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### Social-emotional skills of teachers

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# Social–emotional skills of teachers: Mapping the content space and defining taxonomy requirements

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Many studies acknowledge the importance of social–emotional skills<sup>1</sup> (SEMS) to function in contemporary society. Understanding these skills and how these develop presents several conceptual and methodological challenges, with emerging consensus on what kind of skills should be fostered in education. Less work, however, has considered SEMS specifically for teachers, despite the fact that they are presumed to be the primary agents to affect SEMS of students. The current article examines different conceptualizations of teacher SEMS and provides a first attempt at defining and structuring this broad conceptual space. We further propose a conceptual teacher SEMS framework that may serve as a basis of an empirical one to guide future educational research and policy-making.

## KEYWORDS

social–emotional skills, 21st century skills, teacher training, teacher personality, teaching quality, taxonomy

1 Throughout the manuscript the abbreviation ‘SEMS’ will be used to refer to “social–emotional skills.”

## Introduction

During the past two decades, much attention has been directed towards the development of so-called 21st century skills in education, i.e., social–emotional skills (SEMS) that facilitate learning at school and prepare students for the challenges, both personally and professionally, of the 21st century (OECD, 2015). Contemporary education policies increasingly conceive SEMS as both means and end-points of education, alongside traditional learning outcomes (e.g., performance on math, language, or science). The SEMS field in education has been rapidly developing, with emerging consensus on how to structure and assess these skills in students (Duckworth and Yeager, 2015; Abrahams et al., 2019). There is further convincing meta-analytic evidence that SEMS can be developed at school using tailored programs (Durlak et al., 2011; Sklad et al., 2012; Taylor et al., 2017), but also incorporated in the course of regular classroom activities administered by the teacher.

This important and encouraging evidence led to a shift in attention from ‘SEMS of students’ to ‘SEMS of teachers’ and how they impact student development in multiple areas. This shift resulted in a new set of intriguing questions, including: (a) ‘Which SEMS are important for teachers (i.e., what are essential *constructs*)?’; and (b) ‘How do we best conceptualize these constructs and build a teacher SEMS *taxonomy*?’ Relying on insights from taxonomic work in the field of personality, the present paper will focus on these two questions, bridging various research traditions on teacher characteristics and skills for fostering (21st century) learning in students. Following the definitions of [Torraco \(2005\)](#) and [Callahan \(2010\)](#) the current paper is presented as an integrative literature review. However, it is noteworthy that the manuscript does not constitute a systematic and exhaustive review of the voluminous teacher skills literature, but instead, intends to define the field, explore its comprehensiveness and contours, and provide a rationale and guiding principles for the construction of a comprehensive teacher SEMS taxonomy.

## The importance of teacher SEMS in education

Teachers are pivotal figures in students’ learning. This observation has been supported by findings in educational research from the past two decades, summarized in several meta-analyses describing associations between teacher characteristics (e.g., being enthusiastic, self-confident, well-prepared, etc.) and student learning ([Hattie, 2009](#); [Schneider and Preckel, 2017](#); [Stronge, 2018](#)). [Hattie \(2009\)](#), for instance, convincingly demonstrated that teachers account for 30% of the variance in student academic achievement, with 50% attributed to student factors and 5–10% to peer influences. Recently, however, there has been increasing interest in teachers’ ability to effectively manage the social–emotional demands of students and their impact on students’ academic and social–emotional outcomes.

## Teacher SEMS are important for students

Empirical evidence supports the purported role of teachers in the learning equation ([Hattie, 2003](#)), and points to teacher effectiveness, defined as the aggregated effects of a complex set of in-classroom teacher behaviours on student performance and learning ([Seidel and Shavelson, 2007](#)), as an important construct for optimizing learning processes. Noticeably, most examinations of teacher effects have primarily focused on cognitive and content-based student outcomes ([Goe et al., 2008](#)). Longitudinal evidence on the beneficial effects of teachers on various life outcomes in adulthood necessitates a more holistic approach for examining teacher effects on students. A large proportion of teacher effects on students might be better explained by their influence on student skills that most standardized tests fail to capture, such as students’ social–emotional learning ([Heckman et al., 2013](#); [Blazar and Kraft, 2017](#)). For instance, [Kraft’s \(2019\)](#) results indicated that teachers impact both student performance on complex cognitive tasks in math, reading, and their social–emotional competencies. Furthermore, there was significant variability between teachers in their effects on different student outcomes in addition to a positive yet weak association between teacher effects across different outcome measures, pointing to the multidimensionality of effective

teaching. Another illustrative meta-analysis by [Cornelius-White \(2007\)](#) examined the relation between teacher–student relationships and cognitive and social–emotional outcomes in students (e.g., motivation, disruptive behaviour, self-esteem, etc.). This research demonstrated strong links between teachers’ individual characteristics such as self-awareness, social awareness, empathy and warmth, particularly for affective and behavioural ( $r = 0.35$ ) student outcomes.

## Teacher SEMS are important for teachers

Another cause for the attention shift towards teacher SEMS is an increased focus on (mental) well-being of teachers and its precursors, given the alarmingly high attrition rates among teachers worldwide ([Darling-Hammond, 2001](#); [Changying, 2007](#); [Hong, 2012](#); [Dicke et al., 2015](#)) and difficulties to attract individuals to teacher training programs and the teaching profession. Teacher stress can have detrimental effects not only on teachers’ (mental) health and job satisfaction ([Collie et al., 2012](#)) but also on student and classroom variables, such as poorer classroom quality or lower levels of student achievement ([Burke et al., 1996](#); [Hoglund et al., 2015](#); [McLean and Connor, 2015](#)). Empirical evidence demonstrates that both individual (e.g., self-efficacy, [Tschannen-Moran and Woolfolk Hoy, 2001](#)) and broader contextual factors related to the school or community (e.g., increased workload, lack of control over their work, stress from interpersonal professional relations), and/or the classroom context (e.g., student misbehaviour and lack of motivation), affect teachers’ job-satisfaction, enthusiasm, effectiveness, and well-being ([Klassen and Chiu, 2011](#); [Kunter et al., 2011](#); [Chang, 2013](#)). For instance, managing student misbehaviour may drain the personal resources of teachers and may cause them to feel helpless, unappreciated, frustrated, or angry ([Chang and Davis, 2009](#)). Accumulation of such negative feelings and a lack of resources to cope with these feelings may subsequently lead teachers to become stressed or burned out. In this regard, SEMS of teachers are important personal resources for managing job-related challenges and may help to buffer against feelings of stress ([Montgomery and Rupp, 2005](#)), (emotional) exhaustion ([Aldrup et al., 2017](#); [Schmidt et al., 2017](#)), and/or burnout ([Collie and Perry, 2019](#)).

