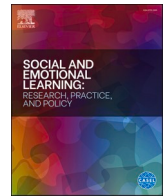




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## Bridging the gap in teacher SEL training: Designing and piloting an online SEL intervention with and for teachers

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### ABSTRACT

This study depicts the development of an online SEL intervention for Portuguese elementary-school teachers (A+), through an exploratory sequential design. First, to ensure the relevance and applicability of the A+, ten focus group were conducted with 66 elementary-school teachers (90.9 % female,  $M_{age}=45.56$  years,  $SD_{age}=5.57$ ). Results indicated strong interest and perceived relevance among teachers regarding SEL interventions. Based on Phase 1's identified needs and the SEL theoretical framework, a pilot version of the A+ was designed. To evaluate the efficacy and validity of the A+ pilot version, a pre-posttest mixed-methods design with 21 teachers (90.5 % female,  $M_{age}=49.00$  years,  $SD_{age}=6.44$ ) was conducted. Data were collected through self-report questionnaires and analyzed using Robust Linear Mixed Models. Results suggested positive effects of the A+ program on teachers' positive affect, responsible decision-making skills, and well-being. Additionally, teachers expressed high levels of interest and satisfaction with the proposed content and procedures. Despite its limitations, this study presents promising indicators of the A+ program's potential effectiveness and suitability.

### Introduction

Teaching is one of the professions most vulnerable to burnout, which arises from a mismatch between excessive job demands and a lack of resources to manage them (Kyriacou, 2011; Schaufeli & Taris, 2014). This leads to a teacher retention crisis with significant psychosocial, educational, organizational, and economic impacts. These effects are seen in many Organization for Economic Co-operation and Development (OECD) countries (Viac & Fraser, 2020), including Portugal (Portuguese Psychologists Association, 2020). The situation has intensified in recent years due to the SARS-CoV-2 pandemic (e.g., Sokal et al., 2020; Trinidad, 2021), especially among elementary-school teachers in Portugal (Alves et al., 2021). Thus, teachers' occupational health, job satisfaction, and performance, along with the quality of learning environments, are compromised (Jennings & Greenberg, 2009; Schaufeli & Taris, 2014).

As a result, teacher burnout presents a major sociopolitical and scientific challenge. One potential pathway to mitigating teacher burnout is to implement targeted interventions to enhance teachers' occupational health and well-being by bolstering their job and personal

resources, enabling them to better manage job demands (Schaufeli & Taris, 2014). This approach is supported by extensive empirical evidence linking teachers' job and personal resources to their occupational health and well-being (e.g., Bakker et al., 2007; Dicke et al., 2018; Hakanen et al., 2006; Simbula et al., 2011; Taris et al., 2017). As teaching-specific stressors are primarily social-emotional, Social and Emotional Learning (SEL) interventions for teachers are particularly relevant (Schonert-Reichl, 2017). Therefore, this study presents the multi-phase development of a theoretical, empirically grounded and culturally adapted online SEL intervention (the A+ program) for Portuguese elementary-school teachers.

### Social and emotional learning interventions for teachers

To create effective and tailored interventions aimed at reducing teacher stress, it is essential to first understand the primary stressors teachers face. International research has consistently identified job demands as the main sources of teachers' occupational stress and burnout (e.g., workload, time pressure, classroom management, interpersonal

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conflicts; Kyriacou, 2011; McCarthy et al., 2016). Additionally, nurturing resources such as social-emotional skills (e.g., self-awareness, emotion-regulation, conflict resolution) can reduce teacher stress and burnout. As a result, SEL interventions focused on enhancing teachers' social and emotional competence (SEC; i.e., self- and social-awareness, self-regulation, relationship management, and responsible decision-making; Durlak et al., 2015), have gained momentum in the last 15 years. Developing SEC helps teachers manage their emotions, build positive interpersonal relationships, make responsible decisions, and handle situations constructively. This enables them to better adapt and respond to both personal and professional challenges (Durlak et al., 2015; Schaufeli & Taris, 2014). Empirical evidence demonstrates that SEL interventions can mitigate teachers' burnout. Recent meta-analyses show their effectiveness in promoting teachers' SEC (e.g., emotional and behavioral regulation), well-being, and personal accomplishment, while also alleviating emotional exhaustion symptoms (Oliveira et al., 2021a, 2021b). Prior research also highlights SEL interventions' distal impacts on teachers' classroom management skills and teacher-student interactions, ultimately benefiting students' well-being and performance (Carvalho et al., 2021; Jennings et al., 2017).

However, most SEL interventions for teachers still lack solid theoretical and empirical foundations, as well as cultural adequacy and validation (Oliveira et al., 2021a). Moreover, these interventions have mainly acted on an individual level (intrapersonal and intrapersonal skills; Oliveira et al., 2021a), often neglecting the organizational level (e.g., organizational climate) (Collie et al., 2012; Schaufeli & Taris, 2014). Therefore, SEL interventions targeting teachers could benefit from a more systemic approach, similar to the recommendations made for students (Durlak et al., 2015). There is a notable gap in studies examining the dynamics between personal, interpersonal, and organizational level stressors using a systemic approach. Thus, given the increased vulnerability of teachers to burnout (Viac & Fraser, 2020), it is crucial to develop coordinated SEL interventions that integrate individual, interpersonal and contextual variables.

#### *From theory to practice: the underpins for the A+ program*

##### *Theoretical models*

**Job demands-resources model.** The Job Demands-Resources (JD-R) model provides a framework for understanding employee occupational health and well-being through the interaction of perceived negative (demands) and positive (resources) job characteristics (Schaufeli & Taris, 2014). Job demands (e.g., workload, interpersonal conflict, time pressure) are the physical, social, or organizational aspects of work that require sustained effort and can lead to strain if not managed (Demerouti et al., 2001). These demands can be further divided into two categories: Job hindrances – referring to job aspects that negatively interfere with employees' work goal achievement and well-being (e.g., role ambiguity, job insecurity); and Job challenges – depicting job aspects that may be both energy-depleting and stimulating by containing potential gains (e.g., time pressure, cognitive demands) (Van den Broeck et al., 2010). On the other hand, job resources (e.g., social support, autonomy, feedback) are factors that help employees 1) achieve work goals, 2) mitigate job demands, and/or 3) foster personal growth (Demerouti et al., 2001). The model also integrates personal resources, which refer to an individual's ability to successfully control and impact their environment (Taris et al., 2017). These resources (e.g., emotional competencies, intrinsic motivation, self-regulation, optimism, self-efficacy) play a role in shaping how individuals respond to job demands and utilize job resources. Although the JD-R model assumes that relevant job characteristics may vary across professions, research applying the JD-R model to teachers has often focused on a narrow set of job demands and resources, which are not specifically tailored to the teaching context (Taris et al., 2017). This highlights the need to examine

job demands and resources that are specific to teaching. The JD-R model highlights dual pathways through which demands and resources impact employee occupational health and well-being. The first is a *health impairment process*, where excessive job demands that are not effectively managed lead to stress and burnout. The second is the *motivational process*, where the absence of resources can lead to demotivation and withdrawal, whereas an abundance of resources can enhance work engagement and performance (Schaufeli & Bakker, 2004). The revised JD-R model underscores the dynamic interplay between job demands and job and personal resources, offering a versatile tool to improve occupational health and enhance organizational outcomes. We used the JD-R model to identify teacher-specific stressors to address in the A+ program (e.g., workload, interpersonal conflict) and to guide the expected outcomes of the program (i.e., teacher burnout and well-being).

**SEL framework applied to teachers.** This framework builds on Durlak et al.'s (2015) operationalization of SEC (i.e., self-awareness, self-management, social awareness, relationship skills, and responsible decision-making). It also identifies the specific skills of a socially and emotionally competent teacher in a contextualized and job-specific manner (Jennings & Greenberg, 2009). For example, regarding self-regulation, teachers should be able "to regulate their emotions in healthy ways that facilitate positive classroom outcomes without compromising their health" (Jennings & Greenberg, 2009, p. 495). The framework also highlights the role of contextual factors (e.g., co-teacher, parental and principal support, principal and district leadership, school climate) in influencing teachers' SEC (Jennings & Greenberg, 2009). We applied this framework to define the specific content of the A+ program (i.e., self- and social awareness, self-regulation, relationship skills, and responsible decision-making); and the coping (i.e., problem-focused and emotion-focused) and motivational (i.e., fulfillment of the needs for autonomy, competence, and relatedness) strategies included in the program to promote teachers' SEC and well-being.

**Social and emotional competence school model.** Collie's (2020) Social and Emotional Competence School Model provides a comprehensive framework for understanding how SEC develop through the interaction of individual skills, relationships, and environmental factors in school settings. It emphasizes the reciprocal influence of personal skills and external factors, such as school climate, teacher-student interactions, and peer relationships, highlighting the dynamic nature of SEC development (Collie, 2020). Grounded in the self-determination theory (Ryan & Deci, 2017), this approach underscores the interconnectedness of individual and contextual elements. It asserts that both SEC development and manifestation depend on the individual's experience of basic psychological need satisfaction (i.e., autonomy, competence, and relatedness) within the social environment. Building on Collie's (2020) suggestions for students, we propose that schools can enhance employees' performance, occupational health and well-being by promoting a supportive, inclusive environment. This can be achieved by embedding SEC into the school experience, and equipping school staff with resources to manage job demands through professional development. More specifically, teachers who develop social and emotional competencies will be better prepared to navigate job demands and contribute to a healthier school climate. We followed this model when designing the A+ program, as it reinforces the importance of considering the individual's context and perceived social support when promoting socially and emotionally competent behavior.

Building on these theoretical models, a systemic approach to SEL interventions can enhance both teachers' job and personal resources. Personal resources include emotional and mental competencies, self-regulatory focus, optimism, and self-efficacy (Schaufeli & Taris, 2014), which are operationalized as specific skills within the scope of SEL (e.g., Durlak et al., 2015; Oliveira et al., 2023). Thus, SEL interventions can

directly promote teachers' personal resources. By promoting self-regulation and interpersonal skills, systemic SEL interventions can also contribute to increasing job resources (e.g., social support from colleagues and supervisors, team cohesion, positive climate) and mitigate job demands (e.g., interpersonal conflict, workload, work-life conflict) (Schaufeli & Taris, 2014). By enhancing teachers' self-regulatory and interpersonal skills, SEL interventions equip teachers with strategies to regulate their emotions, navigate workplace challenges more effectively, and reduce distress. Improved self-regulation also helps teachers set boundaries, prioritize tasks, and cope with high workloads, while stronger interpersonal skills among school staff foster positive communication and conflict resolution. This reduces interpersonal tensions and conflicts. As a result, SEL interventions not only strengthen teachers' personal resources but also create a more supportive work environment that better addresses job demands.

