Narrative review

Review of the effects of social and emotional learning on mental health and academic outcomes: The role of teacher training and supportive interactions

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ABSTRACT

Child and youth mental health in France has become an important public health priority. Social and emotional learning has been shown to contribute to mental health in children and adolescents. Therefore, an increasing number of interventions are being proposed in schools. However, teachers are not yet trained to develop these competencies through evidence-based interventions during their initial training. One way of increasing motivation and investment in teacher training in social and emotional learning is to increase awareness of the effects on academic outcomes. The aim of this scoping review based on systematic reviews and meta-analyses is to present the effectiveness of school-based social and emotional learning programs on mental health and academic success, while specifying the contributing processes such as motivation, teacher training, and student support. The discussion section suggests several avenues to promote the development of psychosocial competencies in school settings, notably based on teacher training.

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1. Introduction

The promotion of student health is now part of educational guidelines in many countries, notably in France with the development of the health education pathway (Ministère de l'Education [1]). With the aim of promoting the mental health of children and young people, the development of psychosocial competencies has been identified as a relevant lever by the World Health Organization [2]. These competencies are defined by the World Health Organization as: "a group of psychosocial and interpersonal competencies that help people make informed decisions, solve problems, think critically and creatively, communicate effectively, build healthy relationships, empathize with others, cope with difficulties and manage their lives in healthy and productive ways" [3].

Psychosocial competencies have been shown to contribute to mental health in children and adolescents [4]. Therefore, an increasing number of interventions are being proposed in schools. However, teachers are not yet trained in France to develop these competencies,

notably through evidence-based interventions or programs such as Emotimat in pre-schools [5], Good Behavior Game in primary schools [6], or Unplugged in secondary schools [7]. One way of increasing motivation and investment in teacher training in social and emotional learning could be to increase awareness of the effects on academic outcomes. The aim of this scoping review, based on systematic reviews and meta-analyses, is to present the effectiveness of school-based social and emotional learning programs, in students aged 3 to 18, on mental health and academic outcomes. The secondary aim is to identify specific processes that contribute to the effectiveness of such interventions related to student motivation, student-teacher relationships, and teacher training.

2. Effectiveness of programs on mental health and academic results

To carry out this scoping review, we searched through Pubmed and Psycinfo in December 2023 using the terms psychosocial competences, psychosocial skills, social and emotional learning, social and emotional skills, combined with the terms review and meta-analysis, and with the term teachers. We selected the reviews and meta-

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analyses that focused on classroom-based teacher-led programs, and which were most generic and included the largest samples in order to be able to present a synthesis of the main findings in this field, from preschool to high school, regarding the effectiveness of classroom-based programs.

As evidenced by the most recent meta-analysis, there is a wealth of research evaluating the effectiveness of programs aimed at developing psychosocial competencies in the school setting from preschool to high school, as this meta-analysis eviewed the results of 424 studies carried out in 53 countries, including more than 575,361 students, published between 2008 and 2020 [4]. These programs generally consist of weekly workshops lasting an hour or two and running for several weeks. Each workshop takes the form of a succession of activities designed to develop a psychosocial skill or sub-skill in an organized, experiential way, using different pedagogical modalities: sharing experiences, simulations or role-playing. In the Emotimat program for example, preschool students learn to identify and label emotions [5].

The results of the meta-analyses found when carrying out this scoping review show that, from kindergarten to high school, structured programs aimed at developing psychosocial competencies have a significant positive effect on these competencies, as well as on reduced mental health problems, reduced risk behaviors, along with improved relationship quality and academic success, with small to moderate effect sizes [4,8−11]. These effects are maintained over time with effect sizes ranging from small to moderate as well [4,9].

Meta-analyses have shown that psychosocial competencies development programs lead to beneficial effects on several indicators involved in students' mental health: reduced symptoms of stress, anxiety and depression, reduced behavioral problems, substance use and addiction risks, as well as violence and bullying [4,8−11]. In addition, these programs promote improved self-esteem, relationships with peers and teachers, and academic success. Indicators considered to measure academic success include academic performance in the form of tests or grades, engagement indices (attendance, tardiness), and students' classroom behaviors (attention, completion of exercises). Study results indicate an improvement in these indicators for students who have followed a program, although the effect size is small.

The effectiveness of these interventions is enhanced when: (1) the teacher develops their students' psychosocial competencies within the classroom, (2) attention is paid to the school climate at the school-wide level, (3) programs include multiple components and do not target a single skill or a single way of developing it, (4) activities first develop personal skills before developing interpersonal skills, (5) the teacher integrates the development of psychosocial competencies into disciplinary teaching sequences and classroom management, and (6) the proposed activities are sequenced in such a way as to encourage the development of skills step by step, with explicit learning to foster greater awareness of the use of the skill to facilitate its subsequent use [4]. In addition, it is useful to consider that certain cultural adaptations may be necessary to promote greater effectiveness in the context of intervention implementation [11].