Together, these findings depict teachers as important role models for students, who should be mindful of their actions, feelings, and thoughts. More attention to teachers’ SEMS in the early stages of teacher education and training may not only be critical in achieving SEMS development in students but may also be essential in fostering teachers’ sense of competence and well-being, securing their employability in the long run.

## How teacher SEMS shape student learning

Although consensus exists regarding the importance of teacher SEMS, less is known about the pathways through which these SEMS affect student learning. This may occur *via* different mechanisms ([Jennings and Greenberg, 2009](#)), including both *formal* and *informal* teaching characteristics and practices. First, teachers need to know how to explicitly teach social and emotional skills to their students requiring specific knowledge and skills to instruct and coach their students effectively. This implies that this kind of knowledge and skills

has to be enclosed in the teacher-training curriculum. The implementation of *formal* instructions targeting students' SEMS may be directly dependent on teachers' instructional and SEMS competencies (Jones and Bouffard, 2012). Secondly, student SEMS may also be developed through *informal* learning processes, such as teachers demonstrating SEMS mastery in their daily interactions and work with students. Demonstrating appropriate social-emotional behaviour to students (i.e., 'practice what you preach') may help improve students' SEMS learning through the process of modeling the behaviours expected from students. In this regard, Kim et al. (2018) describe 'contagion', i.e., the idea that humans 'catch' psychological states of those with whom they interact, as an important process taking place in the student-teacher interaction. Emotional contagion refers to the 'tendency to automatically mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person and, consequently, to converge emotionally' (Hatfield et al., 1994, p. 5), drawing direct links between teachers' psychological and affective states and student and classroom outcomes (e.g., Millie and Warner, 2011; Oberle and Schonert-Reichl, 2016). In other words, teachers' social-emotional competence plays a significant role in creating a positive learning environment for students through exhibiting social-emotional skills in their way of teaching (e.g., instructional practices and classroom management), but also by fostering their own (emotional) well-being, in turn affecting students' psychological states and learning.

## Overcoming conceptual challenges: Towards a common language to talk about teacher SEMS

There has been a broad interest from different fields, such as education, psychology, pedagogy and labor economics into constructs that are associated with the SEMS of teachers. Despite this interest, no clear consensus exists regarding the definition of teacher SEMS and the core skill constructs this domain should encompass. This conceptual confusion has resulted in numerous proposals of 'constructs of importance' to understand teacher SEMS, which may in fact refer to the same or overlapping conceptual space (Duckworth and Yeager, 2015). In the following section, we propose a definition of teacher SEMS to guide the search and selection of constructs to be included in a comprehensive teacher SEMS taxonomy. Once this content is defined, we can think about how to construct a teacher SEMS taxonomy that can form the basis to design an assessment tool and study teachers' development of these skills.

Defining teacher SEMS based on a particular conceptual model may cause confusion about the construct itself given the differences in terms of approach, level of abstraction, and the level of detail at which these models specify particular skills. Again, this variability in models does not necessarily reflect fundamental contradictions but more often points to differences in theoretical perspectives advocated by various SEMS' model developers. An alternative approach to avoid such confusion may be to adopt a more pragmatic broad-level definition, cutting across various perspectives.

Fairly recently, John and De Fruyt (2015) took a similar approach in their work on building a taxonomy to look at student SEMS. Relying on input from educational experts and policymakers from OECD

countries, they formulated a broad definition that was able to capture a large variety of SEMS concepts in students, which may also serve as a basis for describing SEMS important for teachers. They define SEMS in students as follows: 'individual characteristics that (a) originate in the reciprocal *interaction* between biological predispositions and environmental factors, (b) are manifested in consistent *patterns* of thoughts, feelings, and behaviours, and (c) that can be *developed* through formal and informal learning experiences' (see, John and De Fruyt, 2015, p. 4). Based on the social roles and requirements for teachers, this definition can be amended as follows: '(d) are acquired and developed in *pre-service* and *in-service* training, (e) *directly* and *indirectly* facilitate and stimulate (SEMS) learning in students, and show (f) corresponsive relationships with *contextual factors* (i.e., parents, colleagues, educational professionals and society)'.

These amendments intend to capture aspects specific to the teaching profession, but also give the definition the necessary scope to impact theory, research, and professional practice in education. The first amendment on the applicability to both *pre-* and *in-service* teacher training programs [element d] was made to consider the complex needs and nature of the teaching profession in our fast-changing society, requiring proficient support and training resources for teachers at different stages of their career (i.e., 'continuous professional development'; European Commission, 2013). Secondly, the definition should encompass skills and mechanisms that *directly*, but also *indirectly* affect student learning [element e], to include factors that affect teachers' implementation of particular practices, such as motivational factors and personal characteristics (European Commission, 2013; Blömeke et al., 2015). For instance, Blazar and Kraft (2017) results demonstrated that 'emotional support' provided by the teacher was directly associated with students' self-efficacy in math and happiness in class, while Kunter et al. (2013) found that the relation between teachers' self-regulation skills and student performance was mediated by teaching quality (e.g., learning support). Finally, the multifaceted nature of teaching demands teachers to interact with education actors at different levels, beyond the individual student [element f] (European Commission, 2013), requiring skills facilitating their interaction with colleagues, administrative staff, pedagogical counselors, parents, and other societal stakeholders. Noticeably, although creating strong family-school partnerships is a central part of teachers' assignments, most teachers feel insufficiently prepared in this area (Thompson et al., 2018). The definition should thus not only capture those SEMS necessary for facilitating and achieving *student learning* but should also address those important for teachers' *broader professional functioning*.

## Identifying core social-emotional skills of teachers

Over the past decades, efforts throughout the field of teacher education have identified skill constructs associated with social-emotional aspects of teaching, that in light of perennial challenges, include a mix of older and relatively new concepts, considered pivotal to help students and teachers thrive in the 21st century. Based on the

proposed definition, the following section discusses various constructs related to teacher SEMS emerging from the broad literature.<sup>2</sup>

## Teaching and instructional qualities

Education researchers have attempted to identify profession-specific teaching qualities beyond cognitive skills and subject-specific knowledge. Three general teaching quality domains recurrently emerge across large-scale (inter)national assessments: skills related to features of instruction, organization, and installing a supportive classroom climate (Hamre and Pianta, 2007; Lauermaun, 2017).