### *Empirical evidence*

**SEL for teachers.** Empirical evidence consistently supports the positive impacts of SEL interventions for teachers, both directly on their personal and professional levels and indirectly on their students. At the personal level, research shows that these interventions effectively enhance teachers' SEC and positively impact their occupational health and well-being. This is achieved by increasing their overall well-being and personal accomplishment or reducing psychological distress, particularly emotional exhaustion (Oliveira et al., 2021a, 2021b). Socially and emotionally competent teachers appear better equipped to manage job demands, leading to higher job and life satisfaction (e.g., Crain et al., 2017). These findings are especially important given the literature's call for innovative interventions that address teacher burnout beyond emotional exhaustion (e.g., Iancu et al., 2018). Recent meta-analyses also highlight that SEL interventions are effective in reducing psychological distress when they specifically target intrapersonal skills, such as self-awareness and self-regulation (Oliveira et al., 2021b). This contrasts with traditional teacher training, which typically focuses more on interpersonal skills (Schonert-Reichl et al., 2017). At the professional level, SEL interventions have a distal impact on teachers' ability to manage classrooms and address challenges. Evidence shows improvements in classroom climate and instructional practices, including emotional support, personalized teacher-student interactions, and effective classroom management. These changes lead to higher-quality learning environments (e.g., Jennings et al., 2017). Moreover, due to the co-regulatory nature of classroom interactions, teachers who model socially and emotionally competent behaviors encourage SEC in their students. This, in turn, enhances student well-being and academic performance (e.g., Carvalho et al., 2021). The co-regulatory effect is bidirectional (Jennings & Greenberg, 2009) and extends to the entire school and staff. Research has shown that contextual variables (such as school climate) impact teachers' SEC (e.g., Collie et al., 2012). In short, empirical evidence confirms that SEL interventions for teachers are vital in helping them regulate and meet job demands more effectively. These interventions enhance teachers' occupational health, well-being, and professional performance, while fostering healthier classroom climates and promoting students' social, emotional, and academic learning. The empirical data on SEL for teachers informed the design of the A+ program, particularly its content and structure (i.e., the five modules addressing the 5-key core SEC were sequenced and began with intrapersonal SEC).

**Best practices for effective SEL interventions.** Effective SEL interventions should be based on research-driven strategies that prioritize structured, skill-focused learning (Durlak et al., 2010). The literature identifies four core principles (i.e., SAFE) for successful SEL programs: 1) programs

should follow a coordinated sequence with increasing complexity; 2) they should use active learning (i.e., participants are given the opportunity to practice new behaviors and skills and receive feedback on their performance); 3) the program should concentrate on a specific set of skills and behaviors at a time, dedicating sufficient time and attention to guarantee learning; and 4) the program should clearly define targeted, specific, and explicit goals (Durlak et al., 2010).

**Best practices for online interventions.** Online interventions present both unique opportunities and challenges, requiring careful design to maximize effectiveness. Research on online intervention best practices (e.g., Beatty & Binnion, 2016; Hofmann, 2014; Kintu et al., 2017) highlights three key considerations: 1) the content should be dynamic, interactive and engaging, using interactive tools that keep participants interested and committed; 2) the intervention should accommodate various learning styles and 3) it should be accessible across different devices to support inclusion and promote participant adherence; and 4) the program should create a supportive environment by incorporating mechanisms for feedback, guidance, and peer interaction to support learning. We incorporated these recommendations for both SEL and online interventions in the design of the A+ program's sessions, structure and procedures. A detailed description of how we implemented these procedures can be found in the [Supplementary Material](#).

**Participatory research.** Participatory research and intervention consist of empowering participants to express their needs in a safe environment. These exchanges help shape the intervention content and foster changes in practices and procedures (Fox et al., 2022; Lau & Stille, 2014). While traditionally applied with children and youths (e.g., Horgan, 2017), its use with adults has shown promising results (e.g., Fox et al., 2022; Lau & Stille, 2014). Participatory research methods appear to increase participant interest and engagement (Horgan, 2017), thus promoting responsiveness (i.e., participants' enthusiasm for and involvement in the intervention), which is a crucial factor in implementation quality and intervention effectiveness (Berkel et al., 2011). Moreover, acknowledging participants' expertise yields more meaningful and actionable insights, driving changes in practice and understanding (Lau & Stille, 2014). Structured implementation is key to the effectiveness of participatory research. Instead of leaving problem identification open-ended, participants benefit from specific questions that guide their reflection on particular topics (Fox et al., 2022). We applied this approach throughout the design of the A+ program's design. We asked teachers directly about their perceptions of job demands, personal and job resources, and tested the preliminary acceptability of the A+ program's methods, content, and procedures.

### *The present study*

This study sought to develop a grounded and culturally adapted online SEL intervention targeting Portuguese elementary-school teachers (the A+ program), addressing both individual and group-level dimensions. This paper describes the initial steps of the A+ development and piloting, using an exploratory sequential design and a participatory approach across two phases (Berkel et al., 2011; Fernández-Ballesteros, 1996). The first phase aimed to ensure the relevance and usefulness of the A+. Using the JD-R model applied to teachers, we collected qualitative data to (a) identify teachers' SEL needs; (b) explore their interest and perceived usefulness in engaging with a SEL intervention targeting their own SEC, and (c) test the preliminary acceptability of the intervention methods, content, and procedures (Fernández-Ballesteros, 1996). The second phase involved a pilot study to evaluate the feasibility and acceptability of the intervention. The pilot study also provided initial evidence of the A+ program's impact on teachers' SEC,

well-being, and burnout.

## Phase 1 of the program development

### Method

#### Participants

Sixty-six Portuguese elementary-school teachers ( $M = 45.56$  years,  $SD = 5.56$ , age range: 33–58 years, 90.9 % female,  $M = 21.35$  years of teaching experience,  $SD = 4.83$ ) participated in the first phase of the study. Teachers were practicing in 14 state elementary schools across three school clusters<sup>1</sup> (referred to as Clusters A, B and C) in the Lisbon Metropolitan Area. Most teachers (65.2 %) were permanent staff members of the school cluster and held a pre-Bologna 5-year Bachelor's degree<sup>2</sup> (87.9 %). Prior to this study, 80.3 % of the teachers had never attended a SEL intervention for themselves or their students. The three school clusters shared similar organizational structures, socioeconomic levels, and were of approximately the same size.

#### Measures

Data was collected through a focus group. A bespoke semi-structured script was designed, consisting of three core blocks: Block I sought to identify teachers' perceptions of the professional demands affecting their occupational health (e.g., "What would you describe as the biggest challenges and needs compromising your satisfaction and well-being?"). Block II assessed teachers' perceptions of professional resources that helped them cope with perceived demands and/or enhanced their occupational health (e.g., "What assets and strategies do you use to manage professional strains?"). Block III explored teachers' experiences with explicit training of their own SEC during pre-service and in-service courses (e.g., "To what extent do pre-service and in-service training for elementary-school teachers address the explicit development of their SEC?"). An introductory block framed the focus group's goals, and a final systematizing block closed the session. To ensure the script was clear, neutral and in line with the focus group's goals, we followed Krueger and Casey's (2009) guidelines. Questions were structured from general to specific and were contextualized (e.g., we asked teachers to reflect on "their professional circumstances", "personal experiences", and "work environment"). Pre-established brief questions with counter-argument responses were included to avoid polarizing effects (e.g., if teachers focused solely on personal resources, we would introduce an alternative angle, such as "in another group, teachers referred to colleagues' support, what do you think of this perspective?"). We included ice-breaker exercises to frame the topics and promote teachers' engagement (e.g., reading case studies, watching short videos of classroom dynamics). Teacher's sociodemographic data were collected through a questionnaire at the end of the focus group.

#### Procedures

The study was approved by the Scientific and Ethical Council of the Faculty of Psychology, University of Lisbon (FPUL), and authorized by the school principals. Teachers provided written informed consent. We used a convenience sampling method to recruit the school clusters involved in the study. After contacting the schools and obtaining permission from the principals, the first author briefed all elementary-school teachers in each cluster about the study, ensuring clarity on its

aims and participation procedures. To ensure that teachers identified as peers, had direct knowledge of the work context, and felt comfortable sharing their perspectives, eligibility criteria required participants to have taught in the current school cluster for at least a year. Teachers in coordinating or supporting roles were excluded. After the briefing, teachers self-selected into the study.

Focus groups were scheduled at the teachers' headquarter-school (i.e., the high school in the cluster where no teachers taught) to guarantee a neutral but familiar setting. Each group, consisting of 6–8 teachers from the same school cluster, followed a U-shaped seating arrangement (Krueger & Casey, 2009). Two trained researchers, one as a moderator, and the other as an assistant, led ten focus groups lasting a maximum of 120 minutes (Krueger & Casey, 2009). Audio recordings were coded with personal codes for each participant, allowing cross-referencing of contributions while ensuring data confidentiality and participants' anonymity. Teachers were informed about the destruction of recordings after transcription. No compensation was provided.

#### Analytic strategy

Given the study's exploratory nature, we analyzed the data using inductive content analysis (Bardin, 1977). The corpus consisted of 10 verbatim transcriptions of the audio recordings. To enhance comprehension, we performed an active, progressively in-depth reading of the corpus, and identified recording units (i.e., segments of meaningful content that were categorized, e.g., words, sentences, propositions). Initial and focused coding then defined the category and sub-category system. We ensured the internal validity of the categorization process through the following criteria: exhaustivity (we coded all relevant quotes), exclusivity (each recording unit was assigned to only one (sub-) category), homogeneity (the category system was consistent and addressed the same topic), pertinence (the (sub-)categories answered the topic and research questions), objectivity (all (sub-) categories were operationally defined), and productivity (the category system yielded meaningful insights) (Bardin, 1977). Reliability was ascertained through inter-coder agreement. We obtained an agreement rate of 94 %, resolving discrepancies through collaborative reflection. After validating the category system, we conducted an additional between school-cluster comparison analysis. We examined the proportional frequency of each sub-category across school clusters, adjusting for the number of participants per cluster. This allowed us to compare the prevalence of different job and personal demands and resources across groups. By exploring the co-occurrence of different codes, we identified patterns and interactions of (sub-)categories both within and between clusters. Content analysis was performed using NVivo 11 for Windows.