3. Factors promoting the development of psychosocial competencies: the role of the teacher-student relationship

For several decades, psychology researchers have highlighted the pivotal role of motivation in the acquisition of academic skills (e.g., Eccles & Wigfiled, 2002; [12]). Psychosocial competencies, like academic skills, are skills that require concrete implementation and therefore motivation to engage in these practices. Thus, student motivation plays an important role in this process to promote the effectiveness of interventions [13]. Drawing on self-determination theory [12], meeting the basic psychological needs of autonomy (i.e., feeling a player in one's learning), competence (i.e., feeling effective in one's learning), and social connectedness (i.e., receiving support

and having a sense of belonging), promotes the development of autonomous motivation towards the development of psychosocial competencies and their use in a given situation. Thus, the more a student becomes aware of the usefulness of mobilizing his or her psychosocial competencies, the more motivated they will be to use them. In addition, a perceived sense of competence in mobilizing psychosocial competencies will increase the tendency to use them. Finally, the more widespread the use of these competencies is within the school, on the part of both teachers and students, the more likely it is that they will be used, thus increasing the sense of belonging to this collective. This model has been tested empirically [14], with the results indicating that the level of perceived competence was positively associated with autonomous motivation, which in turn predicted students' prosocial behavior, as reported by their parents.

The teacher can therefore play an important role in the development of psychosocial competencies by fostering a classroom climate that meets the needs of autonomy, competence, and social proximity. Indeed, the classroom climate as a whole, affects students' psychosocial competencies. It integrates multiple dimensions encompassing pedagogical practices as well as interpersonal relations between students and with teachers. A recent review [15] highlighted three components that have been shown to have beneficial effects in large-scale international evaluations: socio-emotional support, learning support, and classroom organization. Characterized in this way, a positive classroom climate is associated with better social skills, academic success, motivation, and student engagement in learning.

From this perspective, teacher support takes the form of warm, respectful relationships, attention to students' difficulties, emotions, and needs, and a degree of flexibility to consider their point of view and state. Learning support refers to practices that stimulate learning in students, in particular, the implementation of tasks involving problem-solving, the quality of feedback given to students, as well as the deepening of knowledge and its reactivity through diversified learning modalities, and, in particular, the formulation of open-ended questions prompting feedback loops enabling reflective thinking. Classroom organization refers to teachers' ability to effectively manage learning time and student behavior, with explicit teaching of behavioral expectations, the institution of routines, and a proactive attitude to redirect inappropriate classroom behavior [15].

According to the OECD report, this type of relationship appears to be scarce in France [16]. Indeed, the survey conducted by the Program for International Student Assessment (PISA) indicates that "France is one of the countries where students feel the least support from their teachers to progress in learning" ([16], p. 1). Developing the psychosocial competencies of professionals could be one way to help improve support for students in their learning and the development of their psychosocial competencies.

Indeed, classroom management training programs have a improve the development of psychosocial competencies such as empathy, cooperation and self-regulation [17−19], and promote student engagement in learning activities, as well as academic achievement [20−22]. The positive behavior support approach to classroom management is one of these validated interventions [23]. In the French-speaking world, it was introduced by the team of Quebec researcher Steve Bissonnette [24], and between 2017 and 2019 was the subject of an experiment in France, in the Besançon academy, with encouraging results in three areas: school climate, classroom management practices, and bullying prevention [25].

Moreover, the teacher can play a role in developing these competencies through the use of specific teaching methods. Indeed, studies have sought to assess whether psychosocial competencies can be improved, not through the application of a specific program, but rather through the implementation of cooperative learning methods. This teaching method is based on interactions within small groups of 2 to 4 students during learning activities which are organized in a way that reinforces positive interdependence between students

while at the same time empowering them [26]. Positive interdependence is based on a common goal, and complementary tools, competencies or knowledge, which need to be combined in order to attain that common goal.

Syntheses and meta-analyses on cooperative learning show that it is a teaching method which increases student motivation (Johnson et al., 2014), learning [27], and a sense of social connectedness [28,29]. In addition, cooperative learning enables the development of social skills, including cognitive and affective empathy, as well as prosocial behaviors [28,29].

However, integrating cooperative pedagogy with all the principles of effectiveness in everyday teaching is a challenge for teachers [29 −33]. To support the cooperative practices that are on the rise in France [34], the introduction of mini cooperative structures could be a way forward. These mini cooperative structures consist of short, regular periods of discussion between students, with simple instructions that structure interactions in different stages. Easy to implement on a day-to-day basis, these mini cooperative structures aim to involve all students. These mini cooperative structures enable students to gain confidence in their ideas and reduce their anxiety, which in turn increases their willingness to participate in the collective [35]. With this in mind, a French-language approach is currently being developed with practical tools for introducing different mini cooperative structures into teaching to support inclusive classroom management [36].

Thus, the development of students' psychosocial competencies can be supported through two intervention modalities: direct or indirect [5]. Direct teaching concerns specific workshops on the development of psychosocial competencies, while indirect teaching is linked to classroom management practices, learning support, and pedagogical modalities used. In both cases, teachers' psychosocial competencies are a key factor in their effectiveness.