A first dimension refers to *cognitive activation* (i.e., alternatively labeled as *instructional support*; Hamre and Pianta, 2007), describing instructional practices that stimulate meaningful learning in students (Baumert et al., 2010). For example, the implementation of tasks that address cognitively stimulating problems, activating and extending on students' prior knowledge, ideas, and experiences, and providing appropriate questioning (Stigler and Hiebert, 2004; Klieme, 2006). To obtain cognitive activation, it is often challenging for teachers to align curricular demands for a particular course and the specific methods chosen to achieve those objectives in their students (i.e., instructional alignment; Attewell and Domina, 2008). The second-dimension *classroom management* refers to teachers' ability to effectively manage student behaviour, organize learning time, and exhibit an engaging teaching style to manage student attention (Emmer and Stough, 2001). This dimension is a robust predictor of student learning (Walberg and Paik, 2000; Emmer and Stough, 2001; Seidel and Shavelson, 2007). For instance, a meta-analysis by Korpershoek et al. (2016) showed that teacher-focused classroom management programs successfully affect students' social-emotional, behavioural, and academic outcomes. A final domain that can be delineated refers to teacher qualities associated with building a *supportive classroom climate*, focusing on the quality of interpersonal relationships in the class (i.e., teacher-student and student-student) and the degree to which the teacher is sensitive and shows concern for the perspective and needs of students (Hamre and Pianta, 2007). It is crucial that teachers are able to create a caring and supportive learning climate where interactions are

characterized by respect and support, that is tailored to the (emotional) needs of students (Baumert et al., 2010; Reyes et al., 2012).

As stated by Bourgonje and Tromp (2011) most of these models tend to define skills at a narrower level with often profound differences in the definition of the above-mentioned dimensions (e.g., Martin et al., 2016), categorization of these skills, and the number of dimensions. For instance, Wagner et al. (2013) distinguished between structure, classroom management, understandability, motivation, and student involvement. Their five-factor model of instructional qualities overlaps with the three previously discussed quality sets, though it showed equal measurement properties across students and classes for only two of the five domains (i.e., structure and classroom management), thereby limiting its generalizability. Another critique relates to the tendency to focus on more observable behaviours that directly impact students, often neglecting to account for variables underpinning these behaviours, such as motivational and personality-based characteristics (Kunter et al., 2013), which may prove particularly relevant to explaining differences between teachers.

## Teachers' personal characteristics

### Personality characteristics

Given the importance of individual teacher characteristics in explaining both student and teacher outcomes, educational researchers started to describe teachers' personality traits (Klassen and Tze, 2014; Sautelle et al., 2015) using the Five-Factor Model (FFM). The FFM distinguishes among five broad personality domains, i.e., Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (McCrae and Costa, 1987).

Studies examining the association between teacher personality and teacher effectiveness, measured through student academic achievement, have found mixed results. Klassen and Tze (2014) conducted a meta-analysis examining the relationship between teachers' personality and self-efficacy beliefs with teachers' effectiveness, measured by observer-ratings of teacher performance and the academic achievement of students. Their results showed a small effect for both teachers' personality and self-efficacy on students' achievement ( $d = 0.21$ ). When considering teachers' individual characteristics separately, teachers' personality had only a small effect on teacher effectiveness ( $r = 0.08$ ). One may argue, however, that teachers' personality may show differential associations with particular student outcomes, such as social-emotional skill development. Kim et al. (2018), for example, did not find that teachers' personality predicted students' academic achievement directly, but rather the degree to which students felt support from their teachers and how they perceived their own academic capability (i.e., students' self-efficacy). Specifically, they found that teachers' Conscientiousness was more strongly related to students' academic support, while teachers' Agreeableness was mostly associated with students' personal support, that is, students' beliefs that teachers care for them as individuals. Teacher Neuroticism was negatively related to the student's self-efficacy. Kim et al. (2018) concluded that teachers' personality traits seem to be more relevant to explain students' emotional outcomes rather

<sup>2</sup> We did not scrutinize the literature systematically like for a meta-analysis or scoping review relying on an exhaustive set of keywords and limiting search in time, because multiple terms are used to refer to teacher SEMS, and the topic is referred to in numerous published and unpublished studies and surveys from a broad range of journals and academic fields. Instead, we tried to get a comprehensive account of the teacher SEMS' field by starting from a set of recent studies covering the subject, and then broadening in content and perspectives (education, personality psychology, policy perspectives, etc.). On top, we used the keywords "teacher characteristics," "socioemotional competence of teachers," "personality of teachers," "teacher effectiveness," "21st-century skills of teachers," "self-efficacy of teachers" searching scientific papers, dissertations, reports, and white papers in Brazilian (BVS, LILACS e Scielo, Pepsic, DeCS Descritores em Ciências da Saúde) and international (PsycINFO, Web of Science, ERIC, Google scholar, Proquest) databases. This resulted in 119 documents, with 49 papers finally retained as relevant for further review. We further explored OECD documents on the topic and consulted Occupational Network (O\*NET).

than academic ones, suggesting that teachers' personality may 'play an influential role in students' social-emotional development' (Kim et al., 2018, p. 320).

While much of the previously described work examined domain-level traits, an alternative approach is to investigate associations at the lower-order facet level (e.g., impulsiveness or vulnerability for the domain of Neuroticism [Costa and McCrae, 1980]), which is considered to be more prone to change and have stronger predictive validity for specific outcomes (MacCann et al., 2009; Soto et al., 2011). The personality domain of Neuroticism, for example, includes several facets related to the ability to effectively deal with stress and negative emotions, such as anxiety or depression, but also impulse and anger-control, self-consciousness or vulnerability. It has been noted that the ability to adequately regulate one's emotions is required for teachers' professional functioning and effectiveness but also for their own subjective sense of efficacy and psychological well-being (Sutton, 2004; Hülshager and Schewe, 2011; Chang, 2013; Yin et al., 2016; Lavy and Eshet, 2018) and that of their students (Sutton and Wheatley, 2003; Uitto et al., 2015). Emotion regulation is the voluntary modification of the experience or expression of emotions (Gross, 1998) and is considered a core part of SEMS (OECD, 2015). Beyond facilitating the formation of healthy and effective relationships with students, these skills may also affect academic success (Jennings and Greenberg, 2009).