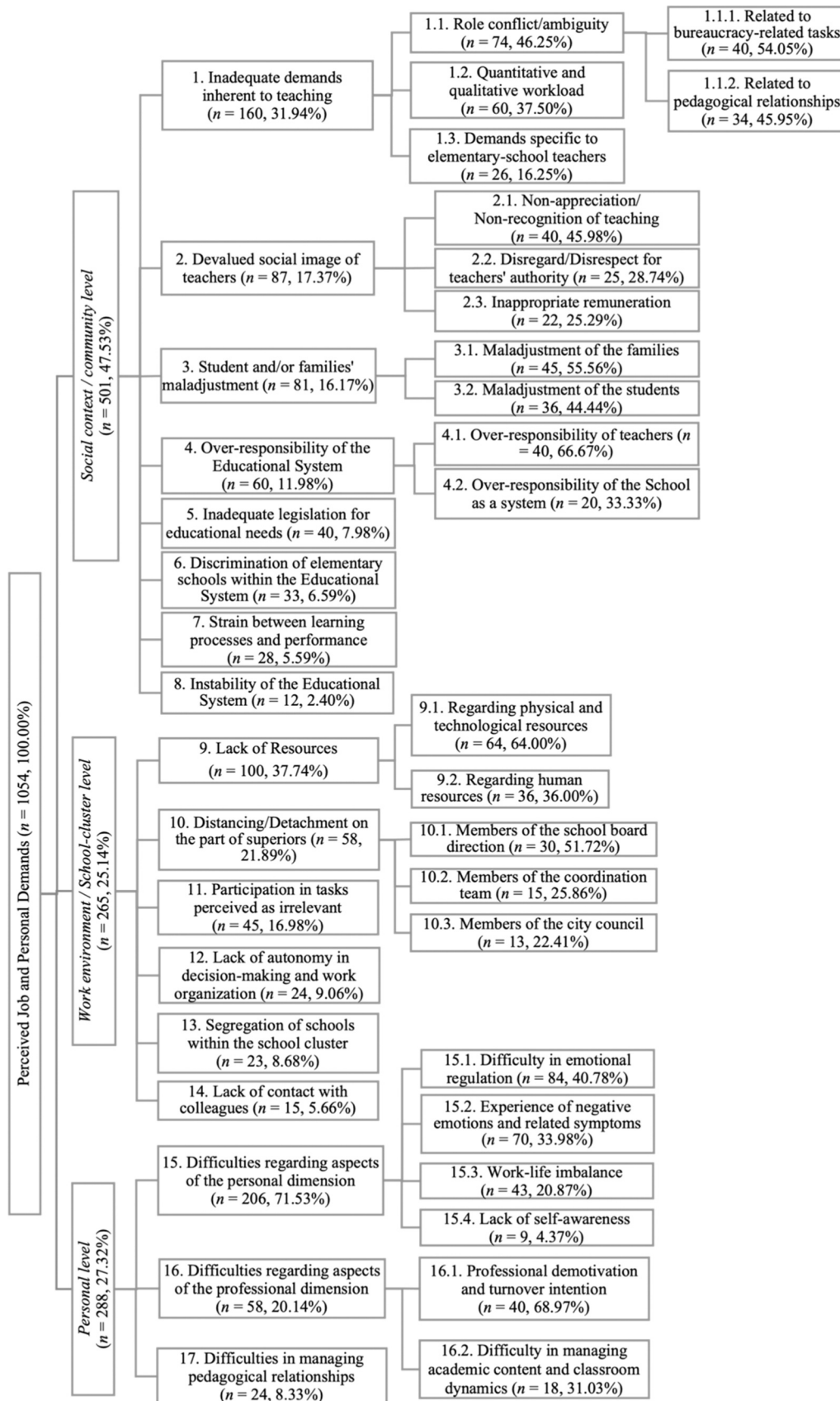
### Results and discussion of phase 1

#### Teachers' perception of professional demands and resources

The analysis produced 17 categories and 23 subcategories for teachers' perceived professional demands, and 6 categories and 10 subcategories for resources (see Figs. 1 and 2 and Supplemental Tables S1 and S2 for details). A total of 1437 recording units described professional demands or resources. Teachers reported around 2.75 times more demands ( $n_{\text{recording units}} = 1054$ , 73.35 %) than resources ( $n_{\text{recording units}} = 383$ , 26.65 %), consistent with prior literature indicating an imbalance between high job demands and limited resources to cope with them (Kyriacou, 2011; Schaufeli & Taris, 2014). We categorized professional demands and resources into three levels: *Personal* (skills, strategies, attitudes, behaviors); *Work environment/School-cluster* (aspects of the teachers' immediate environment); and *Social context/community* (sociocultural influences such as media, laws, social beliefs). Professional demands were primarily identified at the *Social context/community* and *Work environment/School-cluster* levels, whereas professional resources were mainly perceived at the *Personal* level. This pattern aligns with prior literature suggesting that teachers' occupational (ill-)health and well-being are influenced by personal,

<sup>1</sup> Portuguese elementary schools operate within school clusters (including K-12 schools), where multiple elementary schools are grouped under one administrative and management team, led by a common principal. In our study, Clusters A and B each had four elementary schools, while Cluster C had five.

<sup>2</sup> Before the Bologna Process reforms (2006), the *Licenciatura* in Portugal was a five-year advanced degree, combining undergraduate and some graduate-level coursework. It is often considered equivalent to a Bachelor's degree plus one year of postgraduate studies or a Master's degree in some systems.



(caption on next page)

**Fig. 1.** System of Categories and Subcategories Depicting Teachers' Perceived Job and Personal Demands Organized in Descending Order of Frequency ( $N_{\text{record units}} = 1054$ , 100 %). *Note:* 1. Inadequate demands inherent to teaching – Characteristics inherent to teaching described as inadequate demands (e.g. quantitative and qualitative workload, complexity of the job, role conflict and ambiguity); 1.1. Role conflict and ambiguity – Teachers are assigned responsibilities that exceed the teaching and pedagogical scope, requiring them to fulfill multiple roles they perceive as outside their job description, both within the classroom and as employees of the school; 1.2. Quantitative and qualitative workload – Descriptions of teaching as a job involving challenging in-class demands, paired with long, continuous working hours to address a wide range of tasks; 1.3. Demands specific to elementary-school teachers – The complexity of primary school teaching is due to the specific characteristics of this level of education (e.g., diversity of content, stages of development, needs); 2. Devalued social image of teachers – Societal agents (i.e., government, families, community, media) hold a negative and disregarded view of teaching; 2.1. Non-appreciation and non-recognition of teaching – Society undervalues teachers' contributions and overlooks the difficulties they face; 2.2. Disregard and disrespect for teachers' authority – Teachers experience scrutiny of their professional decisions and judgments, along with perceived disrespect or distrust in their roles; 2.3. Inappropriate remuneration – Teachers are inadequately compensated relative to the nature of their job, duties and inherent responsibilities; 3. Student and/or families' maladjustment – Traits or behaviors of students and their families hinder effective teaching; 3.1. Maladjustment of families – Parental behaviors, attitudes, or lack of responsibility (e.g., career-centered focus) negatively affect the teaching process; 3.2. Maladjustment of students – Student behaviors or attitudes (e.g., lack of social-emotional competence, indiscipline) pose challenges in the classroom; 4. Over-responsibility of the Educational System – Societal expectations place excessive responsibilities on education systems and teachers; 4.1. Over-responsibility of teachers – Teachers are expected to perform flawlessly, with little tolerance for errors or failures; 4.2. Over-responsibility of the School as a system – Schools are held accountable for broader societal roles (e.g., holistic child development, social responsibility, socio-emotional education); 5. Inadequate legislation for educational needs – Laws and regulations misaligned with the reality of educational practice hinder effective pedagogy; 6. Discrimination of elementary schools within the Educational System – Inequities in professional recognition, benefits, and valorization exist between elementary-school teachers and their counterparts in middle and high schools; 7. Strain between learning processes and performance – Institutional and governmental policies prioritize results (e.g., rankings, grades, statistics) over the quality of teaching and learning processes; 8. Instability of the Educational System – Frequent changes in the education system disrupt teachers' careers and daily work routines, contributing to uncertainty; 9. Lack of Resources – Insufficient resources hinder effective professional performance; 9.1. Physical and technological resources – Inadequate access to physical (e.g. heating, space, photocopying) and technological (e.g. computers, internet) resources; 9.2. Human resources – Shortages of support staff, educational assistants, and specialized technicians essential for teaching and school operations; 10. Distancing and detachment by superiors – Disinterest, lack of awareness, or disregard by superiors for the realities teachers face in their educational contexts; 10.1. Members of the school board – Lack of engagement or understanding from management staff (e.g., principals, deputy principals, assistant principals); 10.2. Members of the coordination team – Detachment by coordinators (e.g., department or establishment coordinators) regarding teachers' challenges and contexts; 10.3. Members of the city council – Alienation or disregard from local government decision-makers (e.g., mayors, parish council presidents, education officials); 11. Participation in tasks perceived as irrelevant – Assignment of tasks considered insignificant, irrelevant, or unproductive, which hinder their teaching performance or fail to contribute to its improvement; 12. Lack of autonomy in decision-making and work organization – Limited autonomy in organizing work and making decisions leaves teachers feeling disregarded, with decisions imposed through a top-down, hierarchical approach; 13. Segregation of schools within the school cluster – Negative, competitive, or unsupportive relationships between teachers or colleagues from different schools within the same school cluster create a sense of division; 14. Lack of contact with colleagues – Insufficient opportunities to connect with colleagues due to factors such as incompatible schedules, heavy workloads, restrictive policies, or a lack of group cohesion; 15. Difficulties regarding aspects of the personal dimension – Challenges related to personal aspects (e.g., self-knowledge, self-regulation, self-efficacy) that interfere with teachers' professional performance; 15.1. Difficulty in emotional regulation – Struggles with managing emotions (e.g., impulse control, stress and anxiety, self-regulating motivation, ruminative thoughts, tolerance for error, and realistic self-expectations); 15.2. Experience of negative emotions and related symptoms – Frequent experiences of negative emotions (e.g., frustration, guilt, criticism, worry), often leading to stress, anxiety, and sleep disturbances; 15.3. Work-life imbalance – Difficulties in time management and personal organization create conflict between professional, personal, and family responsibilities; 15.4. Lack of self-awareness – Challenges in identifying, expressing, or reflecting on personal emotions, beliefs, behaviors, and attitudes; 16. Difficulties regarding aspects of the professional dimension – Issues related to professional roles and tasks that hinder teachers' performance; 16.1. Professional demotivation and turnover intention – Feelings of fatigue, disinterest, and disengagement from professional duties, often linked to accumulated negative experiences or career-related fatigue; 16.2. Difficulty in managing academic content and classroom dynamics – Struggles with delivering curriculum content and maintaining effective classroom dynamics and positive student relationships; 17. Difficulties in managing pedagogical relationships – Challenges in interpersonal relationships with colleagues, students, and their families that impact professional teaching performance.

interpersonal, and contextual variables (Collie et al., 2012; Schaufeli & Taris, 2014). Most categories were linked to the absence or presence of SEC (e.g., “Quantitative and qualitative workload” at the *Social context/community* level, “Distancing/Detachment on the part of superiors” at the *Work environment/School-cluster* level, and “Difficulty in emotional regulation” at the *Personal* level), though there were exceptions (e.g., “Instability of the Educational System”).

