

Impacts of Educating for Well-being on principals, teachers and students:  
A randomized control trial of a SEL intervention for preschools in Mexico

By

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## ABSTRACT

*The widespread stress and burnout in the educational landscape, intensified by the COVID-19 pandemic's harmful impact on the mental health and well-being of educators and students, emphasize the need to provide educators and school systems with programs that are feasible, acceptable, and scalable. There is now growing consensus that these programs should aim to improve educators' social and emotional competencies, well-being, and mental health to, ultimately, promote better student outcomes. In Mexico, there is a need for quality social and emotional learning (SEL) in early childhood education. While there is evidence that this hinges on building preschool educators' socioemotional competencies and well-being, there is a gap in quality SEL professional development (PD) for these teachers and principals. Educating for Well-being is a school-wide SEL intervention that aims to improve educators' well-being and socioemotional competencies and students' socioemotional and academic outcomes. It consists of a training-based PD program for educators and a SEL curriculum for students. To evaluate the impact of the intervention, a cluster randomized control trial involving 421 preschools in the Mexican state of Sinaloa was conducted. 2,162 educators completed self-reported measures before and after the PD component, and at three and twelve-month follow-ups (four data collection points in total); and teachers completed assessments of 2,423 students before and after the implementation of the SEL curriculum. The results showed that Educating for Well-being has statistically significant positive effects on educators' self-awareness, emotion regulation, pro-sociality, self-efficacy, and psychological distress. In accordance with the intervention's theory of change, the PD program first improves educators' socioemotional competencies and then, in the medium term, increases self-efficacy and*

*reduces psychological distress. Furthermore, after one year of participating in the PD program and implementation of the SEL curriculum with students, we observed statistically significant positive changes in students' prosocial behavior and emotional regulation. Our findings suggest that intervention impacts on educators' outcomes are moderated by educator role (principal vs. teacher), school marginalization level, but not by tier of implementation. Children in schools with higher levels of marginalization may derive greater benefit from the intervention than those in schools with lower levels of marginalization.*

## INTRODUCTION

Research increasingly shows that social and emotional learning (SEL) – the process through which children develop social and emotional competency – is paramount for children's academic and life outcomes (J. a Durlak et al., 2011; OECD, 2015, 2021a). Preschool is a critical period for the development of basic social and emotional skills that act as a basis for later social and emotional competence (SEC), behavior, academic performance, and well-being (Blair & Raver, 2014; Denham & Burton, 2003; Espinet et al., 2013; Schmitt et al., 2015). It is only through quality, well-implemented SEL programs that we can expect children to gain the benefits and positive outcomes promised in the SEL literature (Buchanan et al., 2009; Dix et al., 2012; J. A. Durlak & DuPre, 2008). Educators, particularly teachers and principals, are the crux of effective SEL implementation. Educators with strong SEC, who know how to deal with stress and strengthen their well-being, are better able to build supportive relationships with students, effectively manage classroom environments, and successfully teach SEL curricula (P. A. Jennings & Greenberg, 2009; M. T. Greenberg, 2023).

Nonetheless, there are very few instances where educators are provided with the means and tools to learn about SEL and develop their own SEC and well-being (McClelland et al., 2017; K. A. Schonert-Reichl, 2017). Meanwhile, the importance of SEC and the need for their development through SEL has only been reinforced by the effect of the COVID-19 pandemic on both children's and educator's mental health (Ozamiz-Etxebarria et al., 2023; Panchal et al., 2021). In Mexico, 90% of teachers already reported feeling stressed or burnt out before the pandemic (INEE, 2019). During the pandemic, in a study on countries across



Latin America including México, 90% of teachers felt the demands of work on their time increased, yet 70% of teachers reported that the education system provided no emotional or psychological support (Andrade-Oliveria et al., 2021).

While SEL has been a mandatory component of basic education for children in Mexico since 2017, little to no effort is being exerted to prepare educators to teach it (Mexicanos Primero, 2023). Similarly, early childhood education (ECE) has been a constitutional right since 2019, but only 64% of children ages 3-5 (4,153,558) were enrolled in preschool in 2022 (SEP, 2022). Preschool in Mexico is compulsory for children aged 3 to 5, and is divided into three levels – grade 1 (minimum of 3 years old), grade 2 (minimum of 4 years old), and grade 3 (minimum of 5 years old) – with the latter level corresponding to kindergarten in the U.S. There is thus a need for quality SEL professional development (PD) for preschool educators in Mexico, to secure children’s developmental and academic outcomes. Responding to this need, the present study explores the impacts of Educating for Well-being, a school-wide SEL intervention consisting of a training-based PD program for educators and a SEL curriculum for students.

