performance goals, and cheating in online tests, this study examines the moderating role of attitude in this relationship. A 2x2 online experiment was performed on university students to observe how a more positive attitude towards cheating moderates the effect of performance goals on cheating behavior. Contrary to expectations, positive attitudes towards cheating did not significantly amplify dishonesty beyond performance goal-induced levels. This suggests that in low-risk online settings, positive attitudes towards cheating might not further promote cheating. The study's unique contribution lies in its novel application of paradata methodology to evaluate the moderation of performance goals and cheating.
Mikk GRANSTRÖM Co-Authors: Ita Puusepp Kaja Mädamürk Eve Kikas	Learning strategies and motivation across school levels: Similarities and differences	Students' motivation to learn and the strategies they use during learning are two important factors that affect their learning outcomes. Studies have shown that some learning strategies (LS) are more and some less effective (deep and surface LS). Both the knowledge of and motivation to use certain LS depend on students' individual characteristics (age, prior knowledge) and the context (classroom practices). The aims of the present study were 1) to examine differences between middle and high school students' perceptions of the effectiveness of specific LS and motivation to use effective LS; 2) to explore relations between motivation, LS, and grades in these two subgroups. The participants were 6287 middle school students (age 13-16) and 5476 high school students (age 17-20 years). Students completed an electronic questionnaire during school hours. Their motivational beliefs (self-efficacy, utility, and cost) concerning the use of effective LS and the perceived effectiveness of specific LS in certain learning scenarios were assessed with rating scales; students' math and history grades were obtained. Network analysis was used to examine relations between constructs. Results showed small between-group differences in accordance with theoretical expectations. Findings are discussed in relation to age and educational context.
Karianne GRØNLI Co-Authors: Bente Walgermo Per Henning Uppstad Erin Margaret McTigue	Exploring the impact of checklists on teachers' assessments and feedback on students' oral reading	The potential of feedback to influence student learning outcomes, motivation, and emotional engagement is well-established. However, the impact of feedback on students' reading development varies, and teacher feedback often misses opportunities to support student agency and motivation for reading. This study aims to explore the potential shift in feedback practices during oral reading sessions towards a student-centered approach to enhance student agency and motivation. Employing a within-subjects design, we examine the focus of assessment and feedback practices before and after implementing a checklist. Preliminary hypotheses test the impact of

		<p>checklist use on enhancing feedback practices that are more aligned with fostering a positive emotional and motivational climate for students. Anticipated results include improved feedback characteristics that support student agency, and an increased sense of agency among students in the process of learning to read. By developing a checklist as a tool for refining assessment and feedback practices, this study offers insights into how feedback can support the emotional and motivational aspects of learning to read. It contributes to new resources for teachers that help them become aware of the emotional and motivational dimensions of learning to read.</p>
<p>Zhixing GUO Co-Author: Luke Fryer</p>	<p>The role of three types of personal relevance in middle school math class interest</p>	<p>Background: 1) Self-related information processing has been pointed out in recent years to be a crucial component in interest development. However, the role of self-relatedness/personal relevance in interest development has seldom been validated empirically; 2) formal education is one of the most essential settings where students' interest for knowledge or skills can be elicited and cultivated. However, students' interest for math faces a serious decline in the middle school setting. Aims: The current study examined the role of three types of personal relevance (i.e., personal association, personal usefulness, relevance as identification) in students' class interest in middle school math class. Sample: Participants were 435 first-year middle school students in Mainland China. Methods: Students' three types of perceived personal relevance for a math class and corresponding class interest were collected across 9 weeks at 3 time points. Longitudinal-SEM tested interconnections between prior domain interest, prior math knowledge, perceived personal relevance, class interest and post domain interest. Results: The three types of perceived personal relevance presented positive predictive relationships with class interest at all three time points with large effect sizes (except personal association in Class 4). Personal usefulness exhibited the largest predictive effects on class interest in the current middle school math setting, followed by relevance as identification and then personal association. Conclusions: The results empirically supported the essential role of personal relevance/self-relatedness in interest development. The three types of personal relevance might be employed to elicit students' class interest in middle school math class.</p>

H

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Eliis HÄRMA Co-Author: Eve Kikas</p>	<p>Profiles of learning strategy related motivation, knowledge and reported use in relation to outcomes</p>	<p>This study aimed to examine middle school students' learning strategy related profiles and their relationship to learning-related beliefs, task persistence, and academic burnout. The profiles were identified according to students' strategy related motivational beliefs (indicating how motivated they are to use effective learning strategies), knowledge of learning strategies (indicating how they differentiate between deep and surface learning strategies), and reported use of deep-level learning strategies. The participants were 209 eighth-grade students. Three learning strategy related profiles were found. The results show that students with lower strategy related motivational beliefs and knowledge are more likely to suffer academic burnout than students with higher motivational beliefs and knowledge of how to learn more effectively. In addition, students who report themselves to be more motivated to learn effectively and recognize more effective learning strategies, tend to have higher task persistence and a stronger growth learning-related beliefs towards the effectiveness of using deep-level learning strategies to support their learning processes. Understanding these relationships can inform the design of interventions that promote effective learning strategies while addressing motivational factors.</p>

<p>Emiko HIROSAWA Quint Oga-Baldwin Yuka Kono</p>	<p>The development and trajectory of perceived teacher control in early adolescence</p>	<p>Perceived teacher control (TC) negatively impacts students' quality of motivation. Despite its strong negative effects on academic self-regulation and behavior, its development and properties have not been longitudinally measured. In this study, we show how TC developed in 5th and 6th grade elementary school students throughout the school year using a latent basis growth model (LBM). Development and growth are usually not consistent, changing in a series of spurts and stalls. The LBM is a subtype of a growth curve model, which adeptly trace such non-linear trends, flexibly capturing the fluctuation of a developmental trajectory and portraying a reliable path for understanding when and how much students change. The model demonstrates the accumulated percentage of growth at each wave. The sample consisted of 798 elementary school students enrolled in three private elementary schools (Japan = 2, Taiwan = 1). The Teacher Control Scale (4 items) was administered on 7 different occasions throughout the academic year. The growth of TC between grades closely mirrored each other. Also, the initial level of TC did not have an association with the amount of growth of TC. Given that students from two different country and grades share a common trend in when TC rapidly increases and decreases, we can assume that TC is not strongly affected by curricular details but by time elapsed. Future studies can investigate similarities and differences in growth rates according to developmental stages and school subjects.</p>
<p>Anders HOFVERBERG Co-Authors: Mikael Winberg Catarina Andersson Christin Almström Jacob Lundin Evelina Nordfjell</p>	<p>The limitations of autonomy-supporting teaching: Reflections from a teacher-researcher collaboration</p>	<p>Previous research has laid a strong theoretical foundation for creating instructional designs that enhance motivation. However, the practical application of these designs in educational settings has been less frequently examined. The studies that have been conducted often had limited scope—both in duration and in the motivational dimensions they explored—and rarely involved teachers in the design, delivery, and evaluation of these interventions. Consequently, there is a gap in our understanding of how to implement effective, sustainable, and practical strategies to support students' motivation in schools. This project seeks to address this gap by having researchers and teachers collaborate in designing and evaluating a year-long and comprehensive intervention to develop motivation-supporting teaching. We evaluate the intervention through classroom observations, discussions between researchers and teachers, and student questionnaires. Although the project is still underway, an initial finding suggests that strategies that are theoretically effective in fostering adaptive motivation do not appear to work for the least motivated students. Instead, a more controlling environment has shown to be more effective in transitioning these students from a state of amotivation to engagement with their schoolwork. In our presentation, we aim to not only share insights from this study but also to spark a broader conversation about practice-based research on student motivation, including its potential, challenges, and development.</p>

<p>Luca Farina HOLLRICHER Co-Author: Julia Gorges</p>	<p>Why adults learn – Motivational characteristics of participants in German adult education centers</p>	<p>For decades, research on adult participation in education has documented severe social disparities: The higher individuals' level of education, the more likely their participation in further education and training. In Germany, publicly funded adult education centers aim at providing affordable education for all citizens, to attract socially disadvantaged participants in particular. However, little is known about the socio-demographic and motivational characteristics of their participants. The goal of the current study is to investigate motivational characteristics of participants in introductory level English and computer courses, and the development of motivation over time. Drawing on expectancy-value theory, participants were asked to report on their expectancy and value beliefs (intrinsic, utility, and attainment value and cost) as well as socio-demographic characteristics and occupational goals, at the beginning, during, and at the end of the respective courses. The data collection is still ongoing, so far N = 188 adults have participated in the survey available online and on paper. The poster will present descriptive analyses of the sample from the first measurement point and look into differences in motivational beliefs as a function of gender, age, occupation and level of education. Results will be discussed against the background of expectancy-value theory and research on participation in adult education.</p>
<p>Danling HUANG Co-Authors: Johnmarshall Reeve Hye-Ryen Jang</p>	<p>Identifying the antecedents of a change in teacher self-efficacy</p>	<p>Bandura (1977, 1997) proposed four sources of self-efficacy, and later research on teacher self-efficacy (TSE) investigated these four sources as well as many other possible antecedents. The purpose of this systematic review and meta-analysis is to identify those antecedents that developmentally change TSE. This meta-analysis answers two research questions: 1. Are Bandura's four sources of self-efficacy all significant antecedents of changes in TSE? 2. Are there any additional antecedents beyond these four sources? 3. Are these antecedents moderated by other variables? We searched five electronic databases to identify 4,793 studies, 52 of which were fully consistent with the inclusion criteria. Multi-level analyses using the {metafor} package in R identified three statistically significant sources: (1) mastery feedback (i.e., mastery experience); (2) how-to modelling or instruction (i.e., vicarious experience); and (3) resources (i.e., a new source beyond Bandura's four sources). This systematic review and meta-analysis offers an up-to-date overview of the sources of TSE with strong statistical evidence considering the conceptual and methodological limitations in the existing literature (Morris et al., 2017). The antecedents found in this study provide future research with a better insight into developing TSE, including what to target and emphasise in teacher professional programmes.</p>
<p>Tahrim HUSSAIN</p>	<p>How achievement-related-emotions, and behaviour differ in appraisals of high-stake-testing</p>	<p>High-stakes examinations, also known as high-stakes testing, are tests assessing the ranging aptitudes and achievements of an individual, through coherently informing judgement. The control value theory (CVT, Pekrun, 2006) incorporates assumptions and constructs of achievement emotions through the dynamic relations of control and value</p>

		<p>appraisals. The research aim is to explore how achievement and achievement-related emotions, and behaviour of adolescent students differ in appraisals of high-stake test. The proposed research derives the rationale from the significance high-stake examinations have for students and how students, educators, and policy-makers may underestimate the overall increased demands of high-stake examinations and how this can affect students achievement outcomes and emotionally, and behaviourally. Participants were 244 sixth-form students (77.7% female, aged 16-19 years old). Validated questionnaires for achievement-related emotions and behaviour were used. The age-bracket allows for the exploration into adolescent students in Year 12 studying for their A-Level examinations. Structural equation modelling showed that anxiety and anticipatory-relief positively predicted persistence, and hopelessness negatively predicted persistence. Pride positively predicted time-management. Time-management mediated the relationship between anxiety and achievement. The propositions of CVT were supported. The positive predictive effects of anxiety on time-management reflect the increased need to manage time for anxious students, this anxiety being induced may be a form of motivation. The role of time-management as a mediator between high-stake achievement and anxiety should be investigated further using various measures of motivation, behaviour, and achievement.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Valérie ISELI Co-Author: Jean-Louis Berger	Motivational self-regulation strategies: How they differ across subjects and school tasks	<p>Appropriate use of motivational self-regulation (MSR) strategies in the face of potential obstacles, whether due to task difficulty, learner interest, or distractions (Wolters, 1998), promotes learner engagement in terms of effort and persistence in completing the activity and, consequently, reduces the risk of task abandonment (Wolters, 2003). The purpose of this study, which was conducted as part of a master's thesis, was to clarify the developmental nature of MSR and to examine how learners use MSR strategies to maintain their attention and effort on the task at hand, considering their age, gender, subjects, and school tasks. Data for this study were collected through questionnaires from 167 learners in elementary, middle, and high school. The main findings show that strategies related to structuring the environment are the most frequently reported by learners. Proximal goal setting, self-consequating and planning tend to be mobilized more for linguistic subjects, and literary or learning tasks that rely on memorization while reinforcing personal usefulness and seeking support from others tend to be mobilized more for scientific subjects. The main differences between learners by grade level indicate that elementary and middle school students tend to use strategies such as mastery self-talk, performance-avoidance self-talk, enhancing personal significance, and situational interest more than high school students. On the other hand, high school students were more likely to use self-consequating strategies.</p>

J

Presenting Author, Co-Authors	Title of Presentation	Abstract
Hye-Ryen JANG Co-Authors: Johnmarshall Reeve Danling Huang	Is extrinsic instructional goal really bad?	The purpose of the present study was to answer the question 'Is the extrinsic instructional goal really bad?' based on the self-determination theory (Ryan & Deci, 2017). We hypothesized that (1) having instructional goals would be better than not having an instructional goal, (2) having intrinsic instructional goals would be better than having extrinsic instructional goals. To test the hypotheses, we improved existing instructional goal scales to fine-grained instructional goal scales (FGIGS). Study 1 tested the construct validity of FGIGS with intrinsic, extrinsic, and no-instructional goal. With 255 teachers, it confirmed 6-factor model and higher-order model by CFA. Study 2 investigated a dual-informant multilevel model. With 29 teachers and their 249 students, the results showed that the intrinsic instructional goal was the most beneficial, and the extrinsic instructional goal was better than the no-instructional goal, related to the motivating style for teachers and the basic needs for students. We discussed that extrinsic instructional goals do not have detrimental effects like no-instructional goals for both teachers and students. For educational implementation, we recommend delivering extrinsic instructional goals in autonomy supportive way.
Aimee JANZEN Co-Authors: Benjamin Schmid Ann Krispenz	Exploring the effectiveness of reducing romantic jealousy through modification of appraisals	Romantic jealousy can have detrimental effects on romantic relationships. According to the Dynamic Functional Model of Jealousy, romantic jealousy is caused by appraisals. With two studies, we tested the effects of a short online inquiry intervention targeting the modification of jealousy-causing appraisals. Additionally, we explored if certain personality dispositions (i.e., faith in intuition, need for cognition, openness to experience, and moderate attachment anxiety) make people more prone to benefit from the inquiry intervention. Study 1 had a between-subjects design with two times of measurement (pre- vs. post-intervention). Study 2 had a 3 x 4 mixed-factors experimental design with the factor Condition (IBC vs. IBC+Psychoeducation vs. control) and the factor Time (pre- vs. post-intervention vs. one-week follow-up vs. five-week follow-up). In Study 1, N = 104) participants either used the IBC intervention or a thought log (TLP) to self-explore an individual jealousy-causing situation. In Study 2 (N = 415), some students used the IBC intervention, while students of the control condition reported their reactions to their anxiety-causing appraisal in a TLP. In Study 1, participants reported significantly modified appraisals after the inquiry intervention,

		which mediated the resulting reduction in state jealousy. These results were partially replicated in Study 2: The findings provide preliminary evidence for the effectiveness of the IBC intervention in reducing state jealousy. Limitations and practical implications are discussed.
Jussi JÄRVINEN Co-Authors: Lauri Hietajärvi Katariina Salmela-Aro	Instructional activities, motivation, and engagement in STEM learning situations	Collaborative and problem-solving tasks are commonly used to drive student engagement in high school STEM education. The present study examined how these instructional activities are related to students' motivation and engagement in ecologically valid classroom moments. Our focus was on students' appraisals of their competence, task challenge, and interest, as well as boredom, concentration, and effort exertion. We collected experience sampling method data from 439 high school students comprising 5,741 classroom situations and assessed three features of instructional activities: creative and problem-solving activities, direct instruction, and peer collaboration. Preliminary results based on within-person correlations showed that students were less challenged, exerted less effort and reported higher levels of boredom in direct instruction moments, whereas collaboration was related to higher levels of effort exertion. Creativity and problem-solving activities seemed to be perceived as more challenging, but they also evoked a higher sense of competence. These activities were related to higher levels of interest and effort exertion as well as lower levels of boredom. Further analysis will be conducted to investigate how instructional activities predict the dynamic changes in motivation and engagement outcomes from moment to moment within lessons, as well as possible individual differences in these effects. The findings will contribute to our knowledge of the moment-to-moment dynamics and relationships between instruction and student motivation, informing both researchers and instructors on the effectiveness of the learning activities in fostering student engagement.
Juming JIANG Co-Author: Luke Fryer	What kind of built-in social tools keep students in MOOCs?: A scoping review	The number of Massive Open Online Courses' (MOOCs) participants has been increasing over the years but its completion rate is extremely low. Social support/social interaction is one of the key factors that has a huge impact on students' learning motivation in both online and offline environments, but difficult to maintain in MOOCs due to its asynchronicity. Built-in social tools are therefore important in the MOOCs learning context because they can provide opportunities for students to interact with both other students and instructors. Present scoping review focused on built-in social tools in MOOCs and aimed to find out: What theories have been utilised to guide or explain how built-in social tools in MOOCs might support students? What kind of built-in social tools have been applied in MOOCs? What kind of outcomes have been investigated in research that focused on built-in social tools in MOOCs? Seventy articles have been included in this review and we found that 1) the majority of the research did not use any theories or models to guide the study design or explain the

		<p>findings 2) Forum is dominating in numbers compared to other built-in social tools 3) Most studies focused on observed data such as number and content of posts in the forum, and their relationships with course grade and completion rate. However, no research has focused on how built-in social tools might affect students' belongingness, which is considered to have a significant influence on students' motivation to learn. Suggestions to address the research gaps were given.</p>
<p>Marilyn JURMAN Co-Author: Elina Malleus Kristiina Treial Eve Kikas</p>	<p>Assessing teachers' social-emotional competence: Psychometrics of a CASEL self-assessment tool</p>	<p>Teachers' social-emotional competence (SEC) supports the development of students' SEC, and self-assessment through theory-based statements is one way teachers can analyze their strengths and difficulties (Gimbert et al., 2023). Our study addresses the research gaps and possibilities in adult SEC self-assessment, exploring the psychometric properties of a self-assessment tool within the Estonian context. Grounded in the Collaborative for Academic, Social, and Emotional Learning (CASEL) framework, the research aims to identify SEC aspects among Estonian teachers. Employing a mixed-methods approach, the study introduces findings from the cultural adaptation process involving 528 primary and secondary school teachers. Initial results reveal a five-factor model akin to CASEL dimensions, albeit with variations in factor loadings and associations with demographic variables. It challenges assumptions and offers insights into SEC interrelations among teachers, emphasizing the importance of tailored policies to support their social and emotional well-being.</p>