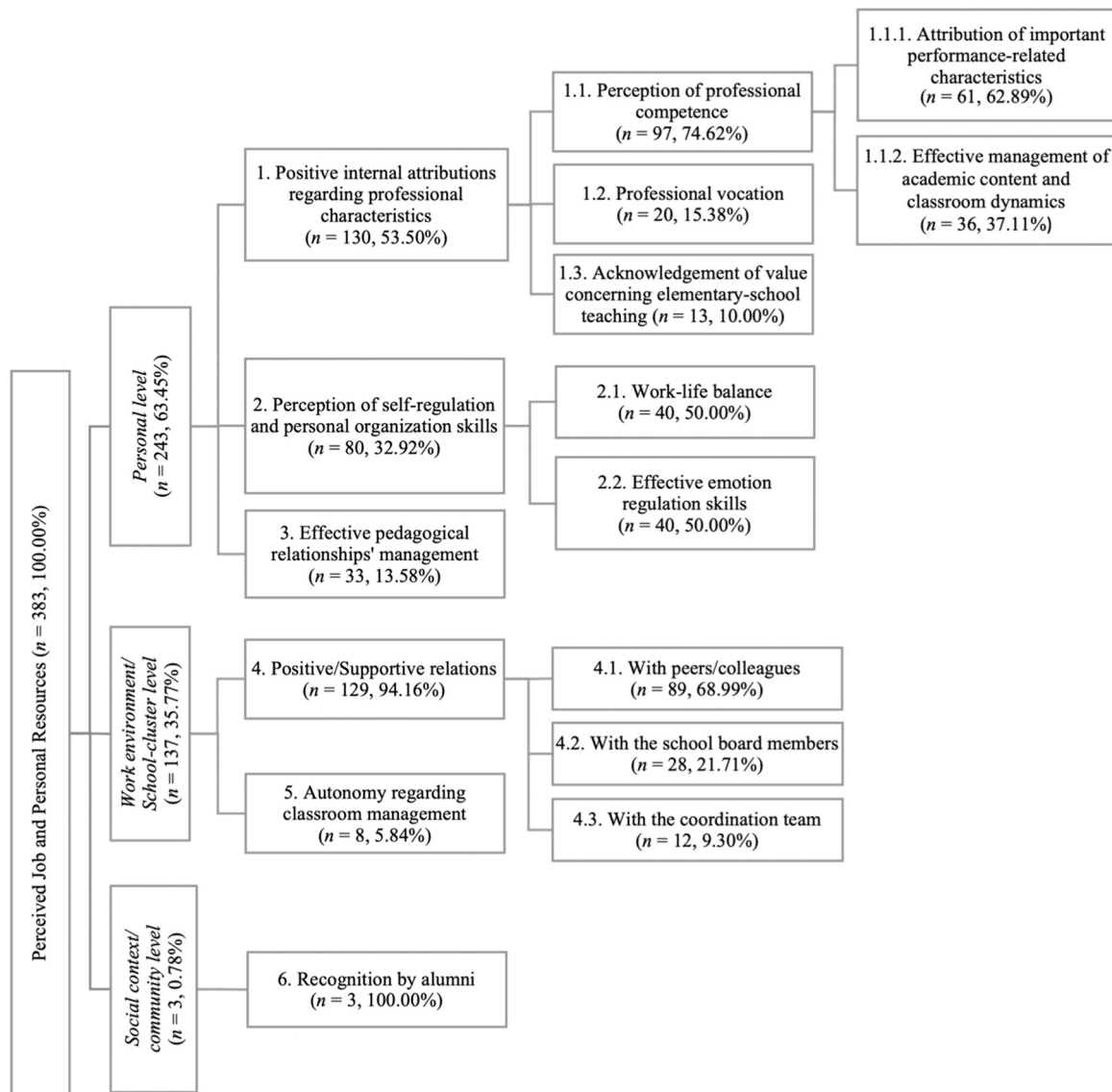
**Professional demands.** Regarding perceived demands (Fig. 1), at the *Social context/community* level, participants predominantly identified strains related to “Inadequate demands inherent to teaching” (31.94 %; e.g., «[Out-of-class we have to prepare] parent meetings, assessments, planning, daily work...» [C4p4<sup>3</sup>]), and the “Devalued social image of teachers” (17.37 %; e.g., «I think that our profession is becoming more and more despised, devalued, has no interest...» [A3p7]). Findings depict teaching as a job marked by hindering cognitive and emotional demands, work overload, over-responsibility, job insecurity, role conflicts and perceived devaluation. These demands all contribute to teachers' physical and emotional distress, ill-health, as well as potential

absenteeism or turnover (Schaufeli & Taris, 2014).

At the *Work environment/School-cluster* level, the main demands were perceived as “Lack of resources” (37.74 %; e.g., «Sometimes we don't even have internet in the classroom.» [B2p8]) and professional isolation (21.89 %; e.g., «Teachers don't cross paths. People go weeks without seeing each other!» [C1p1]). Isolation stems both from the distancing of superiors (leading to a disregard of teachers' needs and their exclusion from decision-making processes) as well as limited contact with colleagues.

Lastly, at the *Personal* level, teachers mainly described emotion-regulation strains (40.78 %; e.g., «We're left thinking for days, ending up wearing ourselves out.» [B1p1]) leading to negative affect and related symptoms (33.98 %; e.g., «It's very exhausting!» [C4p4]). Strains related to work-life imbalance with negative spillover from work to family/personal time (20.87 %; e.g., «Afterwards, we also take work home.» [C3p6]), and professional demotivation and turnover intention (68.97 %; e.g., «I'd retire tomorrow if I could.» [A2p3]) were also prominent. These findings align with prior literature emphasizing the socio-emotional nature of teaching-specific stressors (McCarthy et al., 2016) and highlight the need to invest in promoting SEC as a resource to address these identified job demands. The results also align with prior literature that stresses the potential impact of personal resources on the interaction between job demands/resources and occupational health and well-being, serving as mediators, moderators, and/or antecedents, in the dynamics between job characteristics and outcomes (e.g., Schaufeli & Taris, 2014; Taris et al., 2017). Promoting SEC offers an

<sup>3</sup> The breakdown of participants' identification code is as follows: the first character designates the school cluster (i.e., A, B or C), the second character indicates the focus group within that school cluster, and the third and fourth characters represent the participant number within that focus group (p1, p2...)



**Fig. 2.** System of Categories and Subcategories Depicting Teachers' Perceived Job and Personal Resources Organized in Descending Order of Frequency ( $N_{\text{record units}} = 383, 100\%$ ). *Note:* 1. Positive internal attributions regarding professional characteristics – Beliefs about personal professional traits that enhance teaching performance; 1.1. Perception of professional competence – Confidence in effectively fulfilling their duties as elementary-school teachers; 1.2. Professional vocation – A sense of intrinsic motivation, enjoyment, and dedication to teaching; 1.3. Acknowledgement of value concerning elementary – Recognition of teaching in elementary education as meaningful, important, and valuable; 2. Perception of self-regulation and personal organization skills – Personal skills that support effective teaching performance; 2.1. Work-life balance – Competence in time management and personal organization to balance professional, personal, and family responsibilities; 2.2. Effective emotion regulation skills – Confidence in managing and regulating emotions effectively; 3. Effective pedagogical relationships management – Competence in self-regulating verbal and non-verbal communication, along with satisfaction in interpersonal relationships with students, their parents or relatives, and colleagues; 4. Positive and supportive relations – Experience of supportive interpersonal connections in the workplace; 4.1. With peers and colleagues – A strong social support network with fellow teachers at their school and/or school cluster; 4.2. With school board members – Positive relationships with school board members (e.g., principals, deputy principals); 4.3. With the coordination team – Supportive relationships with coordinators (e.g., department and establishment coordinators); 5. Autonomy in classroom management – Independence to manage and decide on classroom activities, dynamics, and teaching strategies; 6. Recognition by alumni – Acknowledgment of the teacher's professional contributions by former students.

evidence-based strategy to address the socio-emotional demands of teaching (occurring both at the personal and societal/work environment levels), aligning directly with the unique stressors identified in this study. For example, self-regulation skills could help teachers manage stress, reduce exhaustion, and respond more effectively to job demands such as workload, while reducing spillover and work-life imbalance. Relationship skills and self-awareness could help teachers maintain positive relationships, manage interpersonal conflicts, and increase social support, thereby reducing isolation. Following the JD-R model, SEC function as personal resources that, according to previous literature, can directly enhance teachers' well-being and occupational health, while

also strengthening their ability to navigate professional challenges effectively (Oliveira et al., 2021a, 2021b; Schaufeli & Taris, 2014).

**Professional resources.** Regarding perceived resources (Fig. 2), the majority of responses emphasized the *Personal level* (63.45 %) followed by the *Work environment/School-cluster level* (35.77 %). At the *Social context/community level* (0.78 %), teachers mainly identified recognition from former students as promoting their well-being (100.00 %; e.g., «[The students'] recognition gives us the strength to say: "we're not going to give up."» [A3p4]). In contrast, most professional demands emerged at the *Social context/community level*, highlighting the need to rethink the

sociopolitical vision of this professional group and act to improve teachers' well-being and job satisfaction by addressing identified demands (e.g., promoting appreciation, financial rewards, role clarity, professional pride; [Schaufeli & Taris, 2014](#)).

At the *Work environment/School-cluster* level, 94.16 % of recording units referred to teachers' experiences of "Positive/Supportive relations," particularly with colleagues (68.99 %; e.g., «*Everyone gets along!*» [C1p6]), and school board members (21.71 %; e.g., «*This leadership gives us the sense of team and belonging.*» [B1p2]). This strong emphasis on social interactions reinforces the importance of social support, team cohesion, and organizational climate in fostering a supportive work environment, which is known to enhance well-being and buffer against stress and burnout ([Schaufeli & Taris, 2014](#)). However, besides social support, teachers only mentioned one other job resource at this level: perceived autonomy in classroom management (5.84 %; e.g., «*We are still free to manage [the classroom] as we want.*» [C2p1]). Given that autonomy is a well-documented contributor to motivation and job satisfaction ([Schaufeli & Taris, 2014](#)), this suggests that teachers may benefit from greater empowerment in decision-making beyond classroom management. The lack of references to key job resources, such as participation in decision-making, feedback, job challenges, goal and task clarity, and information-sharing ([Schaufeli & Taris, 2014](#)), indicates these areas remain underdeveloped. Strengthening these dimensions through targeted professional development and school policies may foster greater teacher engagement, a stronger sense of agency, and higher professional satisfaction, ultimately leading to healthier work environments.

Lastly, at the *Personal* level, teachers mainly highlighted professional resources (53.50 %) related to the perception of professional competence (74.72 %; e.g., «*We have an amazing capacity to reinvent ourselves!*» [A3p7]). Self-regulation and organizational skills were also important (32.92 %), especially in terms of mobilizing emotion regulation strategies (50.00 %; e.g., «*I listen to an opera that I love and I cry. It frees me.*» [A1p6]) and maintaining work-life balance (50.00 %; e.g., «*I need that time to myself.*» [A4p5]). These results illustrate and support the importance of developing teachers' personal resources that mitigate perceived professional demands and contribute to their well-being and occupational health (e.g., self-regulatory focus, resilience and self-efficacy) ([Schaufeli & Taris, 2014](#)). However, our findings also denote a dual nature in the *Personal level's* (sub-)categories: the presence of a specific skill is described as a resource, while its absence considered a demand. This highlights the need for universal promotion of SEC among teachers.

*Between school-clusters comparison of perceived professional demands and resources.* Differences among school clusters sustain the key-role of the work context, particularly the school climate, as either a resource to mitigate job demands or a risk factor ([Collie et al., 2012](#)). In Cluster B, where teachers perceived closer, more engaging, and supportive relationships (47.03 % of total recording units regarding resources at the *Work environment/School-cluster* level), fewer professional demands (23.94 %) were mentioned. Teachers from Cluster C, which reported the highest level of demands at the *Work environment/School-cluster* level (40.15 %), actively sought and valued professional social support networks (41.28 %), mainly from the school principal (54.55 %) but also from their colleagues (32.35 %). Conversely, teachers in Cluster A perceived more demands at the *Social context/community* level (i.e., lower perceived control; 45.11 %), and seemed to offset these demands by developing their personal own resources (42.78 %).