In fact, teachers' psychosocial competencies have an impact both on students' performance on complex cognitive tasks, such as mathematics and reading and on their psychosocial competencies. For example, some studies have found associations between certain teachers' psychosocial competencies, such as self-awareness, empathy, and positive communication, and the development of students' psychosocial competencies, their constructive classroom behaviors and their academic performance ([37]; Kraft, 2019). In addition, it reduces burnout and psychological distress among teachers (Collie & Perry, 2019).

In particular, training courses for teachers must enable professionals to develop their own psychosocial competencies, as this determines the effectiveness of programs implemented by teachers in their classrooms [38]. The experiential nature of training courses enabling the development of the psychosocial competencies of the professionals themselves is essential, as is the explicitness of the skills targeted by the proposed practices [11].

4. Discussion

The OECD's 2021 survey on the social and emotional competencies of students aged 10 to 15 - one of the first international data collections of students, parents and teachers on this topic - underlines the need for a holistic approach to student development that does not focus solely on disciplinary learning such as mathematics, reading or scientific literacy, but also focuses on developing essential skills, so that students can succeed at school and later in their working lives, and participate fully in society as active citizens.

Awareness of the decisive role played by psychosocial competencies in academic success is leading teachers and policymakers to pay greater attention to their development. Not only does the school institution have an essential role to play in the development of an individual's psychosocial competencies [39,40], but it can also help reduce inequalities, both in terms of academic success and civic engagement, both of which are closely dependent on the socio-

economic status of families [41]. Indeed, the family environment is an important determinant of a child's emotional, social and cognitive development. In the most disadvantaged socio-economic backgrounds, this development is negatively impacted by family difficulties, which manifests itself in the school environment through increased levels of problem behavior, and a deficit in certain psychosocial competencies such as self-control and interpersonal competencies (Lee, 2022).

Emotionally competent students benefit from better social relationships with their teachers and peers, which provides them with greater social support in stressful situations and indirectly affects their success [42,5]. Therefore, gaps in social and emotional development in early childhood have long-term negative effects on both health and educational and professional success, leading to significant socio-economic gaps throughout life, particularly for people from disadvantaged backgrounds (OECD, 2015). As work on psychosocial competencies at school is particularly favorable for students from such backgrounds, it is likely to help reduce inequalities [43], particularly if it is carried out from early childhood [44]. Thus, offering future education professionals training in the development of psychosocial competencies is a relevant course of action, both in initial and in-service training. In the latter case, it is advisable to involve the whole school in an approach aimed at improving the school climate and promoting health.

As shown through the most recent meta-analysis on social and emotional learning school-based programs including more than 420 studies among students from preschool to high school, a large number of programs aimed at developing psychosocial competencies have shown significant results on reduced mental health problems, improved classroom and school climate, as well as school success [4]. These programs have been shown to be effective on mental health promotion, as well as relationship quality, school climate and academic outcomes. It is important to note that in this scoping review, we focused specifically on the role of classroom-based teacher-led programs. However, other meta-analyses have also shown the effectiveness of other school staff training in social and emotional learning on improved psychosocial competencies, school climate and academic outcomes ([45], 2023).

Indeed, some limitations have been identified concerning only classroom-based programs when they are not based on a whole school approach. For example, one of the most internationally-validated programs for developing psychosocial competencies, Life Skills Training [46], has been shown to be highly ineffective in schools where the educational policy does not allow these skills to be implemented on a daily basis. A program of this kind is more likely to be effective in schools where the entire teaching staff is committed to promoting students' psychosocial competencies. These results encourage to direct actions towards developing these skills in a broader way, integrated into everyday classroom life, and more generally including a whole school approach which improves the school climate, as a complement to classroom-based validated programs.

In a world grappling with environmental and social problems that current solutions cannot - or no longer - address, more and more voices are calling for the exploration of ways to expand the field of the possible, rather than simply reproducing the existing possible [47]. In order to equip students, the citizens of tomorrow, to meet these complex challenges, education must also promote the development of cross-disciplinary skills such as critical thinking, imagining future scenarios, and collaborative decision-making [39], while respecting differences between individuals, taking into account scientific data, and taking care of the planet [48]. The authors of the 2021 OECD report note that the ability of citizens to adapt, to be resourceful, to respect others, and to assume personal and collective responsibilities is characteristic of a well-functioning society. They also point out that cooperation, empathy, and tolerance are essential for citizens and nations to achieve sustainable development goals, and to contribute

effectively to the development of democratic institutions. Teacher training should therefore include social and emotional learning both through initial and continuing training. Furthermore, to support a whole school dynamic regarding psychosocial competencies use and development, school directors should also be trained in order to be able to support their teachers and staff in this endeavor.

Authors contributions

All authors contributed to the literature review and writing of the different sections of the article.

Declaration of competing interest

The authors declare that they have no competing interest.

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