## **SOCIAL AND EMOTIONAL COMPETENCY, SOCIAL AND EMOTIONAL LEARNING, AND EXECUTIVE FUNCTIONS**

Social and emotional competencies (SEC) are the intended outcomes of social and emotional learning (SEL). As described by Jones and Doolittle: “At its core, SEL involves children’s ability to learn about and manage their own emotions and interactions in ways that benefit themselves and others, and that help children and youth succeed in schooling,

the workplace, relationships, and citizenship. To effectively manage emotions and social interactions requires a complex interplay of cognitive skills, such as attention and the ability to solve problems; beliefs about the self, such as perceptions of competence and autonomy; and social awareness, including empathy for others and the ability to resolve conflicts” (S. M. Jones et al., 2017). The Collaborative for Academic, Social, and Emotional Learning, CASEL, has proposed one of the most influential frameworks for SEL (CASEL, 2012). It consists of intrapersonal and interpersonal knowledge, skills, and behaviors across five interrelated competency domains: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Weissberg et al., 2015). Briefly, these competencies are described as:

1. Self-awareness: understanding one’s emotions, personal goals, and values and how these influence our behavior across contexts. For example, being able to recognize one’s own biases, or when more developed, one’s thoughts, emotions, values, and behaviors and how they connect with each other.
2. Self-management: having the skills to manage one’s thoughts, emotions, and behaviors in diverse contexts to achieve goals and aspirations. For example, delaying gratification or persevering through challenges.
3. Social awareness: being able to understand the perspective of others and empathize with others, including those from diverse backgrounds and cultures. For example, having compassion for others or understanding norms more broadly, in terms of the culture and history where they developed.

4. Relationship skills: being able to establish and maintain healthy and supportive relationships and navigate interactions with diverse individuals and groups. For example, communicating clearly, collaborating, or seeking help when needed.
5. Responsible decision-making: being able to make constructive and caring choices about personal behavior and social interactions across diverse situations. For example, considering ethical standards and evaluating consequences of one's actions for one's and others' wellbeing.

Underlying these social and emotional competencies are a number of crucial cognitive and attentional skills that mature with neural development (Immordino-Yang, 2016). Such is the case of executive functions. Executive functions are a family of top-down mental processes that allow taking time to think before acting, mentally playing with ideas, meeting with unforeseen challenges, staying focused and resisting temptations (Diamond, 2013). There are three core executive functions: 1) inhibitory control, which includes self-control (often called behavioral inhibition) and attention regulation (encompassing selective attention and cognitive inhibition), 2) working memory, and 3) cognitive flexibility, also known as set shifting, mental flexibility, or mental set shifting, intimately tied to creativity (e.g., considering different perspectives, adapting promptly to changes, thinking “outside the box”). From these foundational executive functions, more complex ones like reasoning, problem solving, and planning are constructed (Collins & Koechlin, 2012; Diamond, 2013; Lunt et al., 2012).

## SEL IN EARLY CHILDHOOD EDUCATION

A vast majority of children in the world aged zero to five experience major inequities, cycles of poverty, and a lack of basic human rights (UNICEF, 2020). This is especially true for Latin America and the Caribbean, where inequality is more concentrated than in other parts of the globe: 17% of three- and four-year-olds (3.6 million) show inadequate cognitive, physical, and emotional development for their age and they live in the most impoverished households. Nine out of ten are exposed to at least one risk factor, and two out of three children under five regularly experience violent discipline like emotional aggression and corporal punishment (UNICEF, 2017). In Mexico, one out of two children live in poverty, and six out of 10 children are below standard in their academic achievement by sixth grade (INEGI, 2021; UNICEF, 2020).

A solid foundation in early childhood leads to healthier, more successful life outcomes (Shonkoff et al., 2012). The preschool period provides a unique opportunity for children's development. Children develop early language and numeracy skills in their formative years and learn to understand and regulate emotions and behavior (Berk, 2015). Successful early development depends on what UNICEF describes as "a social ecology of nurturing care," which includes education, learning, adequate health, nutrition, early stimulation through responsive caregiving and protection, safety, and security (UNICEF, 2020).