Professional demands appear to relate to personal resources and demands depending on the context in which they arise. Specifically, higher demands perceived in a broader, more distant context, such as at the *Social context/community* level, were linked to the activation of personal resources, suggesting that distant pressures stimulate ones' ability to adapt and draw on strengths. In contrast, demands in more

immediate settings, such as at the *Work environment/School-cluster* level, were more closely tied to the perception of personal demands and risk factors, suggesting that demands from a proximal context might increase the perception of individual vulnerabilities and stressors. Our findings, consistent with prior literature, reinforce the role of personal resources in influencing the relationship between teachers' job characteristics (e.g., role conflict, workload, job insecurity) and their well-being ([Schaufeli & Taris, 2014](#)), particularly by shaping how they interpret and react to their environment. Moreover, the relationship between personal and contextual factors appears to be bidirectional, with teachers' immediate work environment playing a major role in elementary-school teachers' occupational health (e.g., [Simbula et al., 2011](#)).

Our qualitative findings support the need for systemic SEL interventions for teachers in the studied schools, taking into account contextual variables and involving teachers' colleagues, supervisors, and school principals ([Collie et al., 2012](#); [Oliveira et al., 2021a, 2021b](#); [Schaufeli & Taris, 2014](#)). Emphasizing the promotion of social support networks among teachers is particularly important, as prior literature identifies these job resources (e.g., supervisor support, appreciation, and organizational climate) as crucial for helping teachers cope with job demands (e.g., [Bakker et al., 2007](#)), and this aligns with recommendations for SEL for children and youths ([Durlak et al., 2015](#)).

#### *Teachers' perception of prior SEL explicit training*

The findings regarding teachers' prior SEL training were less expressive ( $n_{\text{recording units}} = 20$ ). Despite emphasizing difficulties across all five-core SEC domains, teachers unanimously perceived an absence of SEL training opportunities in both their pre-service and in-service training (e.g., «*I don't remember any training in this area.*» [A4p1]). Furthermore, available training programs were not geared towards teachers' own competences (e.g., «*Usually the training focuses on our students, it's not for us.*» [A1p5]); and in the case of SEC (even when for students) they were brief interventions (e.g., «*I think that regarding conflict management, there were only a few very short workshops once.*» [A1p6]). Those with prior SEL training had to seek it outside their training centers (e.g., «*I have already done a short training course designed for teachers as well, outside our school cluster, and it helped.*» [C1p4]). These results sustain the need for SEL interventions for teachers.

#### *Planning of the A+ program*

Based on Phase 1 findings, we created a set of guidelines to support the development of an initial manual for the A+ . The program's content and methodologies were grounded in the SEL framework ([Durlak et al., 2015](#)) applied to teachers ([Jennings & Greenberg, 2009](#)), the JD-R model ([Schaufeli & Taris, 2014](#)), and [Collie's \(2020\)](#) Social and Emotional Competence School model. Empirical grounding was built on previous studies on SEL for teachers (e.g., [Carvalho et al., 2021](#); [Collie et al., 2012](#); [Jennings et al., 2017](#)) and on good practices for effective SEL ([Durlak et al., 2015](#)) and online (e.g., [Beatty & Binnion, 2016](#)) interventions.

The SEL framework applied to teachers helped define the specific content of the program units (i.e., self- and social awareness, self-regulation, relationship skills, and responsible decision-making); and the coping (i.e., problem-focused and emotion-focused) and motivational (i.e., fulfillment of the needs for autonomy, competence, and relatedness) strategies to promote the desired behavioral change. The JD-R model provided guidance on teacher-specific stressors and their relation to the outcome variables that are expected to be impacted by this intervention (e.g., teacher burnout). Lastly, [Collie's \(2020\)](#) model reinforced the importance of accounting for the impact of the individual's context and perceived social support when promoting socially and emotionally competent behavior. This model depicts an interactive process where the development of SEC stems from the fulfillment of needs for autonomy, competence and relatedness, shaped by the

individual's context and perceived social support.

Phase 1 data adds to this theoretical guidance by pinpointing the main stress-generating daily situations for Portuguese elementary-school teachers, including: workload and work-life balance; regulation of negative emotions and symptom management; scarcity of close relations with peers and supervisors; perceived lack of autonomy and involvement in decision-making processes; and difficulties in establishing positive and assertive relations with students and families. The data informed practical examples incorporated into the program, ensuring the relevance of the content and exercises for participants' interest (i.e., autonomy; Ryan & Deci, 2017).

Considering the afore-mentioned strains and theoretical orientations, we developed five sequential training components, organized by stress-generating situations: (1) Personal organization and time management, (2) Emotional awareness and regulation, (3) Conscious communication, (4) Conflict management, and (5) Personal leadership. Modules 1 and 2 focused on intrapersonal SEC (self-awareness and self-regulation), Modules 3 and 4 on interpersonal SEC (social awareness and relationship management), and the final module on responsible decision-making skills. The A+ logic model is outlined in Table 1.

The pilot version of the A+ comprised seven online training sessions delivered via the Zoom platform. The first introductory session lasted

4 hours while the remaining sessions (one for each module, and a final integrative session) each lasted 3.5 hours. The sessions were held every other day over two weeks. Following SAFE guidelines for interventions (i.e., Sequenced training activities, Active learning methods, Focus on SEC development, Explicit SEL aims; Durlak et al., 2015), the sessions incorporated a mix of expository and active learning moments, including the introduction of new concepts, individual and group reflections, role-playing, storytelling, metaphors and analogies, feedback moments, brainstorming, and written exercises. Further details on the structure of the intervention, its content, and illustrative examples of activities can be found in the [Supplementary Material](#).

Acknowledging the role of teachers' immediate environment in their own SEC and occupational health (Collie, 2020), intervention groups were organized within the same school cluster. This facilitated the identification and resolution of context-specific problems and encouraged the construction of social support networks. Supervisors and hierarchical superiors were not included in the same training group, as this could undermine teachers' engagement and their perceived ability to address these issues. Both large and small group activities were included to promote social support networks among teachers, enhancing group cohesion and relatedness (Ryan & Deci, 2017). Regular guidance and feedback opportunities (Beatty & Binnion, 2016) ensured teachers

**Table 1**  
A+ logic model.

Module	SEC domains covered	Specific skills	Proximal outcomes	Distal outcomes
I - Personal organization and time management	Self-awareness and Self-regulation	<ul style="list-style-type: none"> <li>Ability to identify and establish one's priorities</li> <li>Set and achieve one's goals</li> <li>Adapt in the face of new information or situations</li> <li>Organize time, work and personal space to respond to different daily demands and tasks, maintaining focus and energy</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced ability to optimize productivity, in order to balance and respond to both work and personal life commitments</li> </ul>	<ul style="list-style-type: none"> <li>Increased use of self-care practices</li> <li>Improved sleep quality</li> <li>Increased well-being</li> <li>Enriched coping strategies to respond to professional demands and mitigate feelings of occupational stress and burnout symptoms</li> </ul>
II - Emotional awareness and regulation	Self-awareness and Self-regulation	<ul style="list-style-type: none"> <li>Understand and recognize one's emotions, feelings, and emotional expressions (physiological, cognitive, and behavioral) towards other people and everyday situations</li> <li>Self-regulate one's emotions (either by reducing, maintaining, or enhancing the emotional experience)</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced ability to acknowledge one's individual characteristics, emotions and behaviors; and to self-regulate their own emotions and consequent behaviors and decisions in both regular and challenging situations</li> </ul>	
III - Conscious communication	Social awareness and Relationship skills	<ul style="list-style-type: none"> <li>Recognize one's different communication patterns (in different situations and contexts)</li> <li>Ability to say "no" and authentically express their own perspectives, needs, opinions, and feelings</li> <li>Ability to recognize others' emotions through the observation of their (Non-)Verbal communication</li> <li>Take perspective and recognize different behavior functions</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced ability to build and maintain strong, collaborative and supportive relationships and interact effectively with others, by means of open communication</li> </ul>	
IV - Conflict management	Social awareness and Relationship skills	<ul style="list-style-type: none"> <li>Comprehend, appreciate, respect and value diverse perspectives and opinions even when facing conflicting situations</li> <li>Ability to openly admit personal mistakes and misbehaviors</li> <li>Be receptive to others' criticism and feedback, and to act and communicate without resentment</li> <li>Actively engage in collaborative work strategies</li> </ul>		
V - Personal leadership	Responsible decision-making	<ul style="list-style-type: none"> <li>Develop a growth mindset towards behavior evaluation and self-reflection</li> <li>Correctly identify a problem and generate multiple solutions to effectively solve everyday problems</li> <li>Integrate both intrapersonal and interpersonal skills to make decisions that are personal, moral, and ethically responsible</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced ability to make ethical and constructive choices on personal behavior and social interactions across settings, evaluate and reflect on their behaviors, and effectively solve problems</li> </ul>	

felt competent and engaged throughout the intervention (Ryan & Deci, 2017). User-friendly tools and platform functionalities (e.g., breakout rooms) were gradually introduced throughout the intervention (Beatty & Binnion, 2016).

In conclusion, the results of Phase 1, along with previous theory and research, were used to develop this novel online intervention to develop Portuguese elementary-school teachers' own SEC. Phase 2 assessed the program's feasibility, acceptability, and initial impact on teachers' outcomes.

## Phase 2 of program development

### Method

#### Participants

Twenty-one Portuguese elementary-school teachers ( $M = 49.00$  years,  $SD = 6.44$ , age range: 37–60 years, 90.5 % female) participated in this study. Teachers had a mean of 12.76 ( $SD = 6.97$ ) years of teaching experience and 52.40 % held a pre-Bologna 5-year Bachelor's degree. Prior to this study, 52.38 % of the teachers had never attended a SEL intervention for themselves or their students. Teachers worked in a school cluster from the Lisbon Metropolitan Area. These 21 teachers did not participate in Phase 1's focus group.

#### Measures

**A+ program's efficacy.** We used Portuguese adaptations of the following measures. Perceived affect was assessed with the *Positive and Negative Affect Schedule* scales (Positive affect, 10 items,  $\omega_{T1} = .79$ ,  $\omega_{T2} = .81$ ; and Negative affect, 10 items,  $\omega_{T1} = .90$ ,  $\omega_{T2} = .83$ ; Watson et al., 1988). Items (e.g., "Excited") were rated over a two-week period on a 5-point scale (from 1 – *Very slightly or not at all* to 5 – *Extremely*).