Rooted in the field of labor economics, The Occupational Information Network (O\*NET; Peterson et al., 2001) provides detailed descriptions of more specific skills, knowledge, and work styles required for vocational titles in the US labor market, based on expert and job-incumbent evaluations. The work styles outlined in this database are considered as the job-related equivalent of personality and emphasize a complex mixture of SEMS important for teachers, as raters found all 16 work styles<sup>3</sup> distinguished in O\*NET important. For instance, they emphasized the importance of teachers' sense of dependability/responsibility to fulfill professional obligations, which may refer both to providing high-quality teaching or educational services as well as achieving desirable and/or preventing undesirable student outcomes (Lauermann and Karabenick, 2013).

## Motivational characteristics: Self-efficacy and enthusiasm

Although motivational frameworks have introduced different constructs, the two that received most attention are teachers' sense of self-efficacy and teacher enthusiasm. Firstly, self-efficacy beliefs can be defined as a teachers' appraisal of their own ability to achieve desired outcomes in students (Bandura, 1977; see Tschannen-Moran and Woolfolk Hoy, 2001, for a review). These beliefs show strong links with job-related outcomes, such as teacher effectiveness (Midgley et al., 1989; Hattie, 2009; Klassen and Tze, 2014), commitment to teaching (Pfitzner-Eden, 2016), satisfaction,

burnout, job stress, and career fulfillment (Skaalvik and Skaalvik, 2007; Klassen and Chiu, 2011). Debate exists, however, regarding the precise level at which to define and assess self-efficacy. Some have emphasized the specificity of the construct concerning particular teaching skills and outcomes, leading to a different conceptualization and number of dimensions depending on the central study objective (Lauermann, 2017). Others have pointed to the existence of an underlying latent factor reflecting 'personal teaching efficacy' (i.e., related to teachers' own feeling of competence; Tschannen-Moran and Woolfolk Hoy, 2001; Skaalvik and Skaalvik, 2007), relevant across different teaching contexts (Klassen et al., 2010). Regardless of these conceptual and methodological differences, agreement exists on the importance of confidence of teachers about their teaching skills.

A second motivational construct that has shown robust relations to both teacher and student outcomes is teacher enthusiasm (Patrick et al., 2000; Kunter and Holzberger, 2014). Keller et al. (2016, p. 751) define teacher enthusiasm as 'the conjoined occurrence of positive affective experiences, that is, teaching-related enjoyment, and the behavioural expression of these experiences, that is (mostly nonverbal) behaviours of expressiveness'. This definition covers both affective, non-cognitive components, as well as aspects related to instructional aspects including verbal and nonverbal behaviour (Kunter et al., 2008). Again, research suggests different breakdowns of the enthusiasm construct, distinguishing, for example, experiencing enjoyment from expressive behaviour (Keller et al., 2016). Kunter and Holzberger (2014) argued that many existing labels (e.g., enjoyment, interest, autonomous motivation and enthusiasm) may, in fact, all refer to the same conceptual space, namely teachers' intrinsic motivation towards teaching.

## Humor

Several authors have pointed to the cognitive and psychological benefits of using humor in the classroom (see Jeder, 2015, for a review). For instance, it has been argued humor could serve various functions within the classroom, such as a pedagogical tool to ensure more attention on the material, build positive relationships with students, or to maintain order within the classroom (Van Praag et al., 2017). Recently, Bieg et al. (2017) examined the relation to different types of teacher humor (i.e., course-related or -unrelated, aggressive and self-disparaging) and student emotions. The results indicated that particularly course-related humor was associated with positive emotional experiences in class. Extending on this work, Bieg and Dresel (2018) examined the pathways in which humor influences student learning (enjoyment, intrinsic motivation, and elaboration). They found that relations between teachers' use of humor and student learning were mediated by teaching quality dimensions, with mostly positive associations for course-related humor and negative associations for course-unrelated and aggressive humor. Humor may not only benefit students, but as shown by Liao et al. (2020), primary teachers' use of more adaptive forms of humor was also positively linked to teachers' engagement in more adaptive emotion regulation strategies. Overall, these findings propose humor as a relevant personal characteristic that impacts teachers' performance and student outcomes (Bieg and Dresel, 2018).

<sup>3</sup> O\*NET associated the following working styles with the teaching profession: Achievement orientation (achievement/effort, initiative, persistence), interpersonal orientation (cooperation, concern for others, social orientation), conscientiousness (dependability, attention to detail, integrity), independence, practical intelligence (innovation, analytical thinking), social influence (leadership), adjustment (self-control, stress tolerance, adaptability/flexibility).

## 21st century skills

In light of societal shifts over the past decade, governments and educational institutions have formulated frameworks with a stronger emphasis on skills like creativity, critical thinking, inclusiveness, and cultivating a growth mindset, due to their value to succeed in today's society (National Institute of Education [NIE], 2009; American Association of Colleges of Teacher Education and the Partnership for 21st Century Skills, 2010; Schleicher, 2012; Australian Institute for Teaching and School Leadership [AITSL], 2015; Valtonen et al., 2015; Markowitz et al., 2016; Guerriero, 2017; Häkkinen et al., 2017; Schonert-Reichl et al., 2017).

For instance, Häkkinen et al. (2017, p. 15) recommended that pre-service teacher training programs focus more on developing collaborative problem solving (CPS; i.e., 'effective engagement in a process of solving a common challenge or problem with others, including the contribution and exchange of ideas, knowledge, or resources, and sharing understanding and effort required to achieve a shared goal'), and self- and strategic learning skills (SSRL; i.e., 'the construction and maintenance of interdependent or collectively shared regulatory processes, beliefs, and knowledge [e.g., strategies, monitoring, evaluation, goal setting, motivation, metacognitive decision making] orchestrated in the service of a co-constructed or shared outcome'), next to more content-specific ICT knowledge. Valtonen et al. (2015) observed that Finnish pre-service teachers perceived themselves as skilled learners in terms of learning strategies, including collaboration and teamwork, but generally considered themselves less knowledgeable of ICT.