K

Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Michal KAPLAN Co-Authors: Or Kaplan Rotem Shalev Shamay</p>	<p>Perceptions of the learning climate in medical school as predictors of students' well/ill-being</p>	<p>The study is based on SDT and investigates the relationship between Israeli medical students' perceptions of learning climate (LC), and two motivational paths: a sense of need frustration and controlled motivation versus a sense of need satisfaction and autonomous motivation, and the influence of each path on students' well-being (positive affect, life satisfaction) and ill-being (depression, burnout, negative affect). The study participants were 142 medical students (57.9% female) in their first to sixth year of studying. The students completed an online survey. All scales had sufficient reliabilities. Structural-Equation Modeling revealed that perceived LC was associated positively with need satisfaction and autonomous motivation and negatively with need frustration. Need satisfaction was positively associated with autonomous motivation, which in turn positively predicted positive affect and negatively predicted burnout. Students' need frustration was positively associated with controlled motivation, which in turn positively predicted burnout. Some direct effects were also found. It was also found that need satisfaction/frustration and autonomous/controlled motivation fully mediated the association between perceived LC and various outcomes. These findings highlight the importance of supporting the psychological needs of medical students. Such support may encourage them to draw on their Inner resources when coping with their future stressful role as physicians.</p>
<p>Yuka KONO Co-Author: Emiko Hirosawa</p>	<p>The interplay between self-efficacy and teacher support: Insights from primary English classrooms</p>	<p>Self-efficacy, students' belief in their academic abilities in an educational sense, plays an essential part in their academic achievement and optimal functioning in school. However, students can easily undermine their efficacy when they face overly challenging learning tasks. It is for this reason that teachers are required to scaffold students' learning. Although studies reported a positive relationship between self-efficacy and autonomy support in English as a Foreign Language (EFL) classrooms in secondary school and beyond, little is known about the primary school setting. To fill in this research gap, the present study explored the relationship that might exist between self-efficacy and autonomy support in primary school EFL classrooms. The participants were 454 fifth-grade students from three private schools (Japan = 2, Taiwan = 1). They responded to four items measuring self-efficacy from the PALS Academic Self-Efficacy Questionnaire and five items for autonomy support from the</p>

		Learning Climate Questionnaire. The three-wave data were collected during their regular classes throughout the school year and tested employing a cross-lagged panel model. Results showed a significant reciprocity between the target variables. Unexpectedly, however, self-efficacy negatively predicted autonomy support, which in turn negatively predicted self-efficacy. This indicates that pubertal students might not necessarily interpret autonomy support as intended by teachers, potentially hindering their self-efficacy. These findings offer theoretical and practical considerations for future educational and psychological research on young language learners.
Myriel KOPATZ Co-Authors: Benjamin Nagengast Ulrich Trautwein Lisa Bardach	Composition effects revisited: A focus on academic motivation	The learning environment in class plays an important role for students' positive academic development. One feature of the learning environment encompasses the composition of classmates' characteristics (e.g., the average achievement level of one's classmates). The term "composition effect" then describes the effects of such class-aggregated characteristics on students' individual characteristics. However, research on composition effects has often focused on the effects of academic achievement or socioeconomic background composition on individual student achievement, while neglecting other potentially relevant composition characteristics. In particular, we largely lack knowledge on whether the aggregated motivation levels of a student's classmates are associated with individual student motivation (i.e., motivational composition effects). Building on theories of motivational transmission and interest development, the current study therefore aims to explore whether academic interest composition (in terms of both class-average interest levels and heterogeneity in interest within classes), longitudinally predicts individual students' academic interest. We also aim to replicate prior findings on composition effects with respect to achievement to compare the findings to motivation composition effects. We will leverage a longitudinal sample of 3,880 German secondary school students in 60 mathematics classes and 46 German classes and set up multilevel structural equation models to examine composition effects. Overall, our work seeks to contribute to a more robust and comprehensive understanding of the learning environment in class and adds a motivation science lens to research on composition effects. Implications for current educational practices (e.g. regarding differentiated instruction) will be discussed.
Dora KORAĆ Co-Author: Barbara Rončević Zubković	The effect of math anxiety on performance: The role of cognitive load and metacognitive strategies	Math anxiety (MA) is a crucial emotional aspect of mathematical reasoning. Morsanyi et al. (2019) provided detailed review of potential effects of MA on each phase of the problem-solving process. The importance of affective and motivational factors, such as individual's effort or level of MA, in self-regulation of problem-solving process is also emphasized by the Integrated model of self-regulation and cognitive load (Seufert, 2018). This research aimed to explore the relationship between key components of the model in the mathematical domain, focusing on MA as a relevant affective factor in problem-solving. Intrinsic (ICL), extraneous (ECL), and germane

		<p>cognitive load (GCL) were examined as mediators in the relationship between MA and performance. Data on MA, cognitive load, metacognitive problem-solving strategies, and performance were collected from a sample of 231 students ($M = 22.02$; $SD = 2.7$). MA led to higher estimation of the task complexity (ICL) and ambiguity (ECL), however higher ICL and ECL did not impair performance. GCL mediated the effect of MA on performance, indicating that MA compromises performance by reducing the amount of effort individuals were willing to invest in problem-solving process. Preliminary results of the analysis of self-reported problem-solving strategies suggest that math-anxious students have greater difficulty identifying the relevant task components, and are more likely to give up and guess the answer. Our results contribute to the existing knowledge on the interaction of affective factors, cognitive load, and students' self-regulation in mathematics, and emphasize the importance of effort students are willing to invest in solving tasks.</p>
<p>Heidi KORPIPÄÄ Co-Authors: Asko Tolvanen Tuire Koponen Kaisa Aunola Marja-Kristiina Lerkkanen Anna-Maija Poikkeus</p>	<p>Comparing reading and arithmetic self-concept profiles with skills across grades 1-9</p>	<p>As domain-specific self-concept of ability is related to skill development in reading and math domains across all levels of achievement (Susperreguy et al., 2018), longitudinal study is needed to investigate the individual variation in self-concept of ability profiles across grades and differences of the profiles in skills development. Research has shown that reading and arithmetic skills tend to vary together showing rather strong overlap, i.e. shared level of skills from primary to lower secondary school (Korpiää et al., 2017) among most of the students due to the partly shared cognitive background. However, also subgroups of students showing discrepant levels of skills exist (Korpiää et al., 2020). Therefore, in the present study self-concept of abilities were investigated in relation to each other across grades 1-9 in a population based sample of 2,518 children. Person oriented approach with latent profile analysis (LPA) was used to investigate the heterogeneity of profiles (i.e. self-concept of abilities in reading and arithmetic in grades 1, 2, 3, 4, 6, 7 and 9) and the differences between the profiles in reading and arithmetic skills. In addition, the proportion of genders in different profiles was investigated. A total of 6 profiles in terms of self-concept of abilities were found that differently predicted reading and arithmetic skills across grades.</p>



Presenting Author, Co-Authors	Title of Presentation	Abstract
Alexandra LAPTEVA Co-Authors: Wanja Wolff Corinna S. Martarelli	The influence of mind-wandering and boredom on memory performance: Insights from pupillometry	Both mind-wandering and boredom are characterized by the difficulty to sustain focus and by shifts of attention. Research on advantages and disadvantages of mind-wandering and boredom and their effect on attention is extensive, however research devoted to understanding the intricate relationships between mind-wandering, boredom, attention, and memory in more detail remains scarce. In this study, we examined what impact mind-wandering and boredom at encoding of visual information has on the subsequent recognition of the same information with the use of pupillometry. We measured mind-wandering and boredom with thought probes during an incidental encoding task. Memory performance was measured by an old/new task at recognition, in addition, we have used the pupil old/new effect (portrayed in the literature as a larger pupil dilation to old stimuli versus smaller dilation to new stimuli) as an objective measure of recognition. The main objective of the study is to investigate if the old stimuli that were encoded during mind-wandering and boredom would elicit the same pupil response as the new stimuli during recognition. We predicted that encoding of information during the instances of mind-wandering and boredom would reduce the pupil old/new effect (a diminished difference between pupil dilation for old and new stimuli) and mind-wandering to be a better predictor of memory performance than boredom.
Emma LEHTOAHO Co-Authors: Tiina Törmänen Aishah Bakhtiar Hanna Jarvenoja	Investigating secondary school students' motivational beliefs through an integrative lens	Traditionally, motivation is explored through a single theoretical perspective. The different theories and constructs all share the conception of motivation being a complex psychological process that serves as a fundamental catalyst for both individual and collective learning processes, but they vary in the way this complex process is approached. However, to understand motivation in complex, real-life learning scenarios, an integrative theoretical approach is needed to simultaneously consider the students' beliefs on abilities, choices, effort, persistence and so on. This study aims to examine motivational beliefs using an integrative lens, drawing on self-regulated learning and various motivational theories, focusing on three motivational perspectives: "Can I do it?", "Do I want to do it?", and "Is it worth doing?". Through qualitative content analysis of interview data, we explore students' perceptions of motivation, both generally and in the context of a recently completed collaborative task, aiming

		to deeply understand their various motivational appraisals. Preliminary findings highlight the complex nature of motivation, illustrating that students express motivational beliefs through various perspectives, encompassing aspects of motivation that relate to willingness to learn, perceived significance of the task as well as judgements of self-efficacy. The same aspects are recognized to explain the lack of motivation. Additionally, students describe motivational factors in a different way. This underscores the importance of an integrative approach for a comprehensive understanding of motivation, acknowledging both the diverse engagement in motivational perspectives and the unique ways students describe motivational factors.
Aranza LIRA-DELCORE Co-Authors: Rafael Gargurevich Lennia Matos	Teachers' motivating style: Role on students' motivation, emotions, and achievement in mathematics	Based on the Self-Determination Theory, this study examined the relationship between student's perception of the teacher's motivating style (autonomy support, control), student's motivation regulations (identified, introjected and external), achievement emotions (enjoyment, anxiety) and academic achievement in mathematics, in 269 students from 5th and 9th grade from two private schools of Lima. Their ages ranged from 10 to 16 years old ($M=12.84$; $SD=2.04$). To calculate the hypothesized effects in both groups a multigroup analysis was performed. The "presence" of the so-called "bright side" (autonomy support, identified regulation and enjoyment) and "dark side" (psychological control, introjected and external regulation and anxiety) of motivation was hypothesized. Results showed clear differences between the effects on both grade levels. In both groups autonomy support positively predicted identified regulation which in turn predicted enjoyment, while introjected regulation consistently predicted higher anxiety. However, these are the only points of convergence between both groups. Interestingly in 5th grade students (primary school) seem to prioritize school interest and enjoyment (no associations with grades) while in 9th level students (high school) also experienced anxiety and prioritize school performance. The study contributes to understanding the relationship between motivational factors, emotions, and academic achievement in the context of Peruvian students, thus providing valuable insights for educational practices in the region.
Meimei LIU	Exploring the freshmen's motivational trajectory in higher education	Numerous studies have highlighted a trend of declining motivation among college students at the start of their higher education; one study further claimed students may experience "motivational shock" right at the start of the program. However, existing research on freshmen's motivational trajectories has often been limited to specific time point, failing to capture the fine-grained fluctuations in motivation during the crucial first semester. Additionally, potential protective factors aiding students in recovering from motivational declines during this transitional period are still unknown. Grounded in situational expectancy-value theory, we investigated the trajectory of expectancy-value beliefs over nine weeks among 436 students in two college-entry freshman courses. We confirmed the existence of a motivational shock,

		<p>characterized by a decline in intrinsic and utility value as well as increased effort costs in the very first week with variation across courses. Furthermore, we observed that a growth mindset buffered against shock in intrinsic value than a fixed mindset. Our results from random intercept-cross lagged models indicated that only costs correlated with effort, operationalized as time invested in studying, influencing subsequent academic achievement and impacting students' motivation. This implies outside pressure constraints that potentially enhance students' effort and academic performance, warranting further exploration in future research.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Yugo MAGATA Co-Author: Ayumi Tanaka	The effect of interrogative self-talk on intrinsic motivation and performance	Question form of statements have been considered to respect the autonomy of addressees in many contexts, such as in the clinical psychology field (Sheldon et al., 2003). In the research of self-talk, defined as talking to oneself (Kross et al., 2014), Senay et al. (2010) indicated that self-talk in the interrogative form (referred to as “interrogative self-talk”) enhanced intrinsic motivation and performance compared with self-talk in the declarative form (referred to as “declarative self-talk”). This study aimed to replicate Senay et al.’s (2010) study using the same experimental paradigm of experiment 1. We expected the interrogative self-talk group to show higher intrinsic motivation and task performance than the declarative self-talk and control groups. We randomly assigned 144 undergraduate students to an interrogative self-talk, a declarative self-talk, or a control group. The same anagram task used in previous studies (Senay et al., 2010; Van Raalte, et al., 2018) was used to assess the task performance. Following the pre-registered analysis plan, the results showed no difference in intrinsic motivation or performance between the interrogative self-talk group and the other two groups. A possible limitation of this study is also discussed.
Corinna S. MARTARELLI Co-Authors: David Weibel Deian Popic Wanja Wolff	Temporal dynamics of boredom and related states: Insights from a virtual reality study	Our study aimed to explore the relationship between time perception and boredom, as well as the dynamic interactions between boredom and other psychological states over time. Specifically, we investigated three primary research questions. First, does manipulating time information alter time perception and boredom? Second, what is the link between time perception and the experience of boredom? Third, how does boredom covary with other psychological states over time? To address these questions, sixty-six participants experienced three waiting rooms with manipulated clock speeds (real-time, faster, and slower) in a virtual reality environment, completing nine waiting periods. Despite our manipulation of time information, we found no significant impact on time perception, time estimation, or boredom experience. However, a strong relationship emerged between boredom and subjective time perception, suggesting that time dragging is a hallmark of boredom. We also observed interactions between time and psychological associations with boredom, emphasizing the importance of integrating temporal information into boredom research. Our study highlights the intricate interplay between time, cognitive and affective processes, and

		individual differences in shaping the experience of boredom. Future research is needed to unravel these complexities and enhance our understanding of how we navigate moments of monotony.
Alice MASI Co-Authors: Enrico Toffalini Sara Caviola	Unlocking mathematical success: Examining positive-negative motivational factors in primary school	Mathematical learning is a complex domain, and its abilities are fundamental for everyday life situations. Emotions and motivations, commonly referred to as attitudes toward mathematics (Levine & Pantoja, 2021), play an active role in affecting both positively and negatively mathematical achievement, and are mainly investigated in adolescents and adults' population. Positive attitudes, like perceived control, value, and self-competence enhance learning by acting as a protective factor. Conversely, negative attitudes, such as math anxiety and avoidance can hinder math achievement as a negative risk factor. This study aims to address the existing gap in the literature by investigating the interplay between protective and risk factors in explaining mathematical achievement in primary school students. A total of 499 typically developing 4th and 5th grade students, enrolled in economically middle-status neighbourhoods, were included. They completed several standardized pencil-and-paper math tests assessing calculation and fluency processes. Various measures of positive and negative math attitudes were assessed adapting existing self-report questionnaires. Preliminarily, math attitudes reliability was ensured by assessing internal consistency of measurement tools, and fit adequacy was evaluated through confirmatory factor analysis. Subsequently, the interplay between these constructs and math achievement was investigated through regression models. Results suggested multiple associations between math attitudes and math achievement. Perceived control and self-competence positively predicted achievement, while avoidance and over-emphasis on intrinsic value negatively predicted it. As for practical and educational implications, it is important to foster positive attitudes such as perception of control and competence in mathematics to counteract negative risk factors and better support academic learning.
Carmelo Francesco MEDURI Co-Authors: Concettina Caparello Pina Filippello Luana Sorrenti	The importance of being aware of one's current experiences in relating to others and school refusal	Several studies have shown that awareness of present experiences/events can play a key role in promoting relational and emotional well-being as well as motivation to attend school. However, no study to date has analyzed whether a student's awareness of current experiences (mindfulness) may contribute to peer and emotional problems, and thus promote or reduce school refusal (Anxious Anticipation, Difficult Transition, Interpersonal Discomfort and School Avoidance). A cross-sectional study (362 Italian high school students) was conducted to evaluate the mediating role of peer problems and emotional problems in the association between students' awareness of their current experiences (mindfulness) and school refusal. In order to evaluate the association between variables, was to carry out a structural equation model (SEM) with latent variables [$\chi^2(188) = 372.163, p=.000, CFI = .94, SRMR = .04,$

		<p>RMSEA (90%CI) = .052 (.044, .060)]. Mediation analysis indicated that peer problems and emotional problems full mediate the association between mindfulness and Anxious Anticipation (peer problems: $\beta = -.19$, $p \leq .001$; emotional problems: $\beta = -.10$, $p \leq .05$) and Interpersonal Discomfort (peer problems: $\beta = -.35$, $p \leq .001$; emotional problems: $\beta = -.14$, $p \leq .01$). Moreover, peer problems full mediate the association between mindfulness and School Avoidance ($\beta = -.14$, $p \leq .01$). The study extends knowledge of the factors involved in school refusal, with application implications from a preventive point of view, relating to the components of emotional, relational and current experience awareness that may influence motivation to attend school.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Willeke NORDER</p> <p>Co-Authors: Anke De Boer Alexander Minnaert</p>	<p>Motivation in education: Experiences of students with social, emotional and behavioural difficulties</p>	<p>Nowadays, quite some adolescents struggle with social, emotional and behavioural difficulties (SEBD). Such difficulties seem to be related to problems with school motivation, school absenteeism, and increased suspension and dropout rates. This can pose serious threats to adult health and future participation in society. Studying the mechanisms underlying wellbeing and motivation within these young people is therefore of utmost importance. This qualitative research does so by investigating the experiences of 49 adolescents with SEBD in special secondary schools in The Netherlands. The study used the Self-Determination Theory as the framework for interview guidelines and analysis. Participants emphasised the importance of their voice being heard. Preliminary results indicate the mechanisms through which the basic psychological needs for competence, autonomy and relatedness shape the experience of motivation and wellbeing among students with SEBD. Contextual factors such as school transitions and a psychiatric or psychological diagnosis seem to additionally influence these mechanisms and experiences. Final results are expected to be of valuable input for suggestions for education that can contribute to motivation and wellbeing of our youth.</p>
<p>Fernando NUNEZ-REGUEIRO</p> <p>Co-Authors: Jacques Juhel Xin Tang Ming-Te Wang</p>	<p>Modeling person-environment fit at school: The added value of cubic response surface analysis</p>	<p>This poster introduces and illustrates an innovative framework for the analysis of person-environment fit processes at school, based on cubic response surface analysis (cubic RSA). THEORY: Person-environment fit processes encapsulate numerous educational theories interested in understanding how the interplay between student characteristics and learning environments relates to major motivational and learning outcomes. Conventional approaches examine such interplay using moderation analysis, but a more complete specification can be obtained by allowing predictor variables (e.g., x = student characteristics, y = context characteristics) to have additive, interactive, quadratic, cubic, and interactive-quadratic effects on the outcome variable of interest (e.g., z = outcome). This is done by specifying a cubic polynomial model (i.e., $z = b_1 x + b_2 y + b_3 x^2 + b_4 xy + b_5 y^2 + b_6 x^3 + b_7 x^2 y + b_8 xy^2 + b_9 y^3$). Recent developments have yielded a comparative framework based on families of polynomials and probing of inflection points in the response surface, ensuring optimal identification and description of the person-environment fit</p>