The *Social and Emotional Competence Assessment Battery for Adults - General Survey* (Oliveira et al., 2023) evaluated teachers' SEC. This measure includes 37 items, and assesses the five-core dimensions of SEC: Self-awareness (7 items,  $\omega_{T1/T2} = .83$ ), Self-regulation (8 items,  $\omega_{T1} = .90$ ,  $\omega_{T2} = .83$ ), Positive relationship (8 items,  $\omega_{T1} = .77$ ,  $\omega_{T2} = .76$ ), Conflict management (8 items,  $\omega_{T1} = .71$ ,  $\omega_{T2} = .83$ ), and Responsible decision-making (6 items;  $\omega_{T1} = .56$ ,  $\omega_{T2} = .74$ ). Items (e.g., "I am capable of regulating my emotions effectively.") were rated on a 5-point scale (from 1 – *Never or hardly ever* to 5 – *Almost always or always*).

The *Mental Health Continuum - Short Form* (Keyes et al., 2008) measured teachers' well-being (14 items,  $\omega_{T1/T2} = .88$ ). Items (e.g., "How often have you felt happy?") were rated over the previous month on a 6-point scale (from 0 – *Never* to 5 – *Every day*).

Burnout symptoms were assessed using the three scales of the *Maslach's Burnout Inventory - Educators Survey* (Maslach et al., 1996): Emotional exhaustion (9 items,  $\omega_{T1} = .90$ ,  $\omega_{T2} = .92$ ), Depersonalization (4 items,  $\omega_{T1} = .70$ ,  $\omega_{T2} = .81$ ), and Reduced personal accomplishment (8 items,  $\omega_{T1} = .56$ ,  $\omega_{T2} = .84$ ). Depersonalization was assessed with four items, excluding item number 5 (i.e., "I feel I treat some students as if they were impersonal objects") to ensure reliability of the subscale. Items (e.g., "I feel emotionally drained by my work.") were rated on a 7-point scale (from 0 – *Never* to 6 – *Every day*).

**Quality of intervention implementation.** The intervention's implementation quality was assessed using a *Synchronous Sessions Observation Grid* (SSOG; developed for this study) by two trained independent observers. The SSOG followed Berkel et al.'s (2011) model and evaluated the facilitator's behavior [i.e., fidelity, quality (clinical process skills and use of interactive teaching methods), and adaptation] and participants' active participation. Items regarding fidelity, clinical process skills, and active participation were rated on a 5-point scale (from 1 – *Nothing/None* to 5 – *Very much/All*). Interactive teaching methods and adaptation items were rated on a dichotomous scale (0 – *No*, 1 – *Yes*). Inter-rater reliability

was assessed using the two-way mixed effects Intraclass Correlation Coefficient (ICC; absolute agreement) which showed excellent reliability (ICC = 0.99, 95 % CI [0.98, 0.99]). The SSOG is available in the [supplementary material](#) (Table S4).

Additionally, teachers completed a post-test *Satisfaction questionnaire* assessing facilitator fidelity and clinical process skills (rated on a 4-point scale ranging from 1 – *None/Not at all* to 4 – *Completely*) and overall satisfaction with the training course (rated on a 5-point scale ranging from 1 – *Not at all satisfied* to 5 – *Totally satisfied*) (Berkel et al., 2011). The *Satisfaction questionnaire* ended with an open-ended section for teachers' feedback and suggestions for improvement. Attendance was measured in hours (up to 25 hours per teacher), using Zoom records, which logged participant activity, including login and logout times. Teachers were required to keep their cameras on during sessions to ensure active participation and engagement, further enhancing the accuracy of the data.

#### Procedures

The study was approved by the Scientific and Ethical Council of FPUL and authorized by the school principal. We used a convenience sample, with teachers self-selecting into the study. We ensured participants' informed consent, voluntary participation, confidentiality and anonymity. A statement encouraging honesty was included at the beginning of the data collection protocol to reduce social desirability bias. Only elementary-school teachers actively teaching a class were eligible (total of 23 eligible teachers in the school cluster). Data was collected online pre- and post-intervention via *Qualtrics* (average response time was 15 minutes). A certified instructor, an expert in Educational Psychology, delivered all the training sessions.

#### Analytic strategy

We evaluated internal consistency using coefficient omega ( $\omega$ ). Measures were considered adequate for values above 0.50, and good for scores equal to or above 0.70 (Crutzen & Peters, 2017). Due to the sample size, we performed robust linear mixed effects models with 95 % confidence intervals (CI) and bootstrap estimates to test the intervention effects on dependent variables. We implemented a random intercepts-only model, with time as the single covariate. The model accounted for repeated measures nested within teachers (level-2 clusters) and repeated measures (level-1). The Holm-Bonferroni method was applied to control the family-wise error rate for multiple comparisons. We measured effect sizes using Cohen's  $f$  ( $f^2$ ), with cut-off values of 0.10, 0.30, and 0.50 indicating small, moderate, and large effects, respectively. Estimates were considered significant at 0.05 when the 95 % bootstrapped CI did not include 0. All analyses were computed using the R environment software (version R 4.2.0; R Core Team, 2022). For the intervention's quality of implementation, we computed univariate descriptive statistics (mean and standard deviation) for both total (i.e., average rating across all seven training sessions) and partial (i.e., average evaluation within each program component sessions) indicators. We systematized qualitative data from the open-ended question using inductive content analysis (Bardin, 1977) with NVivo 12 software. The *corpus* consisted of the open-ended responses from the 21 teachers enrolled in Phase 2. We followed the same principles and assumptions from Phase 1 to code the recording units and identify key themes in the teachers' feedback.

## Results and discussion of phase 2

### Intervention outcomes

Results showed a statistically significant increase in teachers' perceived positive affect, responsible decision-making skills, and well-being at post-test, with large effect sizes ( $f^2 > 0.30$ ; see Table 2). Teachers also showed statistically significant decreases in perceived negative affect and conflict management, both with large effect sizes ( $f^2 > 0.30$ ), and in positive relationship skills with a medium effect size ( $f^2$

**Table 2**

Means, Standard Deviations, and Robust Linear Mixed-effects Models' Results of Teacher Self-Report of Affect, Emotion Regulation, Social and Emotional Competencies, Well-being, and Burnout at pretest and posttest (N = 21).

	<i>M (SD)</i>		Robust Linear Mixed-effects Models				
	Pretest	Posttest	<i>B</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>f</i> <sup>2</sup>
<b>Perceived affect</b>							
Positive affect	3.11 (0.60)	3.42 (0.52)	0.29	0.10	[0.09, 0.48]	.010	0.50
Negative affect	2.06 (0.82)	1.70 (0.55)	−0.32	0.10	[−0.51, −0.12]	.004	−0.44
<b>Social and Emotional Competence</b>							
Self-awareness	3.99 (0.53)	4.10 (0.52)	0.11	0.11	[−0.10, 0.32]	.303	0.21
Self-regulation	3.38 (0.67)	3.47 (0.56)	0.08	0.06	[−0.05, 0.20]	.233	0.12
Conflict management	3.82 (0.51)	3.33 (0.45)	−0.49	0.06	[−0.62, −0.37]	.000	−0.93
Positive relationship	3.92 (0.50)	3.80 (0.49)	−0.13	0.06	[−0.25, −0.01]	.043	−0.27
Responsible decision-making	3.72 (0.57)	3.90 (0.45)	0.16	0.06	[0.04, 0.28]	.017	0.31
<b>Well-being</b>	3.01 (0.84)	3.28 (0.71)	0.26	0.11	[0.05, 0.48]	.028	0.34
<b>Burnout</b>							
Emotional exhaustion	2.86 (1.48)	3.08 (1.41)	0.23	0.17	[−0.10, 0.56]	.191	0.16
Depersonalization	0.85 (0.93)	0.65 (0.95)	−0.22	0.14	[−0.50, 0.05]	.122	−0.12
Reduced personal accomplishment	1.24 (0.65)	1.10 (0.76)	−0.18	0.11	[−0.39, 0.03]	.110	−0.25

= −0.27). Despite a perceived decrease in interpersonal SEC, this could reflect a more accurate evaluation of competence, with teachers becoming more aware of different forms of communication, collaboration, and conflict management. This unexpected finding highlights the need to reassess these modules (e.g., by including more practical exercises with feedback and reflection moments) to equip teachers with the tools and build their confidence in using them. Self-awareness, self-regulation and burnout symptoms did not show significant differences at post-test. However, the medium effect sizes for these variables ( $0.12 < f^2 < 0.25$ ) suggest practical relevance, particularly for longer-term interventions or larger sample sizes. For non-significant variables, the means followed the desired trends: self-awareness and self-regulation showed slight increases, while depersonalization and reduced personal accomplishment showed slight decreases. However, emotional exhaustion unexpectedly increased. This suggests that although the effects were not large enough to reach statistical significance, the direction of change was mostly consistent with the intended outcomes.

#### Quality of the intervention's implementation

Both independent observers and participants positively evaluated the facilitator and teachers' behavior (see Table 3). However, according to the independent observers, the scores for fidelity and clinical process skills were relatively lower for the Personal organization and time management and Conscious communication modules. These modules also required more adaptations. Teachers' responsiveness was notably lower in the Personal organization and time management module.

Following Berkel et al.'s (2011) model, our findings on both the facilitator and teachers' behavior underline the importance of quality implementation in program planning to enhance efficacy. The lower responsiveness in the first module may indicate teachers' initial struggles in interacting with the facilitator. Therefore, further investment in initial icebreaker activities could be advantageous. The Personal organization and time management and Conscious communication modules represent the beginning of a new stage in the A+ program (i.e., intra-personal and interpersonal SEC), potentially leading to session management challenges. It is recommended to revise the session plans to incorporate additional buffer time between activities, allowing for changes if needed without compromising fidelity and clinical process skills.

#### Participant satisfaction

The teachers attended most of the A+ program (averaging 23 out of 25 hours; min. = 20.5 hours, max. = 25 hours), and expressed high satisfaction (4.86 out of 5.00). The analysis of the open-ended question reinforced their satisfaction with the training course (e.g., «*Outstanding training course.*» [P04], «*Exceeded my expectations.*» [P14]). Nevertheless, teachers suggested improvements in the program's duration, use of active moments, and participants' speaking time. Recommendations included decreasing the number of hours per session by increasing the number of sessions and spreading them out over a longer period (e.g., «*(...) to dilute the training hours into more sessions.*» [P01]). The teachers also suggested incorporating more practical, group-based activities

**Table 3**

Mean and Standard Deviation for the Dimensions of Program Implementation Quality in Accordance with the Integrated Model of Program Implementation by Berkel et al. (2011).