Additionally, given the high degree of diversity in schools, it has been stressed that in order to ensure equal learning opportunities for all, teachers should be mindful of the various forms of diversity among their students, and adjust their practices accordingly (European Commission, 2017). UNESCO (2008, p. 3) defines inclusive education as 'an ongoing process aimed at offering quality education for all while respecting diversity and the different needs and abilities, characteristics and learning expectations of the students and communities, eliminating all forms of discrimination.' Approaching learning through the lens of students and providing a positive learning environment for all most likely traverses several of the earlier mentioned constructs. For instance, Khalifaoui et al. (2020) review found a positive classroom climate in diverse early childhood education to be related to several of the previously outlined teaching practices, such as increased instructional time, supportive interactions, child engagement, emotional support, and trusting relations between teacher and parents, in addition to more structural aspects like using culturally relevant materials.

## Mindsets

Finally, as argued by the National Institute of Education [NIE], (2009), teachers' beliefs concerning the inherent ability of their students to grow and learn (i.e., alternatively labeled as growth mindset; Dweck, 1999), should be included in a teacher SEMS taxonomy, as these beliefs have been linked to both students' and teachers' likelihood to be effortful and stay motivated in school affecting their teaching (Blackwell et al., 2007; Moser et al., 2011; Muenks et al., 2020). For instance, teachers that cherish high expectations for their students

adopted different classroom practices, benefitting all students in their classroom (Rubie-Davis et al., 2015). Similarly, Duckworth et al. (2009) demonstrated the value of an optimistic explanatory style of (pre-service) teachers in promoting academic gains in students over the course of the school year. Beyond affecting student learning, as argued by several researchers, these beliefs also affect the professional development (Dweck, 2014) and performance of teachers, such as their sense of self-efficacy and work engagement (Shim et al., 2013; Zheng et al., 2019). Though, the generalizability (e.g., Sisk et al., 2018) and value of growth mindsets beyond existing constructs, such as attribution style and locus of control, have been drawn into question. There is sufficient evidence, however, for the value of beliefs concerning how one relates to difficulties and/or failure in shaping the learning process (Dweck, 2010).

## Towards a unifying teacher SEMS taxonomy

### Taxonomic prerequisites

Similar to SEMS in students, considerable commonalities may exist among this huge variety of proposed teacher SEMS constructs (i.e., 'jingle-jangle' fallacy<sup>4</sup>; Abrahams et al., 2019). In light of our proposed teacher SEMS definition, a useful teacher SEMS taxonomy should fulfill several criteria.

First, a teacher SEMS taxonomy needs to be based on a *well-established empirical foundation*. The FFM has proven to be cross-culturally relevant for describing individual differences (John et al., 2008) and SEMS of students (OECD, 2021), and may hence also serve as a basis upon which to map SEMS of teachers working in various contexts and grades [element a of the definition]. Second, such a taxonomy should *comprehensively* describe SEMS differences in teachers [element b] in a balanced way, i.e., it has to represent the core dimensions underlying the different skills and constructs discussed earlier. This approach should reflect the multidimensional nature of effective teaching while resulting in a manageable set of skills that describes those SEMS important for teaching. Accordingly, the spectrum of skills reviewed in this paper is intentionally defined at a broader level. Such a supplementary strategy proves most appropriate, as it accommodates different approaches and traditions in an integrative way recognizing the many research efforts made so far enhancing adoption by professional practice (Kyllonen et al., 2014). Third, the taxonomy has to group constructs that are *malleable*, i.e., represent skills that show developmental patterns. This development could be normative (e.g., teachers getting on average more emotionally stable with increasing age), or through intentional or volitional change (Hudson and Fraley, 2015, 2016; Allan et al., 2018) [element c], either individually (e.g., individual learning and coaching) or group-based (in the context of pre- and in-service training programs [element d]). Skills in our taxonomy are assumed to be malleable and to improve over time, training sessions, and experience/tenure which is consistent

<sup>4</sup> Jingle-jangle fallacy is a conceptual multiplicity where different labels are used to refer to the same skill and skills that correlate only moderately are labeled alike across models.

with evidence from SEMs training programs in teachers (Dignath et al., 2008; Payton et al., 2008). A fourth and final requirement is that all skills included in the taxonomy should be *relevant* to what is happening in and/or outside of the classroom [element e] (i.e., can they *predict* student and/or teacher outcomes?). The taxonomy should only include those teacher characteristics that directly or indirectly affect student outcomes in school or contribute to a wider range of school-related variables (e.g., class climate, drop-out, or interactions with educational stakeholders [element f]). Investigation of the relations between teacher SEMs and particular outcomes and the degree to which a unified taxonomy is able to improve the prediction of these outcomes beyond existing models will be essential to be accepted by the educational community. The teacher SEMs taxonomy will thus have to prove its validity and utility in helping educational stakeholders to deal with contemporary challenges.

## Outlining the content space to be covered by a teacher SEMs taxonomy

Similar to conceptual and empirical work on SEMs of students (John and De Fruyt, 2015; Kankaraš, 2017; Chernyshenko et al., 2018) we draw upon the FFM dimensions to organize teacher SEMs constructs listed in the previous review. This framework was chosen as a starting point for classification for several reasons. First, it proved helpful to classify the large number of proposed SEMs for students, as most student SEMs constructs could be easily classified into this framework, and it is likely that this will also be the case for teacher SEMs. For instance, prosocial teaching skills focused on establishing trusting and respectful relationships with students are conceptually closely related to the personality dimensions of Extraversion and Agreeableness, referring to individual differences in frequency and quality of social interaction (Witt et al., 2002; Farkas, 2003). For other skills, this may be less straightforward, and these can either be tentatively classified in one of the five broad skill domains, or assigned to an additional sixth classification category ('miscellaneous'), when necessary. When constructs are, later on, operationalized by items, empirical research will ultimately clarify the underlying empirical structure of the skills. Humor, for example, is not easy to classify at face value in the FFM-based framework, though we tentatively classified it in the 'Engaging with others' domain (conceptually related to Extraversion), as most evidence stresses its social and motivational properties. Using the FFM as a classification model is primarily meant to serve as a starting point to group and manage the various skill terms reviewed in this document. This conceptual model (see Table 1 for an overview) should be replaced in the future by an empirically based one that should account for the overlap among this series of narrow skills and represent these in an empirically based model. The following 21 constructs were derived from the previous review: individual intellectual consideration, structuring skills, organizing skills, concern for others, emotional consideration/support, communicating skills/assertiveness, collaboration, trust, treating others with respect/integrity, connecting with others, self-efficacy, enthusiasm and drive, humor, maintaining composure/emotional control, dependability/responsibility, creativity, intellectual curiosity, self- and process-reflection, goal orientation, inclusiveness, and growth mindset.