Healthy development depends on the child's access to a supportive network of adults, a safe and nourishing environment, and the level of exposure to adverse childhood experiences, such as neglect, abuse, and household dysfunction (CDC, 2023). Many

children still start school unprepared for the demands of classroom learning, with children growing up in poverty being especially affected, likely due to heightened stress exposure and lower levels of support for learning (McClelland et al., 2006a). Research indicates that ECE programs can help diminish the effects of these adverse conditions (García et al., 2016; Johnson & Brooks-Gunn, 2012). They provide a valuable opportunity to strengthen a child's optimal development and growth, and has been shown to improve children's timely entry and performance in school, future health, well-being, civic engagement, and financial stability in adulthood (Berlinski et al., 2009; Blair, 2002; Nores & Barnett, 2010; Shonkoff et al., 2012). Furthermore, the need for quality ECE has been underscored by the effects of the COVID-19 pandemic. Leading experts across various fields, like The WHO-UNICEF-Lancet Commissioners in 2020, united to make a strong case for high-quality educational experiences starting from the earliest stages of a child's life (Clark et al., 2020).

On average, 78% of three-year-old and 87% of four-year-old children from 36 OECD countries (27 European nations, United States, Canada, Australia, New Zealand, Chile, Japan, Israel, Korea, and Mexico) receive early childhood or pre-primary education. Educators, researchers, and policymakers need evidence-based early childhood education programs that can effectively target social, emotional, and behavioral outcomes for preschool children (Blewitt et al., 2018). Thus, it is crucial to understand which factors are most relevant and will leverage the greatest benefits for children in ECE. Executive functions (EF) and social and emotional competencies are two of these factors (Blair & Raver, 2015).

Normatively, preschool is a critical period for the development of basic EF and social and emotional skills that act as a basis for later social and emotional competence (Denham & Burton, 2003). During this time, most children remarkably transition from being impulsive and self-centered as toddlers to being responsible, rule-abiding, socially integrated elementary children (K. Bierman & Motamedi, 2015). They learn to understand and regulate their emotions, attention, and behavior. This allows them to build prosocial relationships and engage in learning when they enter school (Committee on the Science of Children Birth to Age 8: Deepening and Broadening the Foundation for Success et al., 2015; Denham & Brown, 2010).

Significant brain growth and emotional development happen during preschool years (K. L. Bierman & Torres, 2016; Black et al., 2017; Knudsen et al., 2006). Fueled by the growth in specific neural networks and brain regions such as the prefrontal cortex, executive function skills improve substantially (Best & Miller, 2010) and serve as building blocks to more complex socio-emotional skills that develop later in life (R. Bailey et al., 2019). Between ages 3 and 5, most children make significant gains in focusing their attention, resisting impulses, following simple rules, and responding to limit-setting (R. Bailey et al., 2019)). They learn to stop and think before acting and switch between thoughts or tasks. Nurturing these skills in preschool will lay the ground for more complex skills key to later life success, such as decision-making, long-term planning, and coping skills (P. Anderson, 2002; Best & Miller, 2010; Diamond, 2013). Language development helps children understand and make use of social and emotional skills (Bodrova & Leong, 2012; Duckworth & Seligman, 2005; J. a Durlak et al., 2011; Eisenberg et al., 2005; D. E. Jones et al., 2015a; Kiuru et al., 2015; Zins et al., 2007). Recognizing and labeling feelings helps

them develop empathy and handle fundamental social interactions like taking turns and sharing (R. Bailey et al., 2019; Denham & Burton, 1996).

Early childhood self-control and attention-regulation, two components of executive functions' inhibitory control, strongly predict later life outcomes like school readiness and academic performance (Allan et al., 2014; Duckworth & Seligman, 2005; J. a Durlak et al., 2011; Gilmore et al., 2013; D. E. Jones et al., 2015a; Kiuru et al., 2015; Lubin et al., 2013; Marzocchi et al., 2002; Zins et al., 2007), health (Berlinski et al., 2009; Blair, 2002; Moffitt et al., 2011a; Shonkoff et al., 2012) work success (C. E. Bailey, 2007), wealth (Moffitt et al., 2011a), public safety (D. E. Jones et al., 2015b; Moffitt, 2012; Moffitt et al., 2011b), and life satisfaction (T. E. Brown & Landgraf, 2010). Executive functions being often more predictive than IQ (Alloway & Alloway, 2010; Duckworth & Seligman, 2005; Moffitt et al., 2011a); or socioeconomic status (Evans & Kim, 2013).