	Facilitator Behaviors				Participant Behaviors		
	Fidelity	Quality		Adaptation	Responsiveness		
		Interactive Teaching Methods	Clinical Process		Active Participation	Satisfaction	Attendance
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
<b>Observers' evaluation</b>							
Total	4.86 (0.28)	1.00 (0.00)	4.81 (0.24)	0.21 (0.39)	4.79 (0.39)	-	-
Personal organization and time management	4.63 (0.53)	1.00 (0.00)	4.58 (0.35)	0.50 (0.71)	4.23 (0.35)	-	-
Emotional awareness and regulation	5.00 (0.00)	1.00 (0.00)	4.83 (0.00)	0.00 (0.00)	5.00 (0.00)	-	-
Conscious communication	4.75 (0.00)	1.00 (0.00)	4.67 (0.00)	0.50 (0.00)	5.00 (0.00)	-	-
Conflict management	5.00 (0.00)	1.00 (0.00)	5.00 (0.00)	0.00 (0.00)	5.00 (0.00)	-	-
Personal leadership	5.00 (0.00)	1.00 (0.00)	5.00 (0.00)	0.00 (0.00)	5.00 (0.00)	-	-
<b>Participants' evaluation (total)</b>	4.00 (0.00)	-	3.97 (0.10)	-	-	4.86 (0.36)	23.19 (1.51)

*Note.* Concerning the observers' evaluation, rating scales ranged from: 1–5 with regards to Fidelity, Clinical process, and Active participation; and 0 (i.e., absence) to 1 (i.e., presence) with regards to Interactive teaching methods and Adaptation indicators. Concerning the participants' evaluation, rating scales ranged from: 1–4 with regards to Fidelity and Clinical process; 1–5 with regards to Satisfaction; and 0–25 (training hours) with regard to the Attendance indicator.

throughout the training course (e.g., «(...) to perform more practical exercises, namely about self-regulation strategies.» [P07]). Finally, teachers suggested improving the management of participants' speaking time (e.g., «It was unfortunate that not all the participants interacted during the training sessions.» [P05]). Overall, teachers' feedback aligns with other findings, leading to adjustments in some sessions' content and activities, along with recommendations for the program's duration, which were included in the manual for the final version of the A+. Despite the suggestions and constructive reviews, the overall evaluation of the A+ revealed high interest and satisfaction with the proposed content and procedures, thus validating the program.

## General discussion

This paper outlined the design of the A+ program, an online intervention to promote Portuguese elementary-school teachers' SEC. Phase 1 depicted teachers' needs and interest in participating in a SEL intervention, while Phase 2 assessed the feasibility and acceptability of a pilot version of the A+ and provided initial evidence on its impact.

In Phase 1, teachers identified social and emotional aspects as primarily work-related demands and resources. Evidence revealed a misalignment and imbalance between professional demands and resources. The results also suggested that the most frequently identified job demands were job hindrances (i.e., role conflict and ambiguity, interpersonal conflicts, distancing from superiors, negative spillover, and excessive workload; Broeck et al., 2010). These particular demands refer to job requirements that interfere with achieving professional goals and hinder optimal functioning, leading to feelings of lack of control and negative emotions. Job hindrances threaten teachers' energy and well-being, typically requiring coping strategies focused on emotional regulation (Broeck et al., 2010). Complementarily, the main needs identified at the personal level were the development of emotional regulation and time management skills, reinforcing the importance of intrapersonal competencies and the need for resources to help teachers address the identified job demands. In terms of perceived resources, social support was particularly emphasized, highlighting the role of organizational climate and group belonging (Collie, 2020; Collie et al., 2012; Ryan & Deci, 2017). Developing interpersonal competencies, particularly social awareness and interpersonal relationship skills, could help teachers address unmet needs for autonomy, clarity, access to information, and feedback. The findings also emphasized the interdependence of personal resources and work/social environments, reinforcing the importance for a systemic approach in SEL interventions for teachers. Moreover, in line with international literature (Schonert-Reichl, 2017), the findings highlighted the absence of explicit SEL opportunities in Portuguese elementary-school teachers' pre-service and in-service training, particularly targeting teachers' own (intrapersonal) SEC. The teachers expressed enthusiasm about participating in a SEL intervention tailored to their needs. These results underlined the relevance of the A+ program and guided the development of the pilot version tested in Phase 2 using a pre-posttest design.

Building on these findings, the A+ program design underscored the critical need to address the misalignment between professional demands and the job and personal resources available to teachers. To bridge this gap, we made two pivotal decisions. First, the intervention content was grounded in stress-generating situations identified by teachers, with SEC (i.e., self- and social awareness, self-regulation, relationship skills, responsible decision-making) contextualized to help teachers effectively manage job demands at the systems levels (e.g., workload, interpersonal conflicts, lack of social support). We decided to situate the intervention within school clusters and incorporate group activities explicitly designed to promote job resources by fostering social support networks and enhancing group cohesion. This dual focus aligns with the JD-R model, emphasizing the interplay between personal and job resources and highlighting the potential of integrated, systemic SEL interventions to effectively enhance teacher well-being and occupational health.

Phase 2 results provide promising evidence that the A+ program may be effectively tackle teachers' social and emotional needs. Post-intervention, teachers reported higher levels of positive affect, responsible decision-making skills and well-being, as well as a reduction in negative affect. However, there appears to be a need to strengthen A+ content related to interpersonal SEC, based on the unexpected decrease in perceived conflict management and positive relationship skills. The absence of significant changes in self-awareness, self-regulation and burnout symptoms may stem from the insufficient duration and dosage of the A+ program, as well as potential delayed effects. We observed medium effect sizes in the expected direction for these variables. SEL interventions often require time for participants to internalize and apply the learned strategies (Durlak et al., 2015; Iancu et al., 2018; Oliveira et al., 2021a). Moreover, particularly for burnout indicators, reductions may not be immediately observable but could manifest gradually, as burnout is typically a process rather than an immediate outcome (Leiter & Maslach, 2014; Maslach & Leiter, 2016). The exception to this was emotional exhaustion, which, despite non-significant, increased at post-test. However, as job demands and distress among teachers typically increase over the course of the school year (von der Embse & Mankin, 2021), additional data would be necessary to draw definitive conclusions. Overall, extending the A+ program's duration and dosage could provide teachers with more consistent training opportunities for skill acquisition. Despite these promising findings, the absence of a control group and random assignment limits the ability to differentiate between the intervention's effects and other influencing factors. This warrants careful interpretation of the results. High responsiveness, attendance, and satisfaction are positive indicators of the A+ program's social validity and suggest future participants' adherence and responsiveness. Unexpected findings related to interpersonal SEC, along with insights on the intervention's implementation quality and teachers' feedback, informed adjustments leading to the final version of the program. Taken together, the preliminary results from the piloting of the A+ program encourage further robust studies to assess its efficacy and effects, thus narrowing the gaps identified in both research and practice.

## Limitations and future studies

While our results suggest the relevance, efficacy, and social validity of the A+ program, several limitations warrant consideration. Despite contributing to ecological validity, the geographically circumscribed and non-randomized sample limits the generalizability of the findings. Since this was a preliminary study, the generalization of the findings was not our primary focus. However, future research should aim to replicate these findings with a representative group of teachers. The use of frequency analysis for qualitative data interpretation in Phase 1 may have overstated recurring responses from participants, potentially making certain viewpoints appear more prevalent than they actually are. Additionally, the possibility that teachers withheld opinions for fear of them being inappropriate or unpopular cannot be excluded. Nevertheless, precautions were taken to minimize bias: teachers met the moderator in a neutral setting before the focus group, were invited to arrive early, were welcomed with a snack to acclimatize, and were grouped within the same school cluster so that they were already familiar with each other. School coordinators and board members were excluded from the groups; Counterarguments were presented throughout the process to avoid polarizing effects and to ensure the inclusion of diverse perspectives. Furthermore, the between-group comparisons were not statistical but rather qualitatively derived descriptions. In Phase 2, a small, non-probabilistic and self-selected sample was used, which may have introduced sampling bias and reduced the statistical power of the analysis. After excluding teachers who did not meet the eligibility criteria, and ensuring voluntary participation, 21 out of 23 eligible teachers enrolled in the A+ program (91.30 %). The pilot study lacked a control group, a follow-up assessment and relied solely on

self-report measures. The decision to exclude a control group was based on ethical concerns, as the school board could not support a second intervention for the control group after completion of the data collection. Due to the perceived importance of contextual factors, including a control group from outside the specific setting did not seem appropriate. Thus, future research on the A+ program's efficacy should use different data collection methods and longitudinal designs to assess time stability and sleeper effects. An active control group should also be considered to mitigate potential Hawthorne effects. Lastly, despite presenting an adequate omega (Crutzen & Peters, 2017), the scales regarding Responsible decision-making and Reduced personal accomplishment showed a lower omega coefficient at pretest. As in prior studies (e.g., Garden, 1987; Oliveira et al., 2021b), the depersonalization scale exhibited reliability issues, necessitating the removal of one of the original items. This subscale has shown reliability problems in various studies (e.g., Oliveira et al., 2021b), often attributed to its short length, cultural and occupational variability, and potential social desirability bias (e.g., Garden, 1987). As the items of the depersonalization subscale describe negative reactions to people, including hostility, indifference, detachment, and not caring about others, teachers may underreport such behaviors. These validity issues may have been more pronounced due to the small sample size (Kline, 2000), warranting caution when interpreting the findings.

### Study impact

Despite its limitations, this study contributes to the field by providing the first theoretically and empirically grounded online SEL intervention for Portuguese elementary-school teachers. Thus, our research offers key insights for researchers and practitioners aiming to enhance teachers' occupational health through SEL. First, this study highlights the importance of developing SEL interventions tailored to teachers' own SEC by mapping their main work-related strains and acknowledging the lack of opportunities for teachers to develop job and personal resources to mitigate those strains. It offers a structured framework for designing SEL interventions focused on teachers' work-related challenges, which could serve as a model for future interventions in similar educational contexts. Second, by actively engaging teachers in the intervention development process, our findings underscore the significance of participatory approaches in enhancing participants' responsiveness and adherence, which in turn may impact the program's efficacy (Berkel et al., 2011). These insights can inform policymakers and educational leaders seeking to implement sustainable professional development initiatives. Third, this research contributes to the literature by demonstrating how ecological validity and the consideration of specific cultural and contextual features in designing interventions, content, and activities can enhance the effectiveness of SEL programs. Future studies can build on these principles to adapt similar programs across diverse educational settings. Overall, this study lays the groundwork for further exploration of SEL interventions in teacher training, with implications for improving teachers' occupational health and well-being.

### CRedit authorship contribution statement

**Alexandra Marques-Pinto:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Ana Margarida Veiga-Simão:** Supervision, Conceptualization. **Magda Sofia Roberto:** Writing – review & editing, Supervision, Methodology. **Mariana Oliveira Martins:** Data curation. **Andreia Cardoso:** Formal analysis, Data curation. **Sofia Oliveira:** Project administration, Writing – review & editing, Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

### Author contributions

SO designed and executed the study, collected and analyzed the data,

and wrote, edited, and revised the manuscript. AC collaborated in the data collection and data analysis of Phase 1. MOM collaborated in the data collection of Phase 2. MSR assisted the design of the study and the data analyses, and collaborated in the editing and revision of the final manuscript. AMV-S assisted the design and execution of the study, and collaborated in the editing of the final manuscript. AM-P assisted the design, execution, and theoretical grounding of the study, and collaborated in the writing, editing and revision of the final manuscript. All authors approved the final version of the manuscript for submission.

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### Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this paper, the authors used ChatGPT to rephrase sentences for conciseness and to enhance readability. After using this tool, the authors reviewed and edited the content as necessary and take full responsibility for the content of the publication.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.sel.2025.100118](https://doi.org/10.1016/j.sel.2025.100118).