The above-mentioned constructs were classified into the FFM-based framework as follows: The first skill domain '*Amity/Getting Along with Others*' covers constructs focusing primarily on the quality of social interactions, such as collaborating harmoniously with colleagues and parents, trusting others (i.e., belief others are well-intentioned), showing concern for others (i.e., regard for the perspective of students), as well as the degree to which a teacher is genuinely accepting of intercultural differences among students, and is responsive to these in all aspects of their teaching (i.e., intercultural inclusiveness). Furthermore, this domain includes skills that relate to a teacher's sense of integrity, which in the context of teaching may be understood as evoking respectful interactions with and among students, and treating all students in a fair and rightful way.

The second domain '*Engaging with Others*' refers to more quantitative aspects of social interactions, such as teachers' ability to easily connect and build relationships with students, be assertive, and clearly communicate subject matter and ideas to students and colleagues. This domain also encompasses skills related to teachers' sense of enthusiasm and drive (i.e., infusing the classroom with a passionate attitude), and exhibiting a humorous and engaging style.

Third, the domain of '*Emotion Regulation Skills*' relates to skills and practices that focus in particular on more emotional aspects of teaching and interactions. Encompassing teachers' ability to appropriately recognize, express, and regulate both their own (negative) emotions, and provide support to students in dealing with their emotions (i.e., emotional consideration/support). This domain also includes teachers' personal sense of self-efficacy and confidence in their work, as well as their kindness towards themselves as continuously evolving individuals that can grow, a perspective that they may also adopt for their students (i.e., growth mindset).

A fourth skill domain '*Self-Management*' groups the constructs that focus on teachers' ability to manage the classroom (i.e., organizing) and plan their work (i.e., structuring) in order to achieve learning objectives in line with curricular demands (i.e., goal orientation). This also includes a sense of dependability/responsibility to fulfill professional obligations.

A fifth and final domain, '*Keeping an Open Mind*' comprises skills such as a general sense of curiosity towards learning and the input of students, being creative in designing classroom materials and ways to transfer the subject matter to students, and flexibly align one's instructional approach to the intellectual needs of students (i.e., individual intellectual consideration/support). Finally, we also tentatively placed teachers' reflective skills to critically inquire their teaching practices (i.e., self- and process reflection), under this broad domain.

Again, it is likely there will be considerable empirical overlap between these skill sets. In its present form, however, some of these narrower skill dimensions (e.g., organizing and structuring skills) are treated as conceptually distinct, as this range of teacher SEMs constructs has never been considered simultaneously.

## Next, steps

The social-emotional skill constructs considered in the present work are not the result of a systematic and complete literature analysis. Hence, as a first next step we suggest a more extensive



TABLE 1 Overview table of the conceptual model and the studies included in the review.

Teacher SEMS construct	Alternative terms	Short reference	Objectives of the article/source	Participants and/or context
<b>Amity/getting along with others (Agreeableness)</b>				
Collaboration with others	Working in teams, providing professional advice to parents, collegial collaboration, Co-operation	<a href="#">Ainley and Carstens (2018)</a>	Report on the Teaching and Learning International Survey (TALIS) including a conceptual framework from the OECD, with Collegial collaboration as part of the school climate	
		O*NET	'Collaborating with other teaching professionals' and 'Work with team' are named as detailed working activities and context of a teacher	
Showing concern for others	Teacher empathy	<a href="#">Cornelius-White (2007)</a>	Review on teacher-student relationships and student outcomes	About 1,000 articles were included in the literature review
Trusting others	Believing others are well-intentioned	<a href="#">Primi et al. (2021)</a>	Empirical development of a social-emotional skill inventory for students.	N = 50,209 Brazilian students from grades 6 to 12 completed the full item set
Treating others with respect/integrity	Respect, fairness, classroom emotional climate	<a href="#">Cornelius-White (2007)</a>	Review on teacher-student relationships and student outcomes	About 1,000 articles were included in the literature review
		<a href="#">Milkie and Warner (2011)</a>	A study on the influence of classroom learning environment on children's emotional and behavioral problems.	Teacher and parent ratings of N = 10,700 children from the first grade
		<a href="#">Reyes et al. (2012)</a>	Study on the relationship between classroom emotional climate and academic achievement	The study included classroom observations, student reports, and report card grades of 1,399 students from grades five and six
Intercultural inclusiveness	Inclusive education, openness to diversity, teaching in inter-cultural classrooms	<a href="#">European Commission (2017)</a>	Inclusive education and equality is the first principle of the European Pillar of social rights	
		<a href="#">UNESCO (2008)</a>	Providing a definition of 'inclusive education'	
		<a href="#">Khalfaoui et al. (2020)</a>	Literature review on identifying aspects that foster a positive classroom climate in preschool contexts	14 articles concerning young children from minority backgrounds
<b>Engaging with others (Extraversion)</b>				
Connecting with others	Establishing and maintaining interpersonal relationships	<a href="#">Hamre and Pianta (2007)</a>	Chapter on the context for understanding children's learning opportunities, including teachers' (positive) relationships with students	
Communicating skills/assertiveness	Speaking/presenting, oral expression, courage	<a href="#">John and De Fruyt (2015)</a>	Conceptual framework of social and emotional skills among children and adolescents in which assertiveness is a skill under the broader domain of 'Engaging with others'	
		O*NET	Speaking is included as one of the 19 skills that are required for teachers, as well as Oral expression	
		<a href="#">Primi et al. (2017)</a>	Assertiveness and Courage are included in the framework of 21st century skills for children	
Enthusiasm and drive	Teacher motivation, energy	<a href="#">Keller et al. (2016)</a>	Review on the definition and assessment of the teacher enthusiasm construct	120 peer-reviewed journals in English since 1970

(Continued)

TABLE 1 (Continued)