		<p>(or misfit) at stake in the data. AIMS: This poster aims to introduce this new methodological framework in the context of two school motivations theories, namely self-determination theory and study demands-resources theory, by providing illustrations of exemplary data and results. METHOD: We use data from several studies and illustrate the functioning of the cubic RSA, including hypothesis generation and model building strategies. RESULTS: The illustrations demonstrate the added value of this technique by unveiling innovative results about needs-supplies and demands-resources fit processes in relation to student engagement and motivation, that shed new light on fundamental relations between student and environment characteristics.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Quint OGA-BALDWIN Co-Author: Luke Fryer	The dynamic relationship of native and foreign language self-efficacy	<p>Self-efficacy's role within formal education continues to be extensively researched within specific school subjects. The transfer/generalisation of self-efficacy between school subjects has been hypothesised but remains an untested question. The present study is a comprehensive examination of transfer between Native and Foreign language subjects during the first two years of secondary school in Japan. Longitudinal research design, collecting self-reported latent and observed achievement data across the two academic years was utilised (total n=917; 428=Female). Longitudinal, latent structural equation modelling was conducted, testing all forward connections between self-efficacy and achievement in three separate school subjects. Modelling results confirmed robust self-efficacy transfer, from Foreign Language to Native Language self-efficacy. Longitudinal linkages from self-efficacy to achievement were chiefly within school subjects. Longitudinal connections between achievement in the two subjects researched were abundant, suggesting skills transfer, in addition to self-efficacy transfer. This study demonstrates that self-efficacy transfer can be an integral part of the learning process. The connections presented by this study have implications for both curricular design and instruction. While researchers have a role in testing and extending these findings, educators can feel justified in planning and engaging secondary school students across subject boundaries to bolster the cross-subject connections students naturally make.</p>
Mumine OZTURK Co-Authors: Michael Wigelsworth Charlotte Bagnall	Unpacking teacher wellbeing: A qualitative study with primary school teachers in England	<p>The ongoing challenges within the teaching profession significantly impact teacher wellbeing, necessitating a deeper understanding. This study explores how English primary school teachers define and experience wellbeing, aiming to uncover factors influencing their performance and retention decisions. Semi-structured interviews with eight primary educators were analysed using Hybrid Thematic Analysis (HTA), combining both inductive, data-driven methods and deductive, theory-driven approaches to interpreting raw data. Findings revealed four key themes: perception of teaching, wellbeing understanding, components, and contributors. The findings highlight diverse dimensions of teacher wellbeing, including workload and personal life factors. This study enriches our understanding of teacher wellbeing, offering insights into teachers' perspectives and informing future research and policies.</p>

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Presenting Author, Co-Authors	Title of Presentation	Abstract
Aaisha PATEL	Multifaceted motivational profiling to promote STEM achievement by diminishing social barriers	The Science Technology Engineering and Mathematics (STEM) industry is suffering from huge disparity within the demographics of the workforce (UKCES, 2022). Likewise, within education, the discrepancy between motivation and achievement in science of disadvantaged students and their peers is growing, driven by social injustice (Mallaburn et al, 2018). The Situated Expectancy Value Theory (SEVT) is a proximal determinant for motivation, consequently impacting achievement and aspirations (Eccles and Wigfield, 2020). However, there is a lack of studies on the interplay of SEVT, perceived task difficulty (motivation based on expected success and the level of effort required) and science capital (science related attitudes and family qualifications), contextualised by the role of socioeconomic status and ethnicity in science.
Helen PATRICK Co-Authors: Tao Li Panayota Mantzicopoulos	Patterns of change in students' motivational beliefs and associated teacher practices	We identified different motivational profiles of students (N = 306) and, for a subset, examined patterns of observed teacher practices associated with math classrooms that differed by student profile membership. Person-centered analysis of students' motivational beliefs about math (perceived competence, enjoyment, classroom mastery structure) across 2 time points identified 4 profiles: 2 adaptive (High & Stable; Increasing) and 2 maladaptive (Decreasing; Vulnerable). The proportion of students with adaptive profiles (i.e., High and Stable & Increasing) varied across classrooms, ranging from 46% to 100.0%. We then examined teacher practices in 6 classrooms with different patterns of student profile density. We coded 18 video-recorded math lessons (3 per teacher) using the TARGETS framework. Differences in Task, Student Autonomy, Recognition/ Evaluation, and Student-Teacher Relationships were especially salient across classrooms. Examples of teacher practices and discourse will be presented.
Ema PETRIČEVIĆ Co-Authors: Daria Rovani Marija Šarić Drnas	Contextual and individual determinants of agentic engagement in the context of teacher education	Agentic engagement in learning has numerous positive outcomes such as increased student motivation, greater achievement, and enhanced motivational support from teachers (Reeve, 2013; Reeve & Shin, 2020). According to Reeve (2013), agentic engagement is student-initiated and refers to the proactive, intentional, and constructive ways in which students enrich their learning experience. Reeve (2013) describes a transactional and personal form of agentic engagement. Although some contextual determinants of the transactional aspect of agentic engagement are known, less is

		<p>known about other determinants of the transactional and personal aspects of agentic engagement. Besides, there is insufficient research on agentic engagement in the context of teacher education. Therefore, the goal of this research was to examine the individual and contextual determinants of different aspects of agentic engagement in the context of teacher education. The research questions were: 1) what individual determinants of the different aspects of agentic engagement are described by the students; and 2) what contextual determinants of these different aspects are described? Semi-structured interviews were conducted with 24 teacher education students. A thematic analysis approach was used for data analysis. The research results, in accordance with the theoretical framework, confirmed the important role of the teacher and individual motivation for agentic engagement, but also showed other important determinants such as personality. Additionally, this research indicates that the personal and transactional aspect of agentic engagement has different individual and contextual determinants, which can have practical implications.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Inka RONKAINEN Co-Authors: Veli-Matti Vesterinen Jari Lavonen Jussi Järvinen Miikka Turkkila Katariina Salmela-Aro</p>	<p>A multilevel approach to students' situational motivation in a climate education module</p>	<p>In today's world, everybody needs a basic understanding of climate change. However, climate education faces multiple challenges. To gain information on how to support students with their schoolwork related to climate change, this study adopted multilevel analysis to identify situational motivation patterns and student motivation profiles of upper-secondary school students participating in the climate education module. Within the framework of expectancy-value theory, students' situational motivation was measured in terms of their reports of interest, competence, effort, and challenge. The data consists of 3695 situations reported to experience sampling method data collection by 354 students. With multilevel latent profile analysis, six situational motivation patterns were identified: low all (15%), low interest & high difficulty (9%), moderate all (50%), high competence & low effort (12%), high effort & low difficulty (9%) and high all (5%). Situational patterns were differently associated with various learning activities (e.g. working in a group, doing exercises, ideating). Based on the relative prevalence of situational patterns among students, three student motivation profiles were identified: weakly motivated (21%), moderately motivated (59%) and interested and competent (20%). Preliminary results show that there are no differences in test performance between student motivation profiles. However, boys and science programme students seem to be more likely to the interested and competent profile compared to girls and general programme students. These findings provide us with a deeper understanding of student motivation in both situation and student levels within climate education modules.</p>
<p>Corinna ROTT Co-Authors: Mien Segers Piet Van den Bossche Gosia Kozusznik</p>	<p>Performing under pressure- stress as fuel or break to high-performance and health</p>	<p>Crisis management, a high-performance domain, frequently exposes multi-professional team leaders to acute and chronic stress, potentially leading to adverse health consequences. However, the concept of eustress suggests that not all stress is detrimental, as it can enhance motivation, vigilance, and overall well-being when perceived as manageable. This study examines the construct validity of the Valencia Eustress-Distress Appraisal Scale (VEDAS) with high-stakes team leaders in front-line organizations across Europe (n= 237). In addition, by administering the Short General Health Questionnaire and the Short Burnout Assessment Tool, we investigate the predictive validity of the VEDAS in capturing team leaders' general health</p>

		<p>and experiences of burnout. Finally, we investigate discriminant validity by administering the Stress Mindset Measure (SMM) questionnaire, measuring individuals' self-perceptions of their underlying stress mindset. Confirmatory factor analysis upheld a four-dimensional structure embracing one predominant dimension (relationships) and three secondary dimensions (personal accountability, work-life balance, and workload) for both eustress and distress scales. Currently, we are analyzing the predictive and discriminant validity of the VEDAS. The preliminary findings suggest that the VEDAS is a valid instrument for measuring stress and distress appraisal in high-stakes team leaders. The study addresses a significant gap in stress research, as previous studies often only focused on distressing work strain. Hence, the findings are essential in further research to understand stress appraisal in high-stakes environments. Moreover, the results provide nuanced insights enabling organizations to promote eustress and mitigate distress, fostering optimal working conditions for sustainable careers and optimal performance among high-stakes team leaders.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Marija ŠARIĆ DRNAS</p> <p>Co-Authors: Daria Rovan Ema Petričević Staša Kukulj Diana Olčar</p>	<p>Personality and motivation as individual determinants of engagement of teacher education students</p>	<p>According to the contextual model of student engagement (Lam et al, 2012), individual determinants such as student motivational beliefs significantly contribute to student engagement. Since there is relatively little research on individual factors of student engagement, this research focuses on examining the contribution of personality and motivation as individual determinants of engagement. Given that the quality of engagement of teacher education students is the basis for their professional development as future teachers and that teaching requires lifelong learning, understanding the determinants of engagement is especially important in the context of teacher education. Therefore, the aim of the present study was to examine the role of teacher education students' personality traits, achievement goals, and self-efficacy in the prediction of different dimensions of their engagement in learning. The participants were 295 teacher education students. The study was conducted in two waves during the same term. At Time 1, students completed questionnaires assessing personality, achievement goals, and self-efficacy. At Time 2, students completed questionnaires assessing engagement in learning. The results of regression analyses show that agentic engagement is positively predicted by extraversion, behavioral engagement is predicted by agreeableness, conscientiousness, and emotional stability, while cognitive engagement is predicted by agreeableness and emotional stability, and emotional engagement only by emotional stability. The mastery-approach and performance-approach goals were significant predictors of behavioral and cognitive engagement, while the mastery-approach goal was also a significant predictor of emotional engagement. This study contributes to understanding individual predictors of student engagement in learning, which also has practical implications for teachers.</p>
<p>Siem SCHIPPER</p> <p>Co-Authors: Janniko Georgiadis Marco de Carvalho Filho</p>	<p>Not feeling like it: When can undergraduate medical students successfully motivate themselves?</p>	<p>Medical students use deliberate strategies to motivate themselves feeling demotivated in medical school. However, little is known about the nature of these demotivating moments and the factors that help or hinder students to successfully self-motivate in the face of them. In this qualitative study we aim to obtain a richer understanding of 1) moments that medical students experience as demotivating, 2) the strategies they use to self-motivate and 3) what factors facilitate or impede this ability to self-motivate. We will include a rich sample of undergraduate medical students</p>

		and use semi-structured interviews supported by rich picture drawings. This is a visualization method to facilitate reflection and the discussion of topics that are difficult to express in words such as emotions-. The interview transcripts will be analysed using thematic analysis. At the symposium we will present our (preliminary) results and implications.
Aki SCHUMACHER Co-Authors: Markus Wolfgang Hermann Spitzer Hayley Jach Yvonne Kammerer Christian Scharinger Lisa Bardach	Momentary motivation to acquire knowledge: Zooming in on state curiosity	Curiosity is a desire for new knowledge that motivates exploratory behavior, and plays a key role in shaping our cognitions and learning. To study momentary experiences of curiosity (state curiosity), previous studies often employed the trivia-question task where participants rate their curiosity to learn about different trivia facts. This highly structured task potentially limits the transferability of findings to learning contexts. To capture more naturalistic and spontaneous manifestations of curiosity, the current study introduces a way to extend the trivia-question task with a pre-question phase of undirected information seeking. We will use data from an online study (N = 960) in which participants freely explored a hypertext on a historical topic and could click on hyperlinks providing additional information, while their log-file data was being tracked. From the log-file data, we will extract indicators of behavioral curiosity (i.e., whether a hyperlink was clicked and the duration it was read). Afterward, participants completed a knowledge test that included questions on each hyperlink in the text. For each question, they rated their confidence in their answers and their curiosity to find out the answer (paralleling the trivia-question task). We will explore how the measures of behavioral curiosity taken from log-file data relate to self-reported curiosity in the knowledge test, as well as to other established predictors of state curiosity such as confidence and trait curiosity. Taken together, this study aims to deepen our understanding of the basic processes surrounding state curiosity in learning by leveraging the potential of behavioral trace data.
Johannes SERFONTEIN Co-Authors: Linda van Zutphen Maartje Henderikx Renate de Groot	Emotions, their regulation, student engagement and mental well-being in different learning contexts	Student mental well-being in higher education is more relevant than ever as it has been declining steadily in the previous years, negatively influencing academic performance. Achievement emotions are elicited by achievement activities such as studying or result from achievement outcomes like success or failure. Emotion regulation, whether intrapersonal or interpersonal, is crucial for navigating life and has been shown to influence mental well-being and engagement in the classroom. Previous studies have separately examined how emotion regulation is related to student mental well-being and student engagement; however, they are limited to investigating either intra- or interpersonal emotion regulation, only investigate a sparse number of emotion regulation strategies, and do not investigate different learning contexts such as by oneself, in a group, or with a teacher, wherein different emotions and regulation strategies can take place. The current study aims to examine which achievement emotions and emotion regulation strategies are commonly experienced in the

		<p>aforementioned different learning contexts, as well as how both relate to momentary student mental well-being and behavioural- and cognitive student engagement. Data from 120 full-time bachelor students will be collected by employing experience sampling, prompting them semi-randomly 10 times a day over seven consecutive days to fill in a short questionnaire. The questionnaire will record achievement emotions and regulation strategies, state mental well-being, and engagement. Data will be analysed using multilevel linear mixed modelling. Data collection starts in April 2024. Preliminary results will be discussed at the conference</p>
<p>Hardi SIGUS Co-Author: Kaja Mädamürk</p>	<p>Students' motivation as a mediator between extra-mathematical knowledge and word problem-solving</p>	<p>This poster presentation explores how components of the expectancy-value model mediate the relationship between extra-mathematical knowledge and word problem-solving. The empirical study involved 345 fifth-grade students (51.2% male) from 25 classes in 11 schools. Students solved the tasks and completed the questionnaire via an online platform during regular school hours. Results showed that extra-mathematical knowledge, motivational components, and word problem-solving were positively related. Furthermore, word problem-solving tended to increase when extra-mathematical knowledge was accompanied by a higher expectation of success and a lower perception of cost. Therefore, in addition to motivation, the extra-mathematical knowledge plays an important role in solving word problems.</p>
<p>Melanie STICHA Co-Authors: Sina Ludwig Martin Mayerhofer Takuya Yanagida Manfred Prenzel Barbara Schober Marko Lüftenegger</p>	<p>Teacher self-efficacy in socially deprived schools: Impact on teaching quality & student motivation</p>	<p>Teachers at schools in socially deprived settings are faced with the task of providing good support to predominantly socio-economically disadvantaged pupils. For this, teachers' self-efficacy proves to be very important. As self-efficacy beliefs manifest themselves in different forms, there are conflicting reports on how teacher self-efficacy influences different student outcomes, indicating the need to look at different facets of self-efficacy. This study investigated whether different self-efficacy clusters based on relevant self-efficacy facets exist and investigated the relationship of the different self-efficacy clusters with students' cognitive activation and motivation. The sample consisted of 1512 students and their 134 homeroom teachers from 49 disadvantaged Austrian schools. The measured self-efficacy facets were instructional self-efficacy, self-efficacy to motivate, self-efficacy in their diagnostic competence of performance, and self-efficacy in their diagnostic competence in the social domain. Results from cluster analyses revealed two self-efficacy clusters, one with high reports of self-efficacy across all four facets and one with higher scores in self-directed self-efficacy (diagnostic competence of performance, in the social domain) than in student-directed self-efficacy facets (instructional, self-efficacy to motivate). Students of teachers who report lower self-efficacy for instructing and motivating students report significantly lower cognitive activation, lower academic self-concept, and competence beliefs than students of teachers with high self-efficacy in all facets.</p>

		However, no significant differences in intrinsic motivation were found between the two groups.
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Presenting Author, Co-Authors	Title of Presentation	Abstract
Benjamin TORSNEY Co-Authors: Catherine Pressimone Beckowski Joseph Eisman	High hopes: An exploratory study of college students' hopefulness for the future	Using the Community Cultural Wealth framework (CCW)—which recognizes the cultural assets historically underrepresented minority students—this study investigated whether diverse college students' demographic characteristics a psychological assets would predict their perceptions of hope about their future. A structural equation model identified John Henryism—defined as high effort coping that relies on greater levels of motivation and engagement as a response to environmental stressors—and educational goals as having direct relationships with hopefulness about one's future. Indirect relationships showed that identifying as Black or Latine was mediated by John Henryism and then to navigational self-efficacy, and finally predicting educational goals. CCW is a novel framework for studying the motivation of historically underrepresented minority students.



Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Teuntje VAN HEESE Co-Authors: Lisette Hornstra Heleen Pennings Kim Stroet</p>	<p>Capturing the dynamic nature of motivating teaching: Validating a real-time observation instrument</p>	<p>Following self-determination theory, research has shown that need-supportive teaching practices, including autonomy support and providing structure, can foster students' motivation. Conversely, need-thwarting teaching, such as controlling or chaotic teaching, can undermine motivation. Previous studies primarily addressed the extent of need-supportive or need-thwarting teaching practices as differences between teachers. However, motivating teaching practices tend to be dynamic in nature and fluctuate from moment to moment. Hence, the current study aims to develop a method that captures how motivating teaching practices unfold continuously over time. Employing a micro-analytical approach, the Continuous Assessment of Interpersonal Dynamics joystick method will be applied to the two dimensions of the circumplex model of (de)motivating teaching (Aelterman et al., 2019): autonomy-control and structure-chaos. Hereby, need-supportive and need-thwarting teaching practices can be captured simultaneously and in real time. Three coders will code video-observations with a joystick, following an observation guide. Existing video and survey data from 489 Dutch pre-vocational education students (aged 12-13) and 36 teachers will be used. Internal validity will be examined through multidimensional scaling and construct validity by comparing the real-time codes with teachers' and students' perceptions of teachers' motivational practices and with previously given (non-micro) observation codes. Associations with students' motivation will indicate the predictive validity. Using real-time coding techniques, we aim to develop an integrative method to capture the dynamic nature of motivating teaching practices, through which accurate insights into the role of teachers in students' motivation can be obtained.</p>
<p>Giada VICENTINI Co-Authors: Roberto Burro Daniela Raccanello</p>	<p>A training on emotional competence with adolescents: Efficacy and role of personality</p>	<p>Emotional competence includes the ability to express, understand, and regulate emotions. Many studies documented the efficacy of trainings in enhancing socio-emotional skills in young people. However, little attention has been paid to factors that can facilitate learning in such contexts, such as personality traits. This study aimed at exploring: (a) the efficacy of a training on emotional competence in increasing adolescents' knowledge on facial expression of emotions, emotional lexicon, and emotion regulation strategies; and (b) the influencing role of the Big Five personality</p>

		<p>traits on learning in such training. We involved 236 sixth and seventh-graders from Italy, divided in an experimental and a control group. The adolescents assigned to the experimental group participated in a four-unit training on emotional competence, during school time. Before and after the training, both groups completed questionnaires assessing their knowledge and Big Five personality traits. Through repeated-measure ANOVA, we found that, after the training, the participants in the experimental group increased their knowledge on facial expression of emotions, emotional lexicon, and emotion regulation strategies, compared to both the pre-training phase and the control group. Agreeableness was positively correlated to learning of emotional lexicon. On the whole, our findings confirmed the efficacy of the implemented training to enhance adolescents' emotional competence, also highlighting the role of personality in influencing learning. Notwithstanding limitations (e.g., absence of a follow-up assessment), this study confirmed the utility of emotion-based trainings, encouraging to consider individual differences when designing them.</p>
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Presenting Author, Co-Authors	Title of Presentation	Abstract
<p>Christine WOLFGRAMM</p> <p>Co-Authors: Corina Wustmann Seiler Zippora Bühler Cornelia Rüdüsüli</p>	<p>Self-regulation and playfulness as resources for teacher well-being</p>	<p>The well-being of teachers plays a decisive role in the quality of teaching and the promotion of student learning. To ensure the long-term well-being of teachers, it is important not only to create good working conditions, but also to strengthen personal resources. These resources include the ability to self-regulate and, we assume, teachers' playfulness. However, there is currently a lack of knowledge about the interplay of these two resources in terms of their impact on teacher well-being. Furthermore, there is no existing instrument for measuring teacher playfulness in elementary, middle, and high school settings. This exploratory study aims to 1) investigate the structure and relationship among different measures of self-regulation, 2) develop a questionnaire specifically designed to assess teacher playfulness, 3) examine the relationship between playfulness and self-regulation, and 4) analyze the connections between playfulness, self-regulation, and teacher professional well-being. An online survey will be conducted with student teachers and teachers in German-speaking Switzerland, using established questionnaires and newly developed measures. The collected data will be analyzed using statistical methods such as exploratory factor analyses and structural equation models. This study aims to contribute to the theoretical understanding of how teachers cope with stress. It seeks to provide insights into the nature and measurement of teachers' self-regulation and playfulness. Additionally, the development of valid measurement instruments will facilitate future research in this area. These efforts will help enhance our understanding of the impact of these personal resources on teacher well-being and performance.</p>

SYMPOSIA

1

Symposium

Chair:

Sarah Teresa Steffgen

Discussant:

Maarten Vansteenkiste

Title:

Emotion regulation from the perspective of Self-Determination Theory

Abstract:

Emotion regulation (ER) is a key skill empowering individual to navigate emotional experiences. It involves influencing the occurrence, timing, and expression of emotions (Gross, 1998). Much of the existing research on ER investigates specific ER strategies. Within the framework of Self-Determination Theory (SDT), researchers shifted the focus from concrete strategies to the degree of which individuals are autonomous (integrative ER) versus controlled (suppressive and dysregulated ER) in their emotion processing (Roth & Benita, 2023). This symposium presents recent advancements in understanding these ER styles. Papers 1 and 2 concentrate on ER's impact on engagement in educational settings. The first paper demonstrates the foundational role of psychological need satisfaction, while the second paper illustrates how ER influences students' responses to failures. The third paper shows the important role of ER for mental health during crises, such as the COVID-19 pandemic. The fourth paper investigates combinations of parenting styles as antecedents for adolescents' ER. Taken together, these studies underscore the crucial role of autonomy in emotion regulation. The findings highlight SDT as a promising avenue for advancing research on emotion regulation, shedding light on its multifaceted dynamics, antecedents and implications for well-being across various contexts.

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. <https://doi.org/10.1037/1089-2680.2.3.271>

Roth, G., & Benita, M. (2023). Integration versus minimization of emotional experiences: Addressing adaptive emotion regulation. In R. M. Ryan (Ed.), *The Oxford Handbook of Self-Determination Theory* (pp. 200–214). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780197600047.013.10>

Paper 1

Presenting Author:

Moti Benita

Co-Authors:

Lennia Matos**Rafael Gargurevich**

Title:

Emotion regulation styles and academic engagement: The mediating role of basic psychological needs

Abstract:

Behavioral and emotional engagement stand as the hallmarks of students' optimal motivation. However, not all students exhibit equal levels of engagement, potentially due to the inherent stress and negative emotions associated with being a student. Thus, individuals' emotion regulation capacities may play a pivotal role in explaining variations in students' engagement. This research draws on self-determination theory to propose that the regulation style of emotional integration, positively predicts behavioral and emotional engagement, while the styles of emotional suppression and dysregulation styles negatively predict it. We further explored the hypothesis that basic need satisfaction and frustration mediate these relationships. Study 1, a cross-sectional examination, involved 895 Peruvian high school and college students (mean age = 18.61, SD = 3.46, 50% females). Structural equation models result indicated emotional integration were positively related to behavioral and emotional engagement, mediated by basic need satisfaction. In contrast, emotional suppression and dysregulation were negatively related to behavioral and emotional engagement, mediated by basic need frustration. Study 2, a daily study involving 206 American college students (mean age = 19.98, SD = 1.22, 75% female, 23% male, 2% non-binary), examining cross-level mediation models. The results showed that emotional integration predicted daily behavioral and emotional engagement, mediated by daily need satisfaction. Furthermore, emotional dysregulation negatively predicted daily behavioral and emotional engagement, mediated by reduced basic need satisfaction. Finally, emotional dysregulation and emotional suppression negatively predicted emotional engagement, mediated by increased basic need frustration. In conclusion, these findings underscore the significance of emotion regulation styles in shaping students' engagement.

Paper 2

Presenting Author:

Guy Roth

Co-Author:

Yhonatan Sharabee

Title:

Emotion regulation styles and the tendency to learn from academic failures

Abstract:

Research on learners' reactions to failure finds negative emotions may present an obstacle for learning. A painful experience of failure may result in disengagement and avoidance. However, research on emotion regulation and learning from failure is scarce. Self-determination theory's (SDT) conception of autonomous and controlled emotion regulation differentiates between integrative emotion regulation (IER; taking interest in negative emotions) and suppressive emotion regulation (SER; an attempt to avoid or suppress negative emotions).

Three longitudinal studies were conducted, one with adolescents and two with college students (total N = 908), to test the hypothesis that unlike SER, IER predicts the tendency to learn from academic failure. The studies included measurements before (T1) and after an academic failure (T2). At T1, participants responded to measures of emotion regulation in class, academic efficacy, and level of engagement. In T2, they reported on their adaptive and maladaptive responses to failure, including their tendency to learn from failure and their engagement level following failure. In all studies, IER was related to adaptive responses to failure whereas SER was related to maladaptive responses. Adaptive responses to failure mediated the association between IER and learning from failure when controlling efficacy measured at T1. In addition, learning from failures mediated the association between IER and future engagement following failure even when controlling for academic efficacy and initial engagement measured at T1. These findings suggest styles of emotion regulation play an important role in the tendency to learn from failure.

Paper 3

Presenting Author:

Joachim Waterschoot

Co-Authors:

Lennia Matos**Rafael Gargurevich****Maarten Vansteenkiste****Bart Soenens****Sofie Morbée**

Title:

A cross-national focus on the beneficial role of emotion integration during the pandemic

Abstract:

The current research includes a series of studies examining the role of emotion regulation strategies during the first year of the COVID-19 pandemic in Belgium and Peru. We focus on the direct effects of two maladaptive (i.e., suppression and dysregulation) and one adaptive (i.e., integration) strategy on mental health and motivation, but also on their moderating effects on the effects of basic psychological needs experiences.

First, a person-centred approach identified three distinct emotion regulation clusters in both countries, with one group showing high levels of emotion integration, another combining suppression and dysregulation, and a third scoring low on all strategies. Notably, the group characterised by high emotion integration had the most beneficial outcomes in terms of motivation and mental health. These clusters were found to moderate the unique effects between need satisfaction and frustration on the set of outcomes, with the high integration cluster buffering the negative effects of need frustration.

A similar set of analyses was conducted in a dimensional manner, including longitudinal outcomes assessed after the initial lockdown. While suppression and dysregulation were uniquely associated with impaired mental health, enlarging the negative effects of need frustration, integration uniquely showed associations with more eudaimonic outcomes such as post-traumatic growth and identity development.

In summary, this research highlights the protective role of integrative regulation in promoting eudaimonic outcomes. We believe that this set of analyses contributes to the immunization hypothesis literature by demonstrating its cross-cultural efficacy in promoting well-being and meaning-pursuit in challenging times.

Paper 4

Presenting Author:

Sarah Teresa Steffgen

Co-Authors:

Nantje Otterpohl**Avi Assor****Yaniv Kanat Maymon****Malte Schwinger**

Title:

The impact of parenting on emotion regulation: A latent profile analysis

Abstract:

Parents are important socializing agents for children's capacity to regulate negative emotions. Based on self-determination theory, parental conditional positive and negative regard (PCPR; PCNR) are considered controlling types of emotion socialization and contrasted with parental autonomy support (PAS). Variable-oriented research suggests that controlling parenting practices foster controlled forms of emotion regulation, like suppression and dysregulation, whereas PAS is linked with autonomous emotion regulation, specifically integrative emotion regulation. Using a person-oriented approach, we examined naturally occurring combinations of parenting practices for emotion socialization and their associations with children's emotion regulation and mental health outcomes. Analyzing a sample of $N = 1198$ adolescents from Germany and Israel, exploratory latent profile analysis revealed five latent profiles: one with medium levels, another with high levels across all parenting practices, and profiles characterized by mainly PCNR, mainly PAS, and high levels of both PAS and PCPR. As expected, results revealed the most detrimental outcomes for profiles with high PCNR regarding dysregulated, suppressive and integrative emotion regulation, as well as anxiety and depressive symptoms. Compared to the profile with mainly PAS, the profile with high PCPR and PAS showed more maladaptive outcomes. Mainly high levels of PAS were found to have the most beneficial effects. Our results provide support for the idea that autonomy support in parenting leads to an autonomous form of emotion regulation, whereas the occurrence of controlled forms of emotion socialization promotes controlled forms of emotion regulation, even in the presence of autonomy support.

2

Symposium

Organizer:

Manuela Haldimann

Chair:

Verena Jörg

Discussant:

Benjamin Dreer-Goethe

Title:

Teacher well-being through the lens of the Job Demands-Resources theory

Abstract:

With many education systems around the globe facing teacher shortages, understanding teacher well-being and teacher retention is critical. The Job Demands-Resources framework (Bakker & Demerouti, 2017) emphasizes the importance of resources for well-being and retention-related outcomes; yet, limited research exists for pre-service and early career teachers. Using the Jobs Demands-Resources framework as a starting point, this symposium aims to deepen our understanding of how resources such as self-efficacy are associated with (pre-service) teacher well-being and, in turn, retention-related outcomes, such as career intentions. The first two studies of the symposium focus on pre-service teachers. Using data from Austrian pre-service teachers, the first study examined how personal and initial teacher education resources predict membership in different well-being profiles and how the identified well-being profiles differ in their reports of career intentions. The second study reports an intervention conducted with Australian pre-service teachers to promote two important personal resources and their predictive value for retention-related outcomes. Based on longitudinal data of German early career teachers, the third study tested teachers' basic need satisfaction as a resource for their well-being and, in turn, for their later career intentions and proactive work practice. Taken together, the three studies of the symposium highlight the centrality of resource utilization for (pre-service) teachers, while illuminating nuances in predictors and outcomes derived from unique – but complementary – hypothesized models and methodological approaches. The findings underline the importance of promoting resources and (pre-service) teacher well-being for teacher retention.

Paper 1

Presenting Author:

Manuela Haldimann

Co-Authors:

Rebecca Collie**Tina Hascher****Doreen Holtsch**

Title:

Well-being profiles of pre-service teachers: Links with resources and retention-related outcomes

Abstract:

Recent work has highlighted well-being as a critical factor in teachers' career development and retention. However, there is limited empirical evidence on well-being before career entry, and even less on pre-service teacher well-being profiles. Therefore, we investigated the well-being of pre-service teachers in a multi-dimensional, context-specific, and person-centered way. Embedded in the Job Demands-Resources theory (Bakker & Demerouti, 2017) and using the model of scholastic well-being (Hascher, 2023), we identified well-being profiles and investigated predictors and outcomes of profile membership. Among 2867 Austrian pre-service teachers, latent profile analysis revealed six well-being profiles. We further investigated two initial teacher education resources (perceived quality of teaching practicums, perceived coherence between teaching practicums and university courses), one personal resource (self-efficacy related to teacher-student interactions), and five pre-service teacher characteristics (gender, age, enrolled study year, part-time job as a teacher, caring responsibilities), which all predicted profile membership, but in distinct ways. Pre-service teachers of the six well-being profiles also differed in their reports of their quitting intentions for the initial teacher education program and the teaching career. The results underline the importance of conceptualizing well-being as a multidimensional construct and call for profile-specific well-being interventions. A particular focus could be on pre-service teachers enrolled in higher study years as they had higher chances of membership in less adaptive well-being profiles.

Paper 2

Presenting Author:

Helena Granziera

Title:

Building personal resources in pre-service teachers: Experiences from an Australian university

Abstract:

Teacher attrition and retention have emerged as significant issues for a range of developed countries (Billingsley & Bettini, 2019). Although a significant body of research has focused on the reasons teachers may leave the profession (e.g., Carver-Thomas & Darling-Hammond, 2019; Madigan & Kim, 2021), more recent work has focused on the strategies to promote teacher retention, including how to build teachers' personal resources. Notably, pre-service teacher education has been identified as a particularly crucial period during which teachers' commitment, dedication, and resilience – all of which comprise important personal resources for teachers (Skaalvik & Skaalvik, 2018), may be built. Despite this acknowledgment, there is a dearth of research investigating how these resources can be practically built in the context of pre-service teacher education.

Harnessing the Job Demands-Resources framework, the present study aimed to address this gap by examining the effects of a multitiered personal-resource-building intervention on two salient personal resources for pre-service teachers: adaptability and self-efficacy, and in turn, two relevant retention-related outcomes: occupational commitment, and readiness to teach. This paper presents the preliminary results from quantitative and qualitative data gleaned from 130 undergraduate and postgraduate students undertaking teacher education at an Australian university. The findings largely suggest that personal resources can be fostered through targeted interventions, which in turn has implications for pre-service teachers' career intentions.

Paper 3

Presenting Author:

Verena Jörg

Co-Authors:

Theresa Dicke**Ulrike Hartmann****Mareike Kunter**

Title:

Predicting beginning teachers' proactive behaviour and intention to quit: A cross-lagged analysis

Abstract:

Dedicated teachers who proactively deal with changing requirements and experience high levels of commitment to their profession are considered key for schools' current and future quality. Building on the Job Demand-Resources Model and Self-Determination Theory, this study examines the role of fulfilling teachers' basic needs for autonomy, competence, and relatedness as resources for their subsequent well-being, proactive work behaviour and turnover intentions during the challenging time of their early career years. In addition to previously researched direct effects of teachers' basic need satisfaction on their well-being, we hypothesize additional mediated effects on their proactive behaviour and turnover intentions through enhanced well-being. Data from 615 German teachers (77% female) surveyed at four measurement points at the end of their pre-service training, as well as one, four and five years later is analysed using cross-lagged panel models. Results indicate significant cross-lagged effects of teachers' basic need satisfaction on their later well-being, which in turn predicts their subsequent proactive work behaviour and turnover intentions. Particularly, satisfaction of teachers' need for competence emerges as key predictor for proactive behaviour, while turnover intentions are primarily influenced by the satisfaction of their need for relatedness. Beyond replicating the significance of basic need satisfaction for the well-being of early-career teachers, our study identifies its role in affecting their intentions and behaviour, namely their proactive work behaviour and intention to quit. Implications for interventions, targeting school climate and leadership styles, to support young teachers in approaching challenges proactively and strengthen their commitment to the profession are discussed.

3

Symposium

Chair:

Laura Ohmes

Frances Hoferichter

Discussant:

Daniela Raccanello

Title:

Individual and contextual factors affecting well-being, satisfaction, and performance in education

Abstract:

School students, teachers, and preservice teachers encounter various challenges in educational and academic contexts on a daily basis. How individuals handle these challenges seems to depend on a variety of contextual and individual factors such as perceived support, personality, coping styles and emotion regulation. These factors, in turn, may impact well-being, stress level, study satisfaction, and performance. The symposium aims to lay out protective factors supporting school students, teachers, and preservice teachers in dealing with daily challenges. It offers insights in the complex nature of individual and contextual factors contributing to well-being, satisfaction and performance in education and academia. The studies of the symposium provide profound findings using cross-sectional, longitudinal, or mixed-methods-designs and in-depth data analyses including discriminant analysis, LASSO regression approach and random intercept cross-lagged panel models. The first study shows how individual (e.g., migration background, emotion regulation) and contextual factors (e.g., perceived autonomy and competence support) influence students' school well-being. Similarly, the second study investigates what factors (e.g., personality, coping styles, and perceived student disruption) predict teachers' psychological and physiological strains. Bridging the gap towards teacher education, the third study investigates the relationship between emotion regulation strategies, study satisfaction and levels of stress among preservice teachers. The last study explores what coping strategies preservice teachers use during sketchnoting and similar learning methods (writing, diagramming) when learning from text. In sum, the symposium provides profound insights into how individual and contextual factors may support school students, teachers and preservice teachers in navigating everyday challenges in educational and academic contexts.

Paper 1

Presenting Author:

Juliane Schlesier

Co-Author:

Ramona Obermeier

Title:

Individual and contextual determinants of primary and early secondary school students' well-being

Abstract:

Despite the considerable attention and research dedicated to students' school well-being, our understanding of the intricate details in this field is still at an early stage. A significant gap persists in knowledge concerning the individual and contextual factors associated with exceptionally high or low levels of students' school well-being. This study is strategically positioned to contribute to bridging this research gap by drawing conclusions about students' school well-being based solely on specific individual and contextual factors. For this reason, a survey involving 635 primary and lower secondary school students was conducted using a paper-pencil questionnaire. The survey focused on gathering information about contextual factors such as perceived autonomy support and perceived competence support, as well as individual factors including school-related helplessness, gender, immigration background, need for additional support, and the emotion regulation strategies 'reappraisal' and 'suppression'. The results obtained through MANOVA and discriminant analysis show that school-related helplessness, suppression of emotions, and the levels of autonomy and competence support perceived from teachers are key factors that profoundly provide information on whether students feel particularly well at school or not. This discovery is especially noteworthy as it highlights the potential for using data that has not explicitly collected for assessing students' school well-being to address school well-being related questions; by leveraging existing data, educational institutions can derive conclusions about students' well-being without imposing additional strains on their resources.

Paper 2

Presenting Author:

Gabriel Jenni

Co-Authors:

Alexander Wettstein**Ida Schneider****Fabienne Kühne****Martin Grosse Holtforth****Roberto La Marca**

Title:

Predictors of psychological strain and allostatic load in teachers

Abstract:

Teacher stress significantly challenges teachers' health, teaching quality, and students' motivation and achievement. Thus, it is crucial to identify factors that effectively prevent it. Using a LASSO regression approach, we examined which factors predicted teachers' psychological strain and allostatic load over two years. The study included 42 teachers (28 female, $M_{age} = 39.66$, $SD = 11.99$) and three measurement time points: At baseline, we assessed teachers' (a) self-reports (i.e., on personality, coping styles, and psychological strain), (b) behavioral data (i.e., videotaped lessons), and (c) allostatic load (i.e., body mass index, blood pressure, and hair cortisol concentration). At 1- and 2-year follow-ups, psychological strain and allostatic load biomarkers were reassessed. Neuroticism and perceived student disruptions at baseline emerged as the most significant risk factors regarding teachers' psychological strain two years later, while a positive core self-evaluation was the most important protective factor. Perceived support from other teachers and school administration and as well as adaptive coping styles were protective factors against allostatic load after two years. The findings suggest that teachers' psychological strain and allostatic load do not primarily originate from objective classroom conditions but are attributable to teachers' idiosyncratic perception of this environment through the lens of personality and coping strategies.

Paper 3

Presenting Author:

Frances Hoferichter

Co-Author:

Diana Raufelder

Title:

The interplay of pre-service teachers' emotion regulation, perceived stress and study satisfaction

Abstract:

Emotion regulation strategies (ERS) play a crucial role in the teaching profession due to the high levels of daily stress and demands in the school environment, which can significantly affect job satisfaction. Therefore, it is imperative for prospective teachers to cultivate effective ERS during their university teacher training. According to Lazarus' transactional stress theory (Lazarus & Folkman, 1987), the internal process of emotion generation, particularly pre-service teachers' cognitive assessments of a situation, is vital for their ability to handle challenging circumstances. While previous research has primarily focused on how ERS predicts stress and job satisfaction among practicing teachers, there has been a lack of attention to pre-service teachers. Additionally, studies have not adequately distinguished between fluctuations within individuals and differences between individuals in the development of ERS. Furthermore, the causal relationships between ERS, perception of stress, and study satisfaction have not been explored in depth.

By utilizing a random intercept cross-lagged panel (RI-CLPM) model, our findings have highlighted important distinctions both within individuals and between individuals in the development of ERS. These findings suggest that adaptive ERS, such as reappraisal, are more likely to predict study satisfaction than the other way around. The results indicate that the interplay between ERS, stress, and study satisfaction becomes more stable toward the end of the first year at university. At the beginning of the academic year, all these constructs seem to be relatively flexible and context-specific, as no autoregressive carry-over effects were observed.

Paper 4

Presenting Author:

Laura Ohmes

Title:

When I decided to just do it, I felt better: Preservice teachers' coping strategies for sketchnoting

Abstract:

Sketchnoting can be used to clarify complex information by drawing and is therefore a potentially useful learning method for preservice teachers to study science texts. However, some students feel anxious about drawing. Therefore, the study aimed to investigate what coping strategies preservice teachers use to cope with negative affect during sketchnoting, how the use of coping strategies differs to other learning methods (diagramming, writing), and how the coping strategies are related to the learning outcome. First, interviews with ten preservice teachers (Mage=24,5 years; 80 % female) were conducted to identify coping strategies during sketchnoting. Afterwards, an intervention study with pre-post-test was conducted in which preservice teachers (N=239; Mage = 21,80 years; 69.7 % female) created sketchnotes, diagrams (with boxes and arrows) or written summaries on a science text. The interview study indicated approach coping strategies that can be linked to the need for competence and autonomy (Skinner et al., 2003; Ryan & Deci, 2000): information seeking (repeated reading, marking text), problem solving (adjusting the notations, working faster) and negotiation (pragmatism). Preliminary results of the intervention study show no significant differences between groups regarding coping strategies and the learning outcome after the intervention. However, the estimation of sketchnoting as useful positively correlates with to the use of approach coping strategies (adjusting notations, pragmatism) in the sketchnoting group. Additionally, there is a tendency that approach coping positively correlates with the learning outcome. The study suggests that educators should clarify the value of sketchnoting and foster the use of approach coping strategies in sketchnoting.

4

Symposium

Chair:

Anja Henke**Rebecca Lazarides**

Discussant:

Martin Daumiller

Title:

Multimodal research on emotion, motivation, and self-regulation in education

Abstract:

Motivation and emotion are relevant for cognitive processing, performance gains, and choice behaviors. However, research often assesses motivational and affective processes using self-report data. Although subjective perspectives are important, self-report data has certain limitations, such as response biases. The present symposium brings together multimodal research in the field of motivation and emotion focusing on different educational contexts, using electrodermal activity (EDA) and video data or behavioral trace data combined with survey data allowing for a more granular and deeper understanding of emotional, motivational, and self-regulatory processes and mechanisms of learning.

Paper 1 uses classroom video and EDA data of secondary school students in temporal network analysis and reveals how links between stimulus events, emotional responses and emotion regulation strategies in group tasks change over time. For example, humor initially is used as a regulation strategy in positive situations, but later in negative situations.

Paper 2 uses video and EDA data in higher education and shows that providing awareness training on harassment in medical situations before simulation training is associated with higher emotional arousal, and deeper understanding of harassment and its negative impacts.

Paper 3 uses behavioral trace and survey data in higher education and indicates that higher motivation and self-regulatory competences are associated with higher learning resource use in a learning management system using structural equation modelling.

Paper 4 uses logfile and survey data of secondary school students and identifies differently advantageous self-regulation-related behavioral patterns while working with an intelligent tutoring system using latent profile and transition analysis.

Paper 1

Presenting Author:

Tiina Törmänen

Co-Authors:

Mohammed Saqr**Sonsoles López-Pernas****Kristiina Mänty****Hanna Jarvenoja**

Title:

Exploring groups' emotional dynamics and socially shared regulation in collaborative learning

Abstract:

Prior research has evidenced that students exhibit diverse emotional responses to stimulus events during collaborative learning, but the empirical evidence on the connections between stimulus events, students' emotional reactions, and emotion regulation strategies in a collaborative learning context is still scarce. This study aims to explore how group members collaboratively construct co- and socially shared emotion regulation in interaction. It investigates secondary school students' (N=95) emotional reactions and related emotion regulation strategies, while they perform a collaborative learning task in small groups (N=31). The groups' working was videotaped to observe stimulus events, the valence of the students' emotional reactions, and emotion regulation strategies from the students' verbal interactions. Students' emotional activation was captured with electrodermal activity. As a result, social and task-related stimulus events were identified, followed by positive activating and deactivating, and negative activating and deactivating emotional responses of students. Also, various types of emotion regulation strategies (situation modification, attentional deployment, cognitive change, response modulation, using humor, showing empathy) were identified. Utilizing temporal network analysis, the study demonstrates the temporally unfolding nature of the connections between stimulus events, students' emotional reactions, and emotion regulation strategies. The study enhances the understanding of emotion formation in collaborative groups and sheds light on how a group of students collectively employ co- and socially shared emotion regulation strategies to establish and restore favorable emotional conditions for collaboration.

Paper 2

Presenting Author:

Jason Harley

Co-Authors:

Negar Matin**Keerat Grewal****Tiina Törmänen****Byunghoon (Tony) Ahn****Myriam Johnson****Ning-Zi Sun**

Title:

Physiological arousal in anti-harassment simulations: Addressing harassment in medical education

Abstract:

Harassment has harmful effects on the emotional well-being of medical trainees and ultimately the quality of patient care. However, effective interventions to prevent and address harassment are lacking. Simulation-based training is therefore used as an anti-harassment training tool in a novel and promising approach, allowing learners to process and reflect on their emotional reactions to high-stress situations in a safe environment. Drawing from control-value theory, electrodermal activity (EDA) is a psychophysiological signal that measures skin conductance as a reflection of emotional arousal. Analyzing EDA during anti-harassment simulations allows to objectively link trainees' emotional arousal with behavioral outcomes. This study therefore investigated the impact of harassment on medical trainees' psychophysiological responses and behavioural outcomes. We aimed to determine if harassment events were associated with meaningful variations in arousal levels and whether these levels could predict trainees' intervention decisions. Internal Medicine trainees were recruited and divided into two groups. One watched anti-harassment educational videos on harassment intervention before participating in a training simulation (Video-first group), and the other experienced these in reverse order (Simulation-first group). We observed significant increases in arousal during and after harassment events compared to baseline in both groups. Notably, the Video-first group had significantly higher arousal levels during the harassment than after the harassment and showed a higher likelihood of intervening. Our research bridges the gap between theory and practice, highlighting the crucial interplay between arousal and training sequence in decision-making after harassment events within clinical settings. Results underscore the need for well-structured training programs in medical education.

Paper 3

Presenting Author:

Luise von Keyserlingk

Co-Authors:

Jakob Schwerter**Steffen Wild****Olga Kunina-Habenicht****Fani Lauermann**

Title:

How do motivation and self-regulation shape learning behaviours in learning management systems?

Abstract:

Educational resources in learning management systems are often underutilized despite their effectiveness in supporting student success. Low-performing students—i.e., those most likely to benefit from learning resources—are least likely to use them. The study uses survey data in combination with digital trace data from a learning management system to examine the relations between students' motivation, self-regulated learning (SRL) skills, and performance outcomes, to explain potential disparities in the use of educational resources. Drawing on the Situated-Expectancy-Value-Theory (SEVT) and self-regulated learning literature, we expected that students with higher motivation and self-reported SRL skills would use more learning resources and voluntary practice quizzes in a learning management system, which should lead to better exam performance in the course.

We used data from 210 college students from two social science lectures at a German university. Consistent with our hypotheses, structural equation models revealed that higher motivation and SRL predicted higher use of learning resources, such as practice quizzes and lecture slides. In contrast, cost values and self-reported procrastination were linked to a lower use of learning resources. Students who were using the practice quizzes obtained better exam scores. Results also showed positive indirect effects of subjective task values and negative indirect effects of procrastination on exam grades through practice quiz usage.

This study underscores the importance of motivation and self-regulated learning in students' use of learning resources and subsequent exam performance. The findings further encourage the inclusion of practice opportunities in higher education lectures to support students' learning and overall academic achievement.

Paper 4

Presenting Author:

Anja Henke

Co-Authors:

Yoana Omarchevska**Johann Chevalère****Hae Seon Yun****Verena Hafner****Niels Pinkwart****Rebecca Lazarides**

Title:

Behavioral profiles, motivation, and emotions in an intelligent tutoring system

Abstract:

Adaptive learning technologies such as intelligent tutoring systems (ITS) provide highly individualized learning opportunities and positively affect student academic outcomes. However, so far, it is an open question whether all students benefit equally from learning with ITS. In the present study, we investigate behavioral patterns of $N = 152$ students who learned with an (emotionally) adaptive ITS in real classroom settings. Against the theoretical backgrounds of control-value theory and Boekearts' model of self-regulation, using latent profile analyses (LPA) on logfile data of students, we identified three different behavioral patterns in students learning within the ITS. Results of LPA with covariates showed that learning behavior patterns are substantially associated with motivational-affective, cognitive learning characteristics, as well as with the ITS' type of adaptivity and with individual characteristics. Latent transition analyses further revealed that students followed distinct transition patterns of learning behaviors within the adaptive system, which were differentially related to motivational-affective outcomes, but not to knowledge gains. Our results accentuate the relevance of interindividual behavioral differences while learning with adaptive learning technologies. To support all learners adequately, ITS research needs to consider interindividual differences in learner characteristics and their role for learning outcomes.

5

Symposium

Chair:

Jenefer Husman

Discussant:

Maria Paula Paixão

Title:

Motivated futures: New perspectives and interventions for thinking about the future

Abstract:

The future influences our motivations. There are few motivational frameworks that do not include a future-oriented component. Research on future thinking has crossed disciplinary boundaries. Research in developmental psychology (life projects and stories) and educational psychology (future time perspective) has significantly contributed to what we know about the future-oriented aspects of motivation. This symposium will examine three different approaches to thinking about the future. The First paper presents a scoping review of the literature, qualitative interviews and scale development to create a conceptual framework for understanding the ways in which people initiate and sustain life projects. Utilizing a mixed-method approach, the second paper utilizes the Life Story protocol and Future Time Perspective to conduct a mixed-method study to explore the relation between stories students tell about their careers, future time perspectives, and their beliefs about the utility and expectations for their coursework. The final paper will test an intervention to support students' FTP and examines the interaction between students' Growth Mindsets and their Future Time Perspective. These three papers fit together like puzzle pieces; the Life Projects and Life Story papers provide a rich exploration of the influence of narratives on future thinking. The second paper bridges those narratives and Future Time Perspective, while the third builds on existing FTP literature to test an intervention. The discussant will pull these puzzle pieces together and present a clearer picture of the ways in which our thoughts and emotions about our futures are related to our motivation in the present.

Paper 1

Presenting Author:

Lucija Andre

Co-Authors:

Joost Jansen in de Wal**Jaap Schuitema****Thea Peetsma**

Title:

"Grow For It!": Intervention to reduce school stress and increase learning and motivation

Abstract:

Adolescents worldwide are experiencing increased levels of school stress such as feeling worried about a test or facing various day-to-day stressful school experiences (Cosma et al., 2023) that can create major negative consequences (Pascoe, et al., 2020). Simultaneously, self-regulated learning behaviors and motivation such as investment in learning and intrinsic motivation (i.e., internally driven learning) decrease during adolescence (Peetsma, et al., 2005). Intervening during adolescence via school-based interventions is therefore crucial (World Health Organization [WHO], 2022).

Future Time Perspective (FTP; Peetsma, 1992) and Growth Mindset (GM; Dweck, 2006), are typically studied as adolescent's characteristics that positively relate to motivated learning behaviors (Andre et al., 2018; Burnette et al., 2013). However, they could also reduce stress (Kooij et al., 2018; Montagna et al., 2021), and were recently suggested as distinct, yet mutually reinforcing constructs (Park et al., 2020). However, no experimental study has applied the FTP and GM theory in one intervention with the aim to reduce school stress in a broader sense (i.e., the emotional stress response in different school situations and the ability to respond to everyday school stress) and increase learning and intrinsic motivation.

This study is the first to relate the FTP with GM theory and to test the effects of the multicomponent intervention "Grow for it!" to reduce adolescents' school stress and increase learning and motivation while manipulating their FTP and GM.

Paper 2

Presenting Author:

Vinicius Coscioni

Title:

A comprehensive theory of life projects: New insights into motivation towards the future

Abstract:

This work describes the main theoretical assumptions and empirical evidence of a new comprehensive theory of life projects (LPs). The theory originated from a scoping review that analyzed the theoretical statements on LPs contained in 93 articles on psychology and related fields—a thematic analysis created six theoretical dimensions describing different LP properties and correlates.

A comprehensive definition of LPs was proposed to integrate these six theoretical dimensions. A LP was thus defined as “an ongoing evolving process to form, enact, and maintain intentional structures and actions that, altogether, encompass a long-term, meaningful, and prospective narrative capable of guiding decisions and behavior in daily life”.

This comprehensive definition grounded a qualitative study based on interviews with 26 Brazilians. Built upon a thematic analysis, a theoretical model was outlined to explain the associations between motivational and volitional features, the field of possibilities, and LPs.

Lastly, a new measure was constructed based on this LP definition. The Life Project Scale assesses identification (awareness of one’s intended future) and involvement (mobilization of plans and actions in daily life). It has excellent validity and reliability, as evidenced by thousands of participants in Brazil and Portugal.

These studies form a research line that provides a LP definition applicable to distinct domains and establishes associations with other personal and contextual features. Predictive models have been created but not yet tested. Therefore, this research line can be considered the start of a new comprehensive theory of LPs.

Paper 3

Presenting Author:

Jenefer Husman

Co-Authors:

Matthew Graham**Drew White****Carolina O'Malley****Brad Sullivan****Da'Mon Merkerson****Katie Jacobson**

Title:

Stories of the future: Academic transitions, career, and changes to students' stories

Abstract:

Utilizing the Life Stories protocol, semi-structured interviews, and surveys focused on expectancies, utility value, and future time perspective; this presentation will explore the development of a small (10) set of students' present and future identities as they transition from a community college (a 2-year junior college) to a large research-intensive university in the United States. This project utilizes three research traditions in future thinking: future time perspective, narrative identity, and episodic future thinking. Expectancy Value Theory of motivation is examined in the context of their future. The focus of this study is understanding how students thinking about their personal future influences their approach to a significant life transition. The students who are the focus of the study have experienced academic and financial difficulty, meaning that university study, until recently, was out of reach. They have "bounced back" and are now eligible for a scholarship to study at a university. Understanding the lived experiences of these students, their personal narrative of their futures, the specificity, and vividness of their future, as well as discussion of their expectations for success and their valuing of the content they will cover in their coursework their first term at university.

6

Symposium

Organiser:

Ricardo Böheim**Martin Daumiller**

Chair:

Ricardo Böheim

Discussant:

Tim Urdan

Title:

Bridging motivation and engagement research: Integration and ways forward

Abstract:

Motivation and engagement are both considered fundamental in fostering students' academic progress. Scholars have established a variety of frameworks and theories to conceptualize and investigate motivation and engagement within their respective academic fields but have not fully recognized the potential for meaningful integration. In recent years, there has been a strong call for a more integrative approach to help identify synergies, clarify conceptual distinctions, and consequently foster advancements in both fields of study. The goal of the present symposium is to respond to this call by bringing together contributions that are located at the intersection of motivation and engagement. The four contributions of the present symposium draw upon theories and research from both academic fields to illustrate ways forward for their meaningful integration. The three empirical contributions are based on different motivation theories (e.g., expectancy-value theory) and conceptualizations of engagement (e.g., student engagement). Based on a longitudinal design, the first study revealed reciprocal dynamics between task value and school engagement, while findings from the second study highlight that differences in utility value are related to differences in both the quantity and the quality of learners' engagement. The third contribution investigates the co-occurrence of interest, belonging and self-efficacy, and discusses implications for understanding students' learning and engagement. The final, theoretical contribution summarizes benefits and shortcomings of both academic fields and presents an integrated model highlighting identified synergies. The discussant will comment on the strengths of an integrative perspective to enhance our understanding of the complex interplay between motivation and engagement.

Paper 1

Presenting Author:

Janica Vinni-Laakso

Co-Author:

Katja Upadyaya

Title:

Cross-lagged associations between math and language motivation and engagement

Abstract:

According to the Expectancy value theory (Eccles & Wigfield, 2020) student motivation is differentiated across subject domains and shapes domain-specific motivation. The aim of the present study is to examine the stability and cross-lagged associations of students' task motivation and school engagement across middle school, and to investigate whether students' gender and socio-economic background are related to the interplay of task motivation and engagement. Data (N=1254) was collected from 32 lower secondary schools in Helsinki at three measurement points at 7th, 8th and 9th grade (age 14-16 years). Participants filled in a questionnaire which assessed their value beliefs (intrinsic, utility attainment value) in Finnish language and Math, and general school engagement. Cross-Lagged Panel Model (CLPM) was used to examine students' task motivation and engagement separately in Math and Language. Overall, task motivation and engagement were rather stable across middle school, and higher task motivation in 7th grade was related to high engagement in 8th grade, which in turn was related to high task motivation in 9th grade in both domains. Moreover, 7th grade engagement was positively associated with 8th grade language motivation. Female students showed higher task motivation in Finnish language. No gender effect was found in Math. High SES was positively associated with engagement.

Paper 2

Presenting Author:

Meg Farrell

Co-Authors:

Monika Martin**Dr. Renkl****Werner Rieß****Tina Seidel**

Title:

Does teacher-students' utility value of video-analysis relate to their engagement via noticing?

Abstract:

Novices typically have difficulty noticing many different teaching strategies, especially content-specific ones. Video-analysis trainings have been used to foster teacher-students' noticing of relevant practices and interventions suggest that their engagement in these analysis tasks is pivotal for their learning success. However, only a few investigations have looked into the motivation mechanisms behind this success. In particular, teacher-students' motivational experiences in utility value seem especially promising to explore in this study context, considering the potential utility value of a practice-oriented video-analyses for novices. The present contribution investigates the role of teacher-students' perceived utility value and its relation to teacher-students' engagement during a video training. We investigate this relationship via content analysis of 130 teacher-students' video-analysis responses after a training intervention and an epistemic network analysis comparison of low vs. high utility value groups. Results indicate that overall, teacher-students' noticing engagement was more focused on general pedagogy, typical of novices. However, in the group comparison with epistemic network analysis, teacher-students reporting high utility value of the video-analysis training demonstrated network connections reflecting engagement in noticing all relevant teaching strategies, and were particularly differentiated from participants with low utility value in their network connections reflecting engagement in noticing more content-specific strategies (e.g., suggesting factual alternatives, eliciting cognitive conflict for students' misconceptions), which are typically more difficult for novices. For teacher education, these results suggest that video-analysis training interventions with a high degree of utility value to future teachers may support their engagement in noticing relevant teaching strategies.

Paper 3

Presenting Author:

K. Ann Renninger

Co-Authors:

Lux K. Barton**Gia Bautista****Mary Garcia-Barrios****Iyinoluwa Ogunyinka****Kathryn R. Riley**

Title:

Exploring the relation among interest, self-efficacy, and belonging in classroom learning

Abstract:

Motivation is a broad term referencing individuals' will to engage, set, and work to realize goals based on their social and cultural circumstances, whereas engagement describes the context of participation and individuals' cognitive, affective, and behavioral responses to it. In this presentation we draw on findings from an exploratory mixed method study, to consider the relation between motivation and engagement that is meaningful (not just time on task), and more specifically the relation among interest, self-efficacy, and belonging in students' learning during science inquiry. While all three of these motivational variables have been found to support sustained engagement and school achievement, the relation among them and its implications for students' learning and engagement has not been explored. Participants were a cohort of 12 (4 boys, 8 girls) urban, Black, middle-school age youth living in high poverty who were enrolled in the second year of a required 5-week summer science program. Within-person analyses before, following, and five weeks post instruction showed that the three variables were increasingly coordinated over time, and that the students' classroom learning was influenced by their level of interest in the discipline and the lab activities, belief that they could be successful in working with science, and feelings about whether they belonged in the science class. Findings pointing to synergies in students' interest, self-efficacy, and belonging as they work with others (peers, instructors) on disciplinary content will be discussed as underscoring the importance of integrating the study of motivation and engagement in studies of classroom learning.

Paper 4

Presenting Author:

Ricardo Böheim

Co-Authors:

Martin Daumiller**Tina Seidel**

Title:

Engagement and motivation: Distinction, synergies, and an integrated model for educational contexts

Abstract:

Motivation and engagement are closely related constructs. However, scholars have not fully recognized the potential for meaningful integration of insights from both academic fields. Conceptual boundaries between these constructs are often blurry, and sometimes used interchangeably. This proposal argues for their distinct, yet interrelated nature, emphasizing that engagement conceptualizes learners' actions, while motivation delves into underlying psychological processes that energize behavior. Acknowledging the rich history of motivational theories and the relatively recent emergence of engagement theory, the present proposal identifies promising synergies across both academic fields. Despite skepticism from motivational scholars, research and theory of student engagement offer several insights: (1) a multidimensional perspective on action encompassing cognitive, emotional, and behavioral dimensions; (2) the identification of supportive contextual factors beyond the motivational dynamics; and (3) a holistic lens for unifying motivational constructs. At the same time, this proposal suggests that academic work on motivation can advance the field of engagement by: (1) providing a frame to organize antecedents, indicators, and consequences of engagement; (2) offering an extensive overview of differentiated descriptions of motivational appraisals; (3) adopting a process-oriented view; and (4) adding a developmental perspective through reinforcement mechanisms of self-evaluations. The authors developed an integrated model for students' motivated engagement in classroom learning, advocating for a meaningful integration of insights from both fields to deepen our understanding of the complex dynamics between motivation and engagement in student learning processes.

7

Symposium

Chair:

Wendy Symes**Olivia Metzner**

Discussant:

Dave Putwain

Title:

Teacher use of motivational messages in the classroom: What do we know?

Abstract:

Teachers use a range of strategies to increase student engagement, including communicating to students the value of engaging in their academic work (e.g., to learn, to advance one's career, to avoid failure, and so on). Recently, there has been growing interest regarding the factors that influence teachers' use of these motivational messages, and the impact they have on student outcomes. However, research in the field has lacked a unifying theoretical or methodological framework and consequently work in this area has been fragmented. The purpose of the planned symposium is to bring these different perspectives together to provide an overview of current findings. The four studies included in this symposium come from three different countries (England, Germany and Spain) and have been chosen because they reflect the emerging approaches in the field. All the selected papers examine the role of motivational messages in authentic classrooms but differ in terms of theoretical background (i.e. extended parallel-processes model, self-determination theory, control-value theory), approaches taken to measuring motivational messages (i.e., self-report or audio-recordings and the use of large language models), and the foci of the research (i.e., the factors that influence teacher motivational message use, or the impact of motivational messages on student outcomes). It is hoped that the symposium will move research in this field forward by providing a clear picture of what is currently known about motivational messages and enabling researchers to incorporate the current strengths and innovative approaches being taken into future research.

Paper 1

Presenting Author:

Hannah Wilkinson

Title:

Efficacy appeals: Re-imagining teachers' use of test-preparation strategies

Abstract:

Teachers regularly communicate the importance of effective test-preparation to students, especially within the high-stakes classroom (Barksdale-Ladd & Thomas, 2000). This paper considers these motivational communications from a psychological perspective, allowing for a deeper understanding of how these messages may be interpreted by students and how they may impact students' motivations and behaviours. Considered within the context of the Extended Parallel Process Model (Witte, 1992), this paper reconceptualises test-preparation strategies as 'efficacy appeals', and considers how students' beliefs about the effectiveness of strategies they are taught (response efficacy), and their perceived self-efficacy in using these strategies affects their academic engagement. Furthermore, it explores how these relations are impacted by the student-teacher relationship. Questionnaire data were collected from 1062 Year 11 students from Northern England. Multi-level structural equation model indicated that the frequency of teachers' efficacy appeal communications was not predictive of students' engagement. However, response efficacy was found to predict students' persistence in academic work ($\beta = .29$) and their task management ($\beta = .28$), and students' perceived self-efficacy predicted planning behaviours ($\beta = .40$) and persistence ($\beta = .24$). These relations were not moderated by perceived student-teacher relationship. Results indicate an appraisal-based model of efficacy appeals; suggesting that teachers not only need to educate students on how to prepare for their exams, but also need to emphasise why strategies are useful and support students in feeling competent in undertaking these skills.

Paper 2

Presenting Author:

Laura Nicholson

Co-Author:

Dave Putwain

Title:

The predictive effects of fear appeal evaluation and achievement emotions on student engagement

Abstract:

Fear appeals are persuasive teacher messages that highlight the negative consequences of failing a high-stakes test. Student evaluations of fear appeals differentially relate to motivational variables and achievement. The current aim was to investigate how a challenge and threat evaluation of fear appeals about an upcoming high-stakes test predict four test-related emotions and behavioural engagement in secondary school students. Additionally, the mediational role of achievement emotions was examined. The control-value theory of achievement emotions (CVT; Pekrun, 2006) proposes that enjoyment and hope will positively predict engagement, hopelessness will be a negative predictor and anxiety can have variable effects. Participants were 1,488 students (52.5% female, aged 14-16 years) in the final two years of compulsory education in England. They completed questionnaires at three time points over two years. Structural equation modelling showed that challenge evaluation positively predicted enjoyment, hope and engagement, negatively predicted hopelessness and did not predict anxiety. Threat evaluation positively predicted anxiety and hopelessness, and negatively predicted enjoyment, hope and engagement. Enjoyment and anxiety positively predicted engagement, while hope and hopelessness did not. Enjoyment partially mediated the relationship between challenge and engagement. Anxiety partially mediated the relationship between threat and engagement. The propositions of CVT were supported. The positive predictive effects of anxiety on engagement may reflect the increased effort that anxious students put in to avoid failure. The role of anxiety as a mediator between fear appeal evaluations and outcomes should be investigated further using various measures of motivation, engagement and achievement.

Paper 3

Presenting Author:

Olivia Metzner

Co-Authors:

Wendy Symes**Yindong Wang****Yizhen Huang****Lena Keller****Rebecca Lazarides**

Title:

Relations of pre-service teachers' self-efficacy and their use of motivational messages

Abstract:

Teachers' self-efficacy is a central factor for effective teaching (Burić & Kim, 2020; Lazarides & Schiefele, 2024). Theoretical work on self-efficacy of teachers posits that teachers' self-efficacy affects their teaching-related goal setting, effort, persistence and verbal and nonverbal behaviours in class (Tschannen-Moran et al., 1998). Although prior work has shown that teachers' verbal motivational cues affect students' motivation (Falcon et al., 2023; Putwain et al., 2016), it remains unclear how teachers' self-efficacy relates to the use of motivational messages in class. This study explored the relation between pre-service teachers' self-efficacy for student engagement and frequency of motivational message use. We used data from 122 pre-service teachers who taught a video-recorded lesson in a secondary school during a semester. The AI-based software DaVinci Resolve Studio was used to transcribe the videos. A new coding scheme based on the 'Teachers' Motivational Behaviors' classification system (Ahmadi et al., 2023) was developed to classify teachers' motivational messages as autonomy, competence and relatedness supportive or thwarting. Two experts annotated 25 percent of the initial subset of messages with an inter-rater-reliability of $\kappa=.72$. An open-source large language model annotated the remaining transcripts. Initial results (N=47) suggest that pre-service teachers' self-efficacy for student engagement is positively associated with the use of relatedness supportive messages. The results suggest that teacher education programs might wish to consider the use of strategies that increase pre-service teachers' self-efficacy for student engagement.

Paper 4

Presenting Author:

Samuel Falcon

Co-Author:

Jaime Leon

Title:

AI-assisted methodology for the analysis of teachers' speech: The case of engaging messages

Abstract:

In current educational research, understanding teachers' verbal behaviours is of great interest, as they have been found to significantly influence student outcomes. This study delves into teachers' engaging messages (TEM), which combines principles from Message Framing Theory and Self-Determination Theory. Traditional research on TEM has depended on students' perceptions, but recent approaches include direct observations from class audio recordings. Extracting messages from audios, however, proved to be costly in terms of time and resources. Addressing this challenge, this work introduces a new methodology for analysing these recordings, enhancing our ability to study the specific messages teachers use to engage students. By fine-tuning a Large Language Model with TEM collected over several academic years, we were able to create a well-performing system capable of extracting messages directly from audio transcripts of teachers' lessons. This method facilitates the examination of larger data sets and paves the way for expanding our understanding of how direct observations of these messages relate to key variables such as student performance and motivation. Finally, the methodology provides an opportunity to analyse observational data of other teachers' verbal behaviours from audio-recorded lessons.

8

Symposium

Organiser:

Anna Hawrot

Chair:

Alyssa Lauren Grecu

Discussant:

Francisco Peixoto

Title:

Students' emotions across educational stages: Developmental trends and antecedents

Abstract:

In modern societies, education plays a crucial role in shaping individual life trajectories and the overall performance of society. Among the key factors that affect academic success are the emotions that students experience in school and learning-related situations. Therefore, understanding the dynamics of student emotions and the factors that drive their development is essential for fostering achievement.

To this end, the proposed symposium explores the world of student emotions, traversing educational stages and spanning countries. Adopting a longitudinal approach, it investigates the development of student emotions as well as the individual and contextual factors that shape them. It also considers various demographic and age groups to identify both general patterns and group-specific trends. Overall, the symposium provides an overview of the dynamic nature of student emotions across educational stages.

Each presentation delves into a specific stage of education, exploring the intricacies of student emotions within that context. The first presentation discusses the changes in school enjoyment between Grades 3 and 6 in Polish primary school students with a focus on intersecting gender and SES disparities. The second one investigates changes in control and value appraisals as potential drivers of the development of learning enjoyment between Grades 5 and 9 in German students. The third talk delves into the development and predictors of enjoyment and boredom among vocational students in Switzerland. The fourth presentation explores whether the quality of social relationships can explain changes in enjoyment, fear, and anger in pre-service teachers over the course of an internship.

Paper 1

Presenting Author:

Alyssa Laureen Grecu

Co-Author:

Anna Hawrot

Title:

School enjoyment and intersecting disparities: A longitudinal study in Polish primary schools

Abstract:

This study examined the development of school enjoyment among Polish primary school students with a focus on potential intersecting gender and SES disparities in the trajectories. To this end, it used data of 6649 students collected between 2012 and 2015 when students attended Grades 3, 5, and 6. The analyses, which involved unconditional and conditional latent curve-of-factors growth curve models, revealed a linear decline in school enjoyment over time ($-0.60 SD$). Gender and SES (but not the gender x SES interaction) were associated with a lower intercept. Male students reported lower levels of enjoyment compared to their female counterparts ($0.58 SD$). Low-SES students reported higher enjoyment than their high-SES peers, although the difference was very small ($0.08 SD$ between students at 20th and 80th percentile of SES). Neither gender nor SES predicted the slope. The study documents a decline in enjoyment, which is in line with other studies on the topic. Moreover, it shows that the additive effects of gender and SES adequately describe group-specific changes in school enjoyment. It underscores the necessity for tailored support, particularly directed towards boys.

Paper 2

Presenting Author:

Anna Hawrot

Title:

The development and antecedents of learning enjoyment: A four-wave study in German secondary schools

Abstract:

Background. The control-value theory of achievement emotions postulates that it is possible to affect achievement emotions by decreasing or increasing control and value appraisals. This implies that changes in the latter should result in changes in the former. However, the assumption has rarely been tested.

Aims. This study aimed at verifying whether changes in control and value appraisals—two proximal antecedents of achievement emotions—predicted changes in learning enjoyment over the course of lower secondary school. Moreover, since studying changes requires knowledge of their overall pattern, it also investigated the developmental trajectories of the three student characteristics.

Sample. The study used longitudinal data of 5125 German students gathered between Grades 5 and 9, four measurement occasions in total.

Methods. The hypotheses were tested using univariate and multivariate latent change score models.

Results. The analyses revealed decreases in control and value appraisals and learning enjoyment between Grades 5 and 9. Moreover, the decreases in control and value appraisals predicted the decreases in learning enjoyment.

Conclusions. The study, by providing longitudinal evidence on the decrease in the three constructs under investigation, corroborates the inimical trend observed in past research. Moreover, it provides support for the change-change assumption, which is one of under-researched elements of the control-value theory of achievement emotions. As such, it suggests that alleviating the decrease in control and value appraisals may mitigate the decrease in learning enjoyment.

Paper 3

Presenting Author:

Tanja Held

Co-Author:

Mathias Mejih

Title:

Exploring the influence of control and value appraisals on the emotions of vocational students

Abstract:

Achievement emotions are crucial to the overall learning process and have a significant impact on academic achievement. According to the Control-Value Theory (CVT), control and value appraisals are the proximal antecedents of achievement emotions. However, it is crucial to note that control and value appraisals not only have independent effects but also a joint effect on emotions. Nonetheless, the majority of studies have solely focused on the independent effects of control and value appraisals, neglecting the interaction effect. Thus, the present study aims to investigate the interaction mechanism underlying the links between perceived control and value as antecedents of vocational students' enjoyment and boredom. Latent interaction models of 159 students in the first year of vocational education showed that perceived control and value positively predicted enjoyment, and perceived value negatively predicted boredom. In addition, there is a significant interaction of perceived control and value on enjoyment. A simple slope analysis indicates that students' perceived control exerts a stronger predictive effect on enjoyment when perceived value is low. These results are in line with CVT and emphasize the joint function of control and value on enjoyment for at-risk students (low control and/or value) in vocational education.