### Data availability

The datasets generated for this study and the codebooks which underlie the analyses can be found in the *Open Science Framework* repository at Oliveira, S. et al. Datasets of the paper "Bridging the gap in teacher SEL training: Designing and piloting an online SEL intervention with and for teachers". OSF, 15 May 2025. Web. <https://doi.org/10.17605/OSF.IO/W2H3S>

### References

- Alves, R., Lopes, T., & Precioso, J. (2021). Teachers' well-being in times of Covid-19 pandemic: Factors that explain professional well-being. *International Journal for Innovation Education and Research*, 15, 203–217. <https://doi.org/10.46661/ijeri.5120>
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement particularly when job demands are high. *Journal of Educational Psychology*, 99(2), 274–284. <https://doi.org/10.1037/0022-0663.99.2.274>
- Bardin, L. (1977). *Análise de conteúdo* [Content Analysis]. Edições 70.
- Beatty, L., & Binnion, C. (2016). A systematic review of predictors of, and reasons for, adherence to online psychological interventions. *International Journal of Behavioral Medicine*, 23, 776–794. <https://doi.org/10.1007/s12529-016-9556-9>

- Berkel, C., Mauricio, A. M., Schoenfelder, E., & Sandler, I. N. (2011). Putting the pieces together: An integrated model of program implementation. *Prevention Science*, 12, 23–33. <https://doi.org/10.1007/s11211-010-0186-1>
- Carvalho, J. S., Oliveira, S., Roberto, M. S., Gonçalves, C., Bárbara, J. M., de Castro, A. F., Pereira, R., Franco, M., Cadima, J., Leal, T., Lemos, M. S., & Marques-Pinto, A. (2021). Effects of a mindfulness-based intervention for teachers: A study on teacher and student outcomes. *Mindfulness*, 12, 1719–1732. <https://doi.org/10.1007/s12671-021-01635-3>
- Collie, R. J. (2020). The development of social and emotional competence at school: An integrated model. *International Journal of Behavioral Development*, 44, 76–87. <https://doi.org/10.1177/0165025419851864>
- Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, 104(4), 1189–1204. <https://doi.org/10.1037/a0029356>
- Crain, T. L., Schonert-Reichl, K. A., & Roeser, R. W. (2017). Cultivating teacher mindfulness: Effects of a randomized controlled trial on work, home, and sleep outcomes. *Journal of Occupational Health Psychology*, 22(2), 138–152. <https://doi.org/10.1037/ocp0000043>
- Crutzen, R., & Peters, G. Y. (2017). Scale quality: Alpha is an inadequate estimate and factor-analytic evidence is needed first of all. *Health Psychology Review*, 11(3), 242–247. <https://doi.org/10.1080/17437199.2015.1124240>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>
- von der Embse, N., & Mankin, A. (2021). Changes in teacher stress and wellbeing throughout the academic year. *Journal of Applied School Psychology*, 37, 165–184. <https://doi.org/10.1080/15377903.2020.1804031>
- Dicke, T., Stebner, F., Linninger, C., Kunter, M., & Leutner, D. (2018). A longitudinal study of teachers' occupational well-being: Applying the job demands-resources model. *Journal of Occupational Health Psychology*, 23(2), 262–277. <https://doi.org/10.1037/ocp0000070>
- Durlak, J. A., Domitrovich, C. E., Weissberg, R. P., & Gulotta, T. P. (2015). *Handbook of social and emotional learning: Research and practice* (First ed.). Guilford Publications.
- Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills of children and adolescents. *American Journal of Community Psychology*, 45, 294–309. <https://doi.org/10.1007/s10464-010-9300-6>
- Fernández-Ballesteros, R. (1996). Evaluación de programas: Un guía práctica en ámbitos sociales, educativos y de salud. *Síntesis Psicología*.
- Fox, K. E., Johnson, S. T., Berkman, L. F., Sianoja, M., Soh, Y., Kubzansky, L. D., & Kelly, E. L. (2022). Organisational- and group-level workplace interventions and their effect on multiple domains of worker well-being: A systematic review. *Work Stress*, 36, 30–59. <https://doi.org/10.1080/02678373.2021.1969476>
- Garden, A. M. (1987). Depersonalization: A valid dimension of burnout? *Human Relations*, 40(9), 545–559. <https://doi.org/10.1177/001872678704000901>
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495–513. <https://doi.org/10.1016/j.jsp.2005.11.001>
- Hofmann, J. (2014). *Solutions to the top 10 challenges of blended learning*. InSync Training, LLC. (<https://static1.squarespace.com/static/5c2e89bcf407b45dccc793138/t/5c881dedc83025>).
- Horgan, D. (2017). Child participatory research methods: Attempts to go 'deeper'. *Childhood*, 24(2), 245–259. <https://doi.org/10.1177/0907568216647787>
- Iancu, A. E., Rusu, A., Măroiu, C., Păcurar, R., & Maricuțoiu, L. P. (2018). The effectiveness of interventions aimed at reducing teacher burnout: A meta-analysis. *Educational Psychology Review*, 30(2), 373–396. <https://doi.org/10.1007/s10648-017-9420-8>
- Jennings, P. A., Brown, J. L., Frank, J. L., Doyle, S., Oh, Y., Davis, R., Rasheed, D., DeWeese, A., DeMauro, A. A., Cham, H., & Greenberg, M. T. (2017). Impacts of the CARE for teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Educational Psychology*, 109, 1010–1028. <https://doi.org/10.1037/edu0000187>
- Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, 79, 491–525. <https://doi.org/10.3102/0034654308325693>
- Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum Short Form (MHC-SF) in Setswana speaking 15/24 South Africans. *Clinical Psychology and Psychotherapy*, 15, 181–192. <https://doi.org/10.1002/cpp.572>
- Kintu, M. J., Zhu, C., & Kagambe, E. (2017). Blended learning effectiveness: The relationship between student characteristics, design features and outcomes. Article 7 *International Journal of Educational Technology in Higher Education*, 14. <https://doi.org/10.1186/s41239-017-0043-4>
- Kline, R. B. (2000). *Beyond significance testing: reforming data analysis methods in behavioural research*. American Psychological Association.
- Krueger, R. A., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (Fourth ed.). Sage Publishing House.
- Kyriacou, C. (2011). Teacher stress: from prevalence to resilience. In J. Langan-Fox, & C. L. Cooper (Eds.), *Handbook of stress in the occupations* (pp. 161–173). Edward Elgar Publishing. <https://doi.org/10.4337/9780857931153.00027>
- Lau, S., & Stille, S. (2014). Participatory research with teachers: Toward a pragmatic and dynamic view of equity and parity in research relationships. *European Journal of Teacher Education*, 37(2), 156–170. <https://doi.org/10.1080/02619768.2014.882313>
- Leiter, M. P., & Maslach, C. (2014). Interventions to prevent and alleviate burnout. In M. P. Leiter, A. B. Bakker, & C. Maslach (Eds.), *Burnout at work: A psychological perspective* (pp. 145–167). Psychology Press.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory manual* (Third ed.). Consulting Psychologists Press.
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: Recent research and its implications for psychiatry. *World Psychiatry*, 15(2), 103–111. <https://doi.org/10.1002/wps.20311>
- McCarthy, C. J., Lambert, R. G., Lineback, S., Fitchett, P., & Baddouh, P. G. (2016). Assessing teacher appraisals and stress in the classroom: Review of the classroom appraisal of resources and demands. *Educational Psychology Review*, 28(3), 577–603. <https://doi.org/10.1007/s10648-015-9322-6>
- Oliveira, S., Roberto, M. S., Pereira, N., Marques-Pinto, A., & Veiga-Simão, A. M. (2021a). Impacts of social and emotional learning interventions for teachers on teachers' outcomes: A systematic review with meta-analysis. *Frontiers in Psychology*, 12, Article 677217. <https://doi.org/10.3389/fpsyg.2021.677217>
- Oliveira, S., Roberto, M. S., Veiga-Simão, A. M., & Marques-Pinto, A. (2021b). A meta-analysis of the impact of social and emotional learning interventions on teachers' burnout symptoms. *Educational Psychology Review*, 33, 1779–1808. <https://doi.org/10.1007/s10648-021-09612-x>
- Oliveira, S., Roberto, M. S., Veiga-Simão, A. M., & Marques-Pinto, A. (2023). Development of the Social and Emotional Competence Assessment Battery for Adults (SECAB-A). *Assessment*, 30(6), 1848–1869. <https://doi.org/10.1177/10731911221127922>
- Portuguese Psychologists Association. (2020). *Prosperidade e sustentabilidade das organizações. Relatório do custo do stress e dos problemas de saúde psicológica no trabalho em Portugal. Ordem dos Psicólogos Portugueses*.
- R Core Team. (2022). R: A language and environment for statistical computing [Computer software]. R Foundation for Statistical Computing. (<https://www.R-project.org/>).
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: basic psychological needs in motivation, development, and wellness*. Guilford Press.
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293–315. <https://doi.org/10.1002/job.248>
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: implications for improving work and health. In G. F. Bauer, & O. Hämmig (Eds.), *Bridging occupational, organizational and public health: A transdisciplinary approach* (pp. 43–68). Springer. [https://doi.org/10.1007/978-94-007-5640-3\\_4](https://doi.org/10.1007/978-94-007-5640-3_4)
- Schonert-Reichl, K. A. (2017). Social and emotional learning and teachers. *Future Child*, 27, 137–155. <https://doi.org/10.1353/foc.2017.0007>
- Simbula, S., Guglielmi, D., & Schaufeli, W. B. (2011). A three-wave study of job resources, self-efficacy, and work engagement among Italian schoolteachers. *European Journal of Work and Organizational Psychology*, 20(3), 285–304. <https://doi.org/10.1080/13594320903513916>
- Sokal, L., Trudel, L. E., & Babb, J. (2020). Supporting teachers in times of change: The job demands-resources model and teacher burnout during the COVID-19 pandemic. *International Journal of Contemporary Education*, 2(3), 67–74. <https://doi.org/10.11114/ijce.v3i2.4931>
- Taris, T. W., Leisink, P. L., & Schaufeli, W. B. (2017). Applying occupational health theories to educator stress: contribution of the job demands-resources model. In T. McIntyre, S. McIntyre, & D. Francis (Eds.), *Educator stress: Aligning perspectives on health, safety and well-being* (First Ed., pp. 237–259). Springer. [https://doi.org/10.1007/978-3-319-53053-6\\_11](https://doi.org/10.1007/978-3-319-53053-6_11)
- Trinidad, J. E. (2021). Teacher satisfaction and burnout during COVID-19: what organizational factors help? *International Journal of Leadership in Education*. <https://doi.org/10.1080/13603124.2021.2006795>
- Van den Broeck, A., De Cuyper, N., De Witte, H., & Vansteenkiste, M. (2010). Not all job demands are equal: Differentiating job hindrances and job challenges in the Job Demands-Resources model. *European Journal of Work and Organizational Psychology*, 19(6), 735–759. <https://doi.org/10.1080/13594320903223839>
- Viac, C., & Fraser, P. (2020). Teachers' well-being: A framework for data collection and analysis. *Organization for Economy Co-operation and Development*. <https://doi.org/10.1787/c36fc9d3-en>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070. <https://doi.org/10.1037/0022-3514.54.6.1063>