Teacher SEMS construct	Alternative terms	Short reference	Objectives of the article/source	Participants and/or context
		<a href="#">Kunter et al. (2008)</a>	Study on how teacher enthusiasm is related to instructional quality	Mathematics teachers ( $N = 323$ ) and their 9th grade students
		<a href="#">Kunter et al. (2011)</a>	Study on the dimensionality and correlates of teacher enthusiasm	Three independent samples ( $N_1 = 205$ , $N_2 = 332$ , $N_3 = 113$ ) of various teachers and their students
		<a href="#">Kunter and Holzberger (2014)</a>	Book chapter on teachers' intrinsic orientations for teaching	
		<a href="#">Lauermann (2017)</a>	Overview of the literature on teacher motivation and its importance in professional competence and instructional behaviors of teacher	
		<a href="#">Patrick et al. (2000)</a>	Two studies on the influence of teacher enthusiasm on vitality and intrinsic motivation of students.	Study 1 consisted of a survey design with $N = 93$ college students. Study 2 included an experimental design with $N = 60$ college students.
Humor		<a href="#">Bieg et al. (2017)</a>	Two studies on how students' perceptions of teacher humor are related to achievement emotions.	In Study 1, $N = 985$ students from grades nine and ten answered a questionnaire, in Study 2, the sample included $N = 731$ students from grades five to nine
		<a href="#">Bieg and Dresel (2018)</a>	Conceptual teacher humor model and empirical investigation of humor types perceived by students associated with several instructional and student outcomes.	$N = 985$ secondary school students from 45 classrooms
		<a href="#">Jeder (2015)</a>	Conference paper on (un)ethical implications of using humor in the classroom	
		<a href="#">Van Praag et al. (2017)</a>	Ethnographic classroom observations on how humor is related to the student-teacher relationship	Field study in three secondary schools in Belgium between 2009 and 2011
<b>Emotion regulation skills (Emotional stability)</b>				
Maintaining composure/emotional control	Stress tolerance, emotional self-regulation, (negative) emotion regulation	<a href="#">Kunter et al. (2013)</a>	Research including teachers' self-regulation as element of their professional competence	German secondary school teachers ( $N = 181$ ) and their students ( $N = 4,353$ )
		<a href="#">Lavy and Eshet (2018)</a>	Diary study on teachers' emotions and emotion regulation strategies	Daily assessments of $N = 62$ teachers during 10 work days
		<a href="#">Primi et al. (2021)</a>	Empirical development of a social-emotional skill inventory for students	$N = 50,209$ Brazilian students from grades 6 to 12 completed the full skill inventory
		<a href="#">Sutton and Wheatley (2003)</a>	Review paper on the emotional aspects of teaching	
		<a href="#">Sutton (2004)</a>	Study on the goals and strategies of teachers' emotional regulation	$N = 30$ middle school teachers from the US answered a semi-structured interview
		<a href="#">Uitto et al. (2015)</a>	Review of articles on teachers and emotions, including teachers' regulation of emotions	70 articles on teacher emotion were found and nine were selected for further examination

(Continued)

TABLE 1 (Continued)

Teacher SEMS construct	Alternative terms	Short reference	Objectives of the article/source	Participants and/or context
Emotional consideration/support	Recognize and help regulate emotions in students	O*NET	Emotional support is part of the work activities of a teacher	
		OECD (2021)	Study on an international assessment of social and emotional skills of school-age children, through the Study on Social and Emotional Skills (SSES)	N = 3,000 students in each cohort (10 and 15 years)
Self-efficacy	Confidence in their work, self-awareness	Klassen and Chiu (2011)	Study on the influence of teachers' self-efficacy (together with job stress and contextual factors) on occupational commitment and quitting intention	Cross-sectional survey with N = 434 teachers in the field and N = 379 pre-service teachers
		Klassen et al. (2010)	Literature review on teacher self- (and collective) efficacy research from 1998 to 2009	218 empirical articles were selected for review and compared to research from the previous 12 years
		Midgley et al. (1989)	Study on the relationship between students' beliefs in mathematics and their teachers' sense of efficacy	N = 1,329 students and their mathematics teachers before (N = 95) and (N = 46) after transitioning to junior high school
		Pfzner-Eden (2016)	Study on self-efficacy of pre-service teachers and how it is related to their intention to quit	N = 438 beginning and N = 274 advanced pre-service German teachers
		Skaalvik and Skaalvik (2007)	Study on the development and psychometric evaluation of the Teacher Self-Efficacy Scale	N = 244 elementary and middle school teachers
		Tschannen-Moran and Woolfolk Hoy (2001)	Review and proposal of a new measure to capture teacher self-efficacy	In three samples of teachers (N <sub>1</sub> = 224, N <sub>2</sub> = 217, N <sub>3</sub> = 410) the reliability and validity of the proposed measure were evaluated
Growth mind-set	Mindset, implicit theories, teacher expectations, teacher beliefs of student abilities	Duckworth et al. (2009)	A study of the relationship between optimistic explanatory style and students' academic gains	Longitudinal study with N = 390 novice teachers from the US
		Dweck (2014)	Article on the experiences from a teacher's mindset and the struggles during the first year of teaching	Opinion paper of one teacher
		Moser et al. (2011)	Study on the influence of a growth mindset on neural mechanisms and post-error accuracy	N = 25 undergraduate students participated in the EEG study
		Muenks et al. (2020)	Study with two experimental and two field studies on professors' mindset beliefs and students' experiences and performance	Experimental design with N <sub>1</sub> = 252 and N <sub>2</sub> = 224 students being exposed to professors with manipulated mindset beliefs, together with a field study of N <sub>3</sub> = 291 and N <sub>4</sub> = 902 students
		Rubie-Davis et al. (2015)	Study examining high expectations of teachers and student outcomes	N = 2,408 elementary school students and their 84 teachers were part of either an intervention or control group
		Sisk et al. (2018)	Two meta-analysis studies investigating the relationship between mindset and academic achievement	Two meta-analyses of 273 and 43 studies

(Continued)

TABLE 1 (Continued)