Social emotional competencies in early childhood are also important predictors of school readiness and success (Durlak et al., 2011; Kiuru et al., 2015; Zins et al., 2007), as well as a variety of adult public health outcomes (Jones and Greenberg, 2015). Furthermore, Heckman and colleagues have shown that investing in early childhood SEL education optimizes limited resources to create more productive human capital, reducing inequality and, at the same time, yielding returns up to 7 to 10 percent per year (Heckman, 2008; Heckman et al., 2006), with more recent estimates calculating an \$11 return per dollar invested (Belfield et al., 2015).

### **SEC, executive functions and School Readiness**

School readiness is defined by the Head Start program as “children possessing the skills, knowledge, and attitudes necessary for success in school and for later learning and life.”(ECLKC, 2022). In the context of school readiness, Blair and Raver proposed the unifying construct self-regulation which encompasses both executive functions and SECs. They loosely define it as “including but not limited to attributes such as focusing and maintaining attention, regulating emotion and stress response physiology, reflecting on information and experience, and engaging in sustained positive social interactions with teachers and peers, is manifestly important for success in school.” (Blair & Raver, 2015). As such, the development of self-regulation provides a common framework for psychological research on school readiness and for the best ways to intervene to support it.

Developing socio-emotional competencies play an essential role in preparing children for school (Blair & Raver, 2015; Dice & Schwanenflugel, 2012; McClelland et al., 2006a; Raver et al., 2011). Closely intertwined with verbal skills, social and emotional regulation skills –such as showing empathy for others’ feelings, providing help, sharing materials, taking turns, playing fair; stopping and calming down when excited or upset, recognizing and labeling one’s feelings and those of others appropriately, and obeying classroom rules– are building blocks to learning at school, including the ability to participate in classroom activities, focus attention, follow directions, sustain task involvement, etc., (Ladd et al., 2000; McClelland et al., 2006b). Kindergarten teachers rank these skills high among competencies they consider necessary for school adjustment (Rimm-Kaufman et al., 2000). Essentially, these skills improve a child’s ability for goal-oriented learning and repeated,



independent attempts at flexible problem-solving and skill acquisition, supporting the mastery of emerging literacy and math skills (Welsh et al., 2010).

Difficulties reaching early social and emotional milestones can negatively impact a child's ability to regulate her emotions, social behavior, and school readiness (Bornstein et al., 2010; Denham, 2006; Fantuzzo et al., 2003; OECD, 2015), and it can also lead to mental health disorders later in life (Blair, 2002; Brauner & Stephens, 2006; National Scientific Council on the Developing Child, 2015; Shonkoff & Phillips, 2000).

Emotionally less well-regulated students performed worse academically than did their more emotionally well-regulated peers; they were also less likely to participate in class, were absent from school more often, and liked school less than more emotionally well-regulated students (Valiente et al., 2007, 2008). Children who can regulate their thoughts, behavior, and attention are more likely to perform better at higher standardized tests (Blair & Razza, 2007; Bull et al., 2008; Espy et al., 2004; McClelland et al., 2006a; Ponitz et al., 2008). Some other competencies empirically linked to school success include prosocial behaviors that promote positive relationships with peers and teachers and self-regulation skills for inhibitory aggression control. Positive prosocial engagement and self-regulation skills appear to be linked to social problem-solving skills and emotional competence (K. L. Bierman, Domitrovich, et al., 2008). In addition to academic success, preschool children with high social and emotional skills are more likely to develop and sustain friendships, have better relationships with parents and teachers, interact with peers more, participate in classroom activities, and be positively engaged in learning (Denham, 2006; McCabe & Altamura, 2011; Rose-Krasnor, 1997). Thus, preschool interventions aimed at improving

self-regulation and socio-emotional learning can strengthen cognitive development and support both academic and behavioral readiness for school (Diamond et al., 2007; Riggs et al., 2006).

Ignoring the development of executive functions and socio-emotional skills can be costly for future outcomes. Delays in the development of executive function skills increase the risk of adjustment difficulties and poor mental health in the elementary school context (K. L. Bierman et al., 2010). This is especially important in the context of school readiness as an equalizing influence between children from different backgrounds. Skills integral to self-