Paper 4

Presenting Author:

Gerda Hagenauer

Co-Authors:

Diana Raufelder**Mishela Ivanova****Andreas Bach****Doris Ittner**

Title:

The quality of social relationships and their role in the development of student teachers' emotions

Abstract:

The emotions and the emotional wellbeing of individuals are largely dependent on the quality of their social relationships, as acknowledged by self-determination theory and the belongingness hypothesis. While the significance of high-quality relationships for teachers has received increasing attention in empirical research, little is known about the impact of social relationships on student teachers' emotions in the school practicum in initial teacher education, especially from a quantitative perspective and considering multiple relationship qualities simultaneously. Research on this topic is highly topical as emotions have been found to be important drivers both for professional behaviour in the classroom and professionalisation processes in general. Against this backdrop, our study examined how the quality of social relationships between students in class, mentor teachers, and fellow student teachers explains the development of emotions of student teachers in a school practicum. We conducted an online survey with 203 Austrian student teachers studying secondary education, inquiring about their emotions (joy, anger, anxiety) and social relationships before and after their practicum. Latent change modelling was conducted. The results revealed that the quality of relationships with students in class was the most influential factor explaining changes in student teachers' emotions during their practicum. More concretely, if the relationships with the students in class were experienced positively, an increase in student teachers' enjoyment and a decrease in student teachers' anger and anxiety could be observed. These findings emphasise the importance of cultivating positive relationships with students in the classroom during the school practicum to support positive emotions.

9

Symposium

Organiser:

Katariina Nuutila

Chair:

Luke Fryer

Discussant:

K. Ann Renninger

Title:

Investigating the role of perceived task difficulty in motivation and performance

Abstract:

This symposium focuses on the role of perceived task difficulty in university students' motivation and performance. The four papers addressing this issue apply various contexts, time spans, and theoretical and analytical approaches, thus providing a multifaceted perspective on this unexplored motivational factor. In Paper 1, the relationships between perceived task difficulty and self-efficacy across mathematics tasks were examined, the findings demonstrating negative reciprocal relationships between perceived difficulty and self-efficacy. Paper 2 focused on a similar context in two sub-studies but investigated the predictions between perceived difficulty and situational interest, and their effects on continued interest. Findings showed negative predictions between interest and perceived difficulty, and these to contribute to continued interest. Study 3, in turn, explored how prior knowledge moderates the influence of instructional support on perceived difficulty, competence perceptions, and performance in an HTML course, the results demonstrating the person-task interaction to influence the task experience and performance. Finally, Paper 4 approached the theme of this symposium through the exploration of goal setting, emotions, and performance in two different contexts (i.e., short math tasks and a 40 day study period). These findings showed positive emotions to predict setting more difficult goals, and negative emotions (indicating that the gap between chosen goals and performance is larger) to sometimes boost performance, these effects being context-dependent. Overall, these papers capture many of the complexities of the interplay between task difficulty, motivation, and performance, and demonstrate person and task characteristics to influence these dynamics.

Paper 1

Presenting Author:

Alex Shum

Co-Author:

Luke Fryer

Title:

Task difficulty, self-efficacy, and interest interplay in a higher education mathematics course

Abstract:

Perceived difficulty in tasks can play an instrumental role in self-efficacy and interest. In particular, mastery experiences, where individuals overcome challenging obstacles is a key contributor to self-efficacy. However, neither tasks that are too easy nor too difficult are likely to support the development of self-efficacy. Similarly, situational interest has been found to negatively associate with perceived task difficulty. Much research has focused on the motivation experienced during standalone tasks. In formal education, examining these motivations from a wider lens provides insight on their change over longer contexts. Therefore, the current study aimed to investigate how students' perceived difficulty across mathematics tasks interacted with their self-efficacy in the course, and individual interest over initial higher education experiences. Participants ($n=261$) completed a prior knowledge measure, four course-level self-efficacy measures, four individual interest in mathematics measures, three tasks (quizzes) along with respective task difficulty measures across an entry-level undergraduate mathematics course. Fully-forward latent-variable structural equation modelling was employed. Initial self-efficacy predicted perceived task difficulty in the first two quizzes ($=-.33$, $=-.24$), while these respectively each predicted the next measure of self-efficacy ($=-.11$, $=-.16$). Perceived difficulty in the first quiz predicted end-of-term interest ($=-.12$). Negative connections between perceived task difficulty with self-efficacy and interest were most evident toward the beginning of the course. Connections between task difficulty and individual interest were not as salient compared to those found with situational interest in previous research. Theoretical and practical implications are discussed.

Paper 2

Presenting Author:

Luke Fryer

Co-Author:

Alex Shum

Title:

Reciprocally connecting task difficulty and situational interest: Micro-analytic study + replication

Abstract:

How do task experiences support proximal and longer-term desires to reengage? Central to this question is the interplay between perceptions of task difficulty and the situational interest. This interplay is increasingly researched but not yet well understood. Two studies aimed to extend our understanding of the interplay between readiness (prior knowledge and individual interest), a sequence of mathematics task experiences (situational interest and perceived difficulty) and reengagement beyond the set tasks (i.e., optional follow-up engagement). Participants (ages=20-49; Study-1 $n=301$; Study-2 $n=450$) in two separate, serial studies completed the same series of math tasks online, self-reporting their task experiences after each task. In both studies, participants were offered an optional opportunity to follow-up with the task content as a measure of their continued interest. Study-1: Both readiness components assessed were important predictors of future situational interest (positive) and perceptions of task difficulty (negative). Persistent interconnections between the task experience components across time supported past evidence regarding the important role of situational interest and challenges of perceived difficulty for sustained engagement. Modelling (Study-1) indicated that task success ($\beta=.36$), situational interest ($\beta=.16$) and perceptions of task difficulty ($\beta=.21$) can converge on choices to reengage with an object going forward. Study-2 has been conducted but not yet fully analysed.

Paper 3

Presenting Author:

Sascha Schneider

Title:

How prior knowledge moderates the effect of adaptivity on perceived difficulty and performance

Abstract:

According to the expertise-reversal effect, learners with lower prior knowledge (novices) benefit more from instructional support in learning materials than learners with higher prior knowledge (intermediates or experts). For example, instructional support strategies such as including worked examples, retrieval practice, or advanced organizers (i.e., possibilities of instructional support) are more beneficial for novices. A one-factorial, between-subjects design with two different learning materials (with vs. without instructional support) tested whether learners' prior knowledge moderates the effect of adapting learning materials on learning HTML programming to their assumed prior knowledge. Subjective ratings (perceived difficulty, learning-irrelevant load, and judgments of learning) and learning outcomes were measured as dependent variables. Results show that the condition with learning material with instructional support led to higher estimates of learning but no differences in perceived difficulty, perceived irrelevant load, and learning outcomes compared to those with learning materials without instructional support. However, when looking at the moderation potential of measured prior knowledge, results revealed that learning materials with instructional support were only efficient if learners' prior knowledge was lower. In contrast, a higher prior knowledge led to an advantage of materials without instructional support. Moreover, there are levels of prior knowledge scores where none of the materials led to an advantage. Results can be explained by differences in perceived difficulty and irrelevant load. This study shows a complex relationship exists between perceived difficulty, instructional support, and prior knowledge and questions the efficacy of adaptivity.

Paper 4

Presenting Author:

Wy Ming Lin

Co-Authors:

Lily FitzGibbon**Maria Theobald****Jasmin Breitwieser****Garvin Brod****Kou Murayama****Michiko Sakaki**

Title:

Applying computational modeling to ascertain the role of emotions in goal setting and performance

Abstract:

In self-regulated learning (SRL), students often set goals and adjust how they subsequently perform on tasks. In addition, emotions have been considered to play a key role in this process, yet the findings on their exact effects on goal setting and performance have been inconsistent. To reconcile the conflicting findings in the literature, we employ computational modeling to investigate the interactions between goals, performance, and emotions to ascertain the exact nature of emotions in SRL. We developed and applied our model to data collected from an online math task (Study 1). Results from Study 1 showed that emotions influenced both goal setting and performance. Specifically, goals were set higher with positive emotions and lower with negative emotions. Furthermore, performance was lower with positive emotions and higher with negative emotions, which is consistent with the predictions from control theory. We next applied the same model to real-life learning data from medical students studying for a high-stakes exam (Study 2). Contrary to Study 1, performance was *higher* with positive emotions and *lower* with negative emotions in Study 2. There were no effects of emotions on goal setting in Study 2. These results suggest that the effects of emotions on goals and performance depend on context. Our work also highlights the value of computational modeling to analyze complex dynamic data in education research.

10

Symposium

Organiser:

Hanna Jarvenoja

Toni Rogat

Tiina Törmänen

Chair:

Tiina Törmänen

Discussant:

Helen Patrick

Title:

Motivational and emotional conditions for learning: Interplay between individual, group, and context

Abstract:

This symposium emphasizes the key role of the motivational and emotional conditions and interaction processes in shaping (situational) learners' motivation and engagement in collaborative learning and classroom contexts. It aims to bring together studies that approach the dynamic interplay between individual learners, group interactions, and the broader social context from different perspectives, sharing an emphasis on the role of motivation and emotions. By shifting the focus from solely the individual to the interplay between the individual learners in social interaction and context, the four presentations will give a broad view on studies that specifically target social conditions and processes that result in shifts in learners' motivation.

Exploring socioemotional challenges in collaborative learning, the first presentation reveals insights into contextual factors influencing students' behaviors and provides implications for adaptive support. The second presentation continues to focus on socioemotional interactions and their impact on collaborative presence. Presentations 3 and 4 shift the perspective towards motivation in collaborative learning processes. The third presentation examines situational motivation and socially shared regulation of learning, while the fourth presentation investigates the influence of social and collaborative structures on students' motivation. Through the four varying perspectives, this symposium aims to enhance our understanding of the multifaceted nature of social aspects for individual motivation. How these presentations together contribute to a comprehensive understanding of socio-emotional and motivational aspects within collaborative learning contexts is further considered in the discussion.

Paper 1

Presenting Author:

Nikki Lobczowski

Co-Authors:

Shasha Li**Meiting Chen****Xiaoshan Huang****Jie Gao****Hongwei Xie**

Title:

Exploring socioemotional tendencies to situate individuals within groups

Abstract:

University students are often required to engage in collaborative learning but can struggle to interact with their peers. Importantly, socioemotional challenges can derail group productivity and are important to understand and intervene upon. To adaptively support students as they face socioemotional challenges, educators need a better understanding of the contextual factors that influence students' behaviors in collaborative situations. Thus, we set out to develop an assessment to measure the individual factors that impact socioemotional interactions that occur in collaborative learning. For this, we reviewed the literature to create open-ended situation-specific items about various socioemotional challenges, used crowdsourcing to create responses to each item, and employed cognitive interviews and think-alouds to validate the questionnaire and understand the students' response selection processes. In this study, we will detail the second phase in which we collected, coded, and categorized participants' responses to 59 open-ended questions that we created and used in Prolific. Using the Formation and Regulation of Emotions in Collaborative Learning theory, we coded participants' responses to common issues stemming from task, non-task, and social situations in university-level project-based learning environments to determine patterns in socioemotional tendencies. We found that even when participants responded similarly, there were important differences in how they described their contextual factors, appraisals, emotional responses, and strategy implementation, providing key insight into how they interact in social situations and why. These findings have implications for understanding students' socioemotional tendencies as a means to better interpret how they interact in social interactions and provide adaptive support during collaborative learning.

Paper 2

Presenting Author:

Piia Naykki

Co-Authors:

Auli Lehtinen

Title:

Experiencing and expressing socioemotional and cognitive presence in online teacher education

Abstract:

The aim of this study is to explore how pre-service teachers (PSTs) experience socioemotional interactions, presence, and motivational aspects in online teacher education, and how they express socioemotional and cognitive presence in an online teacher education course in Zoom breakout rooms. Interview and video data were collected during an online teacher education course. Participants (N = 14) were pre-service secondary teachers working in multidisciplinary small groups. Interview data was analysed using reflexive thematic analysis and video data was analysed by using content and interaction analysis. The results showed that PSTs valued active contributing, use of web-cameras, and a cohesive atmosphere in online teacher education. However, PSTs experienced a threshold that hindered collaboration and interaction. Presence was seen as being active by talking, listening, having a web-camera on, and being aware. We also found that PSTs held a normative conception of teacher students being talkative, and being shy and silent was considered negatively. Regarding the video analysis, we found that cognitive presence manifested mostly on surface level of sharing and comparing information; however, we also found more evidence of complex negotiation of meaning than in most previous studies from asynchronous environments. Socioemotional presence was mostly expressed through active listening (nodding and back-channelling) and humour. The threshold was manifested in how little PSTs explicitly encouraged each other's participation. In the presentation, we will more closely focus on the meaningful learning moments, involving negotiations of meaning and metacognitive statements and their interplay with socio-emotional presence.

Paper 3

Presenting Author:

Hanna Jarvenoja

Co-Authors:

Tiina Törmänen**Marjo Turunen****Emma Lehtoaho****Jasmiina Suoraniemi**

Title:

How success expectancies and socially shared regulation shape students' collaborative learning

Abstract:

Collaborative processes for learning are beneficial but are not always met. This study takes a novel perspective on collaborative learning processes by exploring students' situational motivation as both a condition and product of collaboration, and in relation to socially shared regulation of learning (SSRL). Students' motivational conditions involve different beliefs, of which expectancy for success, as presented in the situated expectancy-value theory, was the focus of this study. The aim of this study was to understand how SSRL, specifically monitoring and controlling activities, and students' expectancies for success are interrelated during collaborative learning and set the stage for group learning progress.

Forty-eight eighth graders engaged in a four-phase collaborative science task in small groups. Video recordings captured the groups' SSRL, and each group member completed situational self-reports at different task phases. Employing multi-channel sequence mining and clustering with mixture hidden Markov models, the study identified two types of SSRL sequences: engaged in SSRL and occasional cognitive SSRL. The analysis revealed unique characteristics of SSRL sequences, emphasising the critical role of motivation and emotion regulation in students' situational motivational beliefs. Expectancies for success emerged as a motivational condition and product of SSRL that correlated with task performance. It is concluded that social relationships and interactions within collaborative group can advance students' situational motivation, highlighting the importance of social reinforcing strategies within the group to consolidate feelings of success.

Paper 4

Presenting Author:

Toni Rogat

Co-Author:

Karlyn Adams-Wiggins

Title:

Students' views on social-contextual features of inquiry supporting motivation in the middle grades

Abstract:

Science reform recommendations promote the implementation of inquiry curriculum, shift students' role to one of active knowledge co-creator, and involve designing collaboration-intensive learning environments. However, motivation research has paid limited attention to how motivation functions beyond individual task structures. This study aims to characterize students' perceptions of the features within inquiry curricular contexts which inform their motivation, with a particular interest in students' experiences of social and collaborative contextual conditions. Interviews were conducted with 43 seventh graders from the classrooms of three science teachers who enacted inquiry and previously participated in professional development focused on encouraging engagement in scientific disciplinary practices. Results indicated that students identified inquiry and argumentation practices as fostering their agency and found that experiences with science content and phenomena, and the authentic unit context fostered relevance, interest, and curiosity. Students also recognized social conditions as playing a central role in their motivation for science, identifying collaboration via group work, argumentation, and learning community membership as sources. Findings have implications for extending the study of motivation to be inclusive of social and collaborative structures, with the potential to enrich our primarily individually oriented theoretical frameworks.

11

Symposium

Chair:

Rebecca Lazarides**Markus Dresel**

Discussant:

Maarten Tim Mainhard

Title:

Process-oriented approaches in research on teachers' motivation and emotion

Abstract:

Teacher motivation and emotion are central for the quality of instruction and for learning processes. Open questions concern the situation-specificity of teacher motivation and emotion, and the processes that underlie their relations with teaching behaviours. Against the background of different theoretical approaches (conceptualizations of engagement, control-value theory, achievement goal, social-cognitive theories), this symposium brings together four studies from international groups (Finland, Germany and Austria), investigating the situatedness of teacher motivations and emotions (Studies 1 & 2) and the processes explaining effects of teachers' motivations on instruction (Studies 3 & 4) and student outcomes (Study 4).

Paper 1 reveals that Finish teachers' situational work engagement significantly related to observed quality of teacher-student interaction and students observed behavioral engagement.

Paper 2 shows that Austrian team teachers' situation-specific positive affect positively related to vigour, dedication and absorption. Situation-specific negative affect negatively related to absorption and dedication. Negative affect on the individual teacher level was negatively related to dedication.

Paper 3 indicated that German teachers' personal performance goals affected teachers' student-oriented performance goals, which positively affected class-level individualization and autonomy support, ultimately leading to higher mastery goal structure.

Paper 4 uses data of the German TALIS video study and reveals that teacher self-efficacy positively affects teachers' nonverbal immediacy [NVI], assessed using an AI-based computer vision approach. NVI related to student-rated class-level teacher enthusiasm, which positively related to class-level student interest.

Our expert discussant (Netherlands) will draw out recommendations for further research, policy and practice.

Paper 1

Presenting Author:

Sanni Pöysä

Co-Authors:

Kati Vasalampi**Joona Muotka****Marja-Kristiina Lerkkanen**

Title:

Teachers' situational work engagement and teacher-student interaction at the same lesson

Abstract:

The present study aims to expand our understanding of teachers' lesson-specific situational work engagement and its association to observed teacher-student interaction and student engagement. The participants were 84 subject teachers and approximately 1000 Grade 9 students from Finnish lower secondary schools. Total of 282 lessons were videorecorded, and based on the recordings the quality of teacher-student interaction was assessed with Classroom Assessment Scoring System – Secondary observational tool. Teachers rated their situational work engagement at the end of each videorecorded lessons. The data were analyzed with two-level hierarchical analyses. Substantial variation was found with respect to studied variables both within and between teachers. In addition, the results showed that teachers situational work engagement in terms of situational emotional engagement was positively related to the observed quality of teacher-student interaction and students observed behavioral engagement at the same lesson. In turn, teachers situational work engagement in terms of situational disaffection was negatively related to the observed quality of teacher-student interaction and students observed behavioral engagement at the same lesson. The present study is among the first to utilize process-oriented approaches to examine teachers' state-like work engagement. The findings provide new insights on associations between teachers' situational work engagement, teacher-student interaction, and student engagement at the same lesson.

Paper 2

Presenting Author:

Franziska Muehlbacher

Co-Authors:

Mathias Mejuh**Melanie M. Keller****Gerda Hagenauer**

Title:

Team teachers' daily positive and negative affect, emotion regulation, and daily work engagement

Abstract:

Teacher collaboration is gaining importance because of its potential to foster teacher motivation and emotional relief. An intense form thereof is team teaching, which includes frequent interactions between two subject teachers in the classroom. During these interactions, team teachers experience positive and negative emotions, which can be resources or present challenges during the team-taught lesson. Team teachers can express or suppress these emotions, depending on the underlying emotion display rules. In accordance with appraisal-theoretical frameworks on teacher emotions, the teachers' daily emotions may be related to an important teaching resource, namely their daily work engagement. This study aims to investigate the antecedents (habitual emotion regulation) and consequences (daily work engagement) of team teachers' daily positive and negative emotions as indicated by positive and negative affect triggered by the team partner in the classroom. In Austrian low-track, lower secondary schools, team teaching is a compulsory teaching practice. Forty-seven team teachers participated in a diary study, consisting of a pre-survey and 15 diary entries, measuring teachers' habitual emotion expression and suppression, daily positive and negative affect, and daily work engagement. Multilevel regression analyses show that the habitual use of authentic display of positive emotions is positively associated with daily positive affect, and teachers' daily positive and negative affect significantly relates to their daily work engagement both on the within- and between-level. This study underscores the important role that team teachers' emotions play regarding their work engagement. Considering their situatedness, we draw implications for the role of emotions during team-teaching practices.

Paper 3

Presenting Author:

Martin Daumiller

Co-Authors:

Hanna Gaspard**Oliver Dickhaeuser****Markus Dresel**

Title:

Which processes link teacher goals and efficacy to teaching behavior? A goal-setting perspective

Abstract:

We analyzed cognitive processes linking teacher motivation to instructional behaviors, extending the theoretical model by Daumiller et al. (2022) through an integration of intended classroom goal structures, an inclusion of self-efficacy and additional goals as predictors and a consideration of multiple, individual teaching practices. Drawing on data from 84 secondary school teachers in Germany and their intended classroom goal structures and teaching behaviors reported in a total of 345 lesson dairies, this research studies the effects of teachers' personal goals and self-efficacy beliefs on ten specific teaching behaviors encompassing both mastery- (i.e., interestingness, cognitive stimulation, individualization, autonomy support, structuring, collaboration, heterogeneous grouping) as well as performance-based aspects (i.e., public negative feedback, homogeneous grouping, competition). Through two-level path modeling, we found that teachers' personal performance goals positively related to student-oriented performance goals, with student-oriented mastery goals being predicted by teachers' self-efficacy. Further, intended mastery goal structures in the classroom were influenced by both student-oriented mastery goals and teachers' personal and efficacy goals, highlighting the complex interplay of cognitive factors in teaching behaviors. The findings underscore the significance of considering both student-oriented goals and intended goal structures in understanding the nexus between teacher motivation and instructional practices. We contribute to the literature on teacher motivation by providing a nuanced understanding of the cognitive mechanisms underpinning teaching behaviors, suggesting that future investigations should delve deeper into these processes and consider additional mechanisms and sets of teaching behaviors to fully elucidate the dynamics of teacher motivation and its impact on educational outcomes.

Paper 4

Presenting Author:

Rebecca Lazarides

Co-Authors:

Jonas Frenkel**Uros Petkovic****Olaf Hellwich**

Title:

Teacher self-efficacy, nonverbal immediacy and student interest: A computational modelling approach

Abstract:

Teacher motivation is highly relevant for effective instruction and thus, for student academic learning. However, the processes that explain how teacher motivation transmits to student motivation are far from clear. This study examines whether teachers' self-efficacy in student engagement (T1) relates to teachers' instructional behaviours (T3), more concretely, to student-perceived displayed enthusiasm of the teacher during teaching, through teachers' situation-specific nonverbal immediacy (T2). We further investigated whether the student-rated teachers' enthusiasm (T3) then related to students' interest (T3, T4). We used data of the German TALIS video study which included 50 teachers (46% women; ageM = 43 years) and their 1140 students (53% girls; ageM = 15 years) in grades 9 and 10. Applying an AI-based computational approach, we assessed teachers' nonverbal behaviours in class using methods of computer vision. Combining computational models of teachers' nonverbal behaviours with student and teachers' questionnaire data in a longitudinal multilevel path model, findings showed that teachers' self-efficacy related to teachers' nonverbal behaviours in class, which in turn related to student-rated teacher enthusiasm, which then related to student interest. Our findings emphasize the usefulness of new assessment methods when aiming to detect situational teaching behaviours and motivational processes in concrete teaching situations.

12

Symposium

Organiser:

Lennia Matos

Chair:

Moti Benita

Discussant:

Guy Roth

Title:

Agentic engagement, prosocial behavior and need crafting as manifestations of proactivity and agency

Abstract:

While educational research has traditionally focused on how social contexts can nurture students' wellbeing, resilience, and motivation, it is equally important to recognize that students themselves possess the power to direct their own functioning and exert control over their lives, thereby exercising agency. Despite its importance, the role of agency has not received as much attention as the social context.

Within the realm of education, proactivity and agency are crucial elements that shape student engagement and learning outcomes. Their manifestations include agentic engagement, prosocial behavior, and need crafting. Agentic engagement sees individuals actively engaging with their environment, initiating change, and proactively influencing their circumstances to effect positive transformations, particularly within classroom settings. Proactivity is also evident in prosocial behavior, where students engage in altruistic acts that benefit others, such as peers and teachers. Moreover, the concept of need crafting emphasizes the proactive endeavors of individuals to tailor their environment to their fundamental psychological needs.

Comprehending these expressions of proactivity and agency is vital for educators aiming to foster a supportive atmosphere conducive to students' optimal functioning. By actively shaping their surroundings to align with their personal needs and aspirations, individuals not only enhance their sense of agency but also achieve greater fulfillment and engagement. This symposium brings together studies that contribute to the understanding of individuals' psychological growth, showcasing pivotal research on agentic engagement (Reeve et al. & Matos et al.), prosocial behavior (Benita & Benish-Weisman), and need crafting (van den Bogaard et al.).

Paper 1

Presenting Author:

Moti Benita

Co-Author:

Maya Benish-Weisman

Title:

Reciprocal relationships between autonomy support and students' prosocial values and behaviors

Abstract:

Education systems consistently strive to foster students' prosocial behaviors and values, as these are essential facets of their moral and character development. Educators are universally acknowledged as pivotal in molding children's moral compass and character evolution. However, teacher-student relationships are reciprocal by nature. The present study aimed to explore reciprocal relationships between students' perceptions of teacher autonomy support and students' prosocial values and behaviors. Participants were 651 Israeli fifth-grade students across 30 classrooms, and their homeroom teachers. Students and teachers responded to questionnaires on two occasions, spaced six months apart. The questionnaires aimed to assess students' prosocial values and their perceptions of their teachers' autonomy-supporting practices. The teachers rated their students' prosocial conduct. Multilevel cross-lagged panel analysis revealed that within-classroom perceived autonomy support offered by teachers and students' prosocial inclinations (comprising both prosocial behavior and values) had a bidirectional relationship. The study underscores the role of students as active agents who wield substantial influence over their educational milieu. Furthermore, it points to the manifold advantages of autonomy support in fostering enduring prosocial tendencies, implicitly suggesting the pivotal role of teachers' autonomy support in the multifaceted terrain of students' prosocial development.

Paper 2

Presenting Author:

Johnmarshall Reeve

Co-Authors:

Hye-Ryen Jang**Dangling Huang**

Title:

Agentic engagement: Reciprocal effects with autonomy-supportive but not controlling teaching

Abstract:

Our research question asked whether students can influence their teachers' motivating styles. In our hypothesized reciprocal effects model, we predicted that students' agentic engagement would longitudinally increase autonomy-supportive teaching (Hypothesis 1) and decrease teacher control (Hypothesis 2), autonomy-supportive teaching would longitudinally increase agentic engagement (Hypothesis 3), and controlling teaching would longitudinally decrease agentic engagement (Hypothesis 4). Participants were 92 certified Korean teachers (38% female) and their 2,263 students (51% female) in grades 7-12. We collected survey data across four time waves over the course of a 10-month academic year. We assessed agentic engagement with the Agentic Engagement Scale, autonomy-supportive teaching with the Learning Climate Questionnaire, and controlling teaching with the Controlling Teacher Questionnaire. A multilevel random intercept cross-lagged panel analysis (RI-CLPM) confirmed H1 and H3 but not H2 and H4. Overall, based on the present findings and follow-up research seeking to answer this same research question, we conclude that students do influence the motivating style teachers offer to them, as agency pulls for greater autonomy supportive teaching while students' misconduct (but not their low agentic engagement) pulls for greater controlling teaching.

Paper 3

Presenting Author:

Lennia Matos

Co-Authors:

Moti Benita**Rafael Gargurevich**

Title:

The role of students' agentic engagement in shaping the classroom's mastery goals structure

Abstract:

Engaging students in academic activities brings educational benefits. Achievement Goal Theory argues that teachers promoting mastery-goals may lead to students' engagement. Also, Self-determination Theory argues that teachers perceived by their students as autonomy-supportive when promoting these goals, may develop behavioral and agentic engagement in comparison to teachers with a perceived controlling style. Research also showed that agentic engaged students may promote teachers' autonomy-supportive style during instruction, but more research is needed to understand the teacher-student influences in the classroom. This longitudinal research hypothesized that students' agentic engagement (rated by the teachers, Time 1), would predict teachers' promotion of mastery-goals and autonomy-supportive teaching (perceived by the students) and would diminish controlling teaching (Time 2). We also wanted to study if behavioral engagement predicts the outcomes beyond the effect of agentic engagement. A total of 396 high school Peruvian students from one school in Lima completed measures of their teachers' motivating styles (autonomy-support/controlling) and of their teachers promoting mastery-goals, while their teachers reported the students' agentic and behavioral engagement at the third (T1) and eight (T2) months of the academic year. Structural equation modeling was used for the analyses. Results showed that students' agentic engagement (T1) predicted longitudinal increases in behavioral engagement, teachers' promotion of mastery-goals and autonomy-supportive teaching (T2). Unexpectedly, students' agentic engagement (T1) also predicted longitudinally increases in controlling teaching (T2). Students' behavioral engagement (T1) predicted longitudinal increases in agentic engagement, and predicted longitudinally decreases in controlling teaching (T2). Results show the importance of students' engagement in shaping teachers' behaviors.

Paper 4

Presenting Author:

Daphne van den Bogaard

Co-Authors:

Bart Soenens**Katijn Brenning****Berdien Vrijders****Lowie Bradt****Patrick Luyten****Valerie Vanhees****Maarten Vansteenkiste**

Title:

Testing LifeCraft for students: A need crafting intervention to enhance well-being and resilience

Abstract:

Research within the Self-Determination framework convincingly showed that satisfaction of the basic psychological needs (i.e., need for autonomy, relatedness and, competence) is associated with mental health benefits and resilience. Recently, scholars shifted attention from how the environment supports individuals' basic needs to the pro-active role that individuals themselves can play. The current study builds on initial research on need crafting by testing the effectiveness of online intervention program LifeCraft among college students in comparison with both a passive and an active control condition. LifeCraft fostered greater need satisfaction and associated improved mental health, with especially highly engaged participants reaping the benefits of the program and individuals' desire to get their needs met play a minimal moderating role. In comparison with an active control condition, LifeCraft did not produce superior effects, presumably because participants in the active control group, albeit unconsciously, also invested in competence crafting. Further, the present study is the first to demonstrate that LifeCraft helps students in better handling a stressful exam period one month after program completion, testifying to the resilience-enhancing effect of LifeCraft. These findings offer new insights into the way students can proactively steer their own functioning to be better protected against the stressors of college life.

13

Symposium

Organiser:

Claudia C. Sutter

Chair:

Claudia C. Sutter

Discussant:

Gerda Hagenauer

Title:

Situational nature of motivation and emotion in education

Abstract:

Motivation and emotion are dynamic and situation-specific, rooted in time and context. However, much research has examined these constructs in isolation from the situations within which they are shaped and neglected their malleability to the context. Exploring the impact of situational and contextual factors on variability in motivation and emotion is crucial for understanding the interactions between individual students and their contexts. The symposium "Situational Nature of Motivation and Emotion in Education" aims to center the situational nature motivation and emotions within specific contexts. The symposium comprises four papers, each offering a unique perspective, highlighting the role of the situation in shaping students' motivation and emotions.

Paper 1 examines between- and within-person variability in expectancies, task values, and cost within the context of introductory statistics, exploring its association with performance across different student groups. Paper 2 examines whether situational carryover and spillover effects between students' situation-specific expectancies and task values depend on the similarity and difficulty of the math content students are asked to work on. Paper 3 examines between-person heterogeneity in within-person correlation networks, using experience sampling method (ESM) data collected in one university lecture. Finally, paper 4 explores the dynamic patterns of medical students' motivation and emotions during exam preparation by analyzing within-person feedback loops between expectancy-value appraisals, self-efficacy, and achievement emotion.

Thus, this symposium serves as a catalyst for advancing our knowledge on motivation and emotion as momentary processes in a given context by providing a more fine-grained picture of short-term dynamics of students' motivation and emotions.

Paper 1

Presenting Author:

Claudia C. Sutter

Co-Authors:

Delaram Totonchi**Jamie Decoster****Kenn Barron****Chris Hulleman**

Title:

Between- and within-student variation in expectancy-value beliefs in introductory statistics

Abstract:

Students' motivational beliefs are dynamic and situation-specific. In other words, they are situated in time and context (Pekrun & Marsh, 2022). Although situational approaches have gained momentum among education researchers in recent years (Eccles & Wigfield, 2020), limited empirical research has examined the degree to which individual (between-student, e.g., who students are) versus situational levels (within-student, i.e., the situations students are in) contribute to students' overall motivational experience. We measured achievement motivation (expectancy, value, and cost) 10 times over a 10-week introductory statistics course ($N = 219$) to examine individual (*between-student*) differences and situational (*within-student*) variability. We are particularly interested in the *within-student* sources of variability as they are typically overlooked and remain less examined in educational research. First, our findings revealed that most motivational beliefs varied both as a function of between- and within-student sources: Expectancy, utility value, and cost demonstrated individual (*between-student*) and situational (*within-student*) variability of comparable size, while intrinsic value had higher individual (*between-student*) variability. Second, individual (*between-person*) differences and situational (*within-student*) variability in expectancy and value predicted variability in performance. Lastly, the relation of situational (*within-student*) variability in expectancy and utility value with performance was stronger for Black, Latinx, and other racially marginalized students than for students from non-racially marginalized backgrounds. Our findings provide empirical evidence for the situational nature of motivation and have implications for practitioners, course curriculum designers, and policymakers who aim to create more supportive and motivation-enhancing environments, particularly for statistics courses and students from racially marginalized and underserved backgrounds.

Paper 2

Presenting Author:

Daria Katharina Benden

Co-Author:

Fani Laueremann

Title:

Do expectancy-value beliefs spill over from situation to situation? The role of situation similarity

Abstract:

Students' motivational beliefs are key predictors of their engagement and persistence in math-intensive domains such as science, technology, engineering, and mathematics (STEM). Recent expectancy-value research has highlighted the importance of students' *situation-specific* motivations for later academic success (e.g., expectancies and values reported in specific lessons or achievement situations). However, our understanding of how situation-specific expectancy-value beliefs generalize across situations and thus develop the potential to shape longer term educational outcomes is very limited. New methods have been developed to disentangle the effects of within- versus between-person developmental processes across situations, but the evidence is mixed. Some studies show expectancy-value beliefs to be relatively self-contained within a given situation, whereas others find significant carryover (autoregressive) and/or spillover (cross-lagged) motivational effects across situations. Building on Eccles' situated expectancy-value theory, this study examined whether situational carryover/spillover effects between students' situation-specific expectancies and task values depend on the similarity and difficulty of the math content students work on in different situations. Using data from postsecondary students who took a statewide math test for STEM majors ($N=1,379$), multigroup random-intercept cross-lagged panel models indicated that the similarity and the level of task difficulty across situations played a significant role in shaping situation-specific versus generalizable effects. Motivational carryover effects were stronger when the content was not only similar across situations but also challenging. Similarly, positive motivational spillover effects between students' situation-specific self-concept and intrinsic value emerged only across challenging situations with similar content. Working on challenging rather than basic content unfolds greater motivational power across situations.

Paper 3

Presenting Author:

Belinda Berweger

Co-Authors:

Jasmin Breitwieser**Baerbel Kracke****Garvin Brod****Julia Dietrich**

Title:

Stable or fluctuating? Affective-motivational dynamics of medical students during exam preparation

Abstract:

To prepare for an exam over an extended period, students must maintain their motivation and deal with their emotions in an adaptive way. Both the situated expectancy-value theory (SEVT) and the control-value theory (CVT) propose that expectancies and values are central to predicting motivation and emotions, and vice versa. This study analyzed within-person feedback loops between SEVT's expectancy-value appraisals, self-efficacy, and CVT's achievement emotions (enjoyment, pride, anxiety, anger, boredom). In addition, we measured the stability and changes in students' expectancy-value motivation and emotions during four distinct learning phases. Over a 40-day period, participants were observed using a digital learning platform to prepare for the exam and reported daily appraisals and emotions. The sample consisted of $N = 340$ medical students (71 % female; $M_{Age} = 26$) and 9,581 learning situations. To test our models, we used Dynamic Structural Equation Modeling in Mplus (DSEM). We found cyclical and dynamic patterns of medical students' motivation and emotions during exam preparation. Specifically, we identified positive and negative feedback loops that occurred within and between days. Furthermore, we observed positive auto-regressive effects and moment-to-moment changes in intensity (i.e., rMSSD scores) across all learning phases. These findings give insight into students' feedback processes and potential upward or downward spirals of motivation over time. Understanding the dynamics of time series processes can help identify individuals who may struggle with motivation and emotion regulation during learning and provide them with personalized and timely support.

Paper 4

Presenting Author:

Julia Moeller

Co-Authors:

Michael Grimmer**Thuy Nguyen Thu****Miriam Jähne****Julia Dietrich****The Many Moments Consortium****Jessica Baars**

Title:

Idiographic within-person correlation networks of SEVT facets and academic emotions

Abstract:

Recently, research on motivation has increasingly started to focus on situated determinants of and fluctuations in achievement motivation, most prominently in the renaming of the expectancy-value theory into the situated expectancy-value theory (SEVT; Eccles & Wigfield, 2020). A recent framework model has proposed to integrate research on SEVT experiences with research on situated academic emotions in the tradition of Pekrun's (2006) control-value theory (Moeller et al., 2022). Moeller and colleagues' (2022) DYNAMICS framework proposes to study heterogeneity between individuals with regard to their within-person patterns of SEVT experiences and situated academic emotions. The present study examines such between-person heterogeneity in within-person correlation networks, using experience sampling method (ESM) data from 37 university students (1,020 ESM surveys) collected in one university lecture. In line with recent debates about the heterogeneity revolution and generalizability crisis, we found substantial heterogeneity between individuals with regard to their intra-individual associations among SEVT experiences and situated emotions. While describing heterogeneity is important, the scope of differences between idiographic patterns also raises the question how such widespread individual differences can be validly generalized. We propose different methods of bottom-up generalization to quantify how often each pattern was observed. In sum, our findings suggest that situated measures of SEVT facets and academic emotions show bi- and multimodal uni-, bi-, and multivariate distributions within and across individuals. This implies that the frequently used statistics, such as mean scores, standard deviations, and linear multilevel correlations and regressions, may not describe the patterns of SEVT and academic emotions well.