Teacher SEMS construct	Alternative terms	Short reference	Objectives of the article/source	Participants and/or context
<b>Self-management (Conscientiousness)</b>				
Organizing skills	Organizing, planning, and prioritizing work	O*NET	Organizing, planning, and prioritizing work are named as one of the main work activities for teachers	
		<a href="#">Chernyshenko et al. (2018)</a>	Working paper for the OECD outlining a conceptual framework on social-emotional skills of students	
Structuring skills	Planning	<a href="#">John and De Fruyt (2015)</a>	Conceptual framework of social and emotional skills among children and adolescents	
Goal orientation	Achievement goals for teaching	<a href="#">Häkkinen et al. (2017)</a>	Pedagogical framework for 21st century skills in teacher education with Goal setting as part of collaborative problem solving	
		<a href="#">Lauermann (2017)</a>	Chapter on teacher motivation, including perspectives grounded in achievement goal theory	
		<a href="#">Shim et al. (2013)</a>	Survey study investigating the role of pre-service teachers' achievement goals for teaching	N = 263 pre-service teachers from three Finnish universities
Dependability/responsibility	Self-discipline	<a href="#">John and De Fruyt (2015)</a>	Conceptual framework of social and emotional skills in which Responsibility includes time management, punctuality, and honoring commitments	
		<a href="#">Lauermann and Karabenick (2013)</a>	Review article on teacher responsibility measures	
<b>Keeping an open mind (Openness to experience)</b>				
Intellectual curiosity	General sense of curiosity towards learning, critical thinking	<a href="#">John and De Fruyt (2015)</a>	Conceptual framework of social and emotional skills among children and adolescents, including Intellectual curiosity as one of the 26 proposed skills.	
Creativity	Creative imagination, innovation	O*NET	Innovation and Thinking creatively are named as one of the core skills of teachers	
		<a href="#">OECD (2021)</a>	SSES with Creativity included in the conceptual framework as part of the Open-mindedness domain	
Individual intellectual consideration/support	Adaptability, flexibility	O*NET	Adaptability/flexibility is one of the named requirements for the job of a teacher	
Self- and process-reflection	Teacher development, professional development	<a href="#">Ainley and Carstens (2018)</a>	Report on a conceptual framework of social and emotional skills from the OECD including teacher professional development	
		<a href="#">John and De Fruyt (2015)</a>	Report presenting a conceptual framework of social and emotional skills among school-aged children and adolescents, in which self-reflection is defined as an awareness of inner processes and subjective experiences, and the ability to reflect on such experiences	

Some of the references mentioned in this table were used for constructing more than one teacher social-emotional skill in our conceptual framework. For brevity and clarity, they were not listed repeatedly.

review of all the available and relevant literature to give more power to the conceptual model introduced in this research (see [Lozano-Peña et al., 2021, 2022](#), for very recent and excellent examples). The availability of a conceptual teacher SEMs taxonomy is an important step forward to get grip on the content domain that should be covered when talking about and investigating teacher SEMs. A teacher SEMs taxonomy should form the starting point to write a comprehensive set of teacher SEMs items that can be administered to both tenured and teachers-in-training to examine its underlying dimensional structure. Similar procedures like those adopted by [Primi et al. \(2017, 2021\)](#) for the construction of a SEMs taxonomy for students can be followed to analyze the multidimensional structure of such item set. The resulting dimensions will form the cornerstones of a new *empirical* teacher SEMs taxonomy, that has solved the jingle-jangle fallacy and accommodates the numerous more narrow perspectives on teacher skills and training.

The establishment of an empirical taxonomy will promote consensus on which SEMs are essential to be assessed, evaluated and developed in teachers. First, the taxonomy should serve as the starting point to develop a valid and actionable teacher SEMs assessment tool. For instance, this tool may help the individual teacher to identify strengths and developmental needs, but also provide feedback on how to increase one's SEMs mastery. Due to various assessment challenges ([Duckworth and Yeager, 2015](#); [Greiff and Kyllonen, 2016](#); [Abrahams et al., 2019](#)), such a tool will preferably use a 360-degree multi-informant approach including self-ratings and multiple observer-ratings (e.g., students, supervisors, directors, see [Pancorbo and De Fruyt, 2021](#)). Additionally, due to their sensitivity for response styles, such as acquiescence ([Primi et al., 2021](#)), faking, and bandwidth-fidelity problems ([Cronbach and Gleser, 1965](#)) additional methods of assessment, beyond the traditional self-report questionnaires using Likert ratings, should be considered (see [Abrahams et al., 2019](#), for more detail), such as for example situational judgment formats.

A second objective will be to describe normative SEMs acquisition over the course of teachers' professional career and gain insight into the environments promoting these developmental processes, in order to effectively and efficiently target these skills in pre- and in-service training programs. More formally, the taxonomy may help to formulate skill development indicators for evaluating progress and determining areas for improvement in the professional development of (pre-service) teachers ([Blömeke et al., 2008](#)). The taxonomy may further allow the development of a portfolio of interventions to increase teachers' SEMs awareness and mastery in line with contemporary (educational) needs ([Kwok, 2017](#)). Such a portfolio can include a variety of supportive and intervention programs, organized and grouped according to the teacher skill(s) they intend to target.

Alternatively, the taxonomy and accompanying intervention portfolio can also serve as a guiding framework for policymakers to grant teachers SEMs certificates for acquired and developed skills that can be flexibly used in the (teaching) job market. The availability of such a system organized around an empirically-based and agreed-upon SEMs taxonomy would be very helpful for school directors and policymakers, so they can better manage and develop the 'SEMs resources' of the teacher pool available in their school or region. Having a teacher SEMs taxonomy incorporating the various skill dimensions involved in effective teaching and

their behavioural indicators at different levels of competence thus appears to be the missing link to further advance our knowledge in this area.

## Conclusion

In summary, the present paper advocated for a more comprehensive and integrative conceptualization of social-emotional skills of teachers to guide contemporary research and practice in education. We outlined the richness and boundaries of the content to be mapped, defined the requirements of a teacher SEMs taxonomy, and finally proposed a conceptual model of teacher SEMs. However, critical work remains to be done, with an empirical investigation of the underlying structure of these SEMs and the development of a comprehensive assessment tool being the first priority. We eagerly anticipate collaborating with other research groups to further advance this exciting line of research.

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## Author contributions

JS and LV contributed equally to writing the manuscript and interpretation of the results. LA also contributed to writing the manuscript and revised it critically for important intellectual content. KT, GA, and RP contributed to the data collection and analysis, as well as to the writing and revision of the manuscript. OJ provided guidance on the study design, conception, and implementation of the study. FD supervised the entire project and provided critical feedback on the study design, data analysis, and interpretation of the results. He also contributed to writing and revising the manuscript for important intellectual content. All authors contributed to the article and approved the submitted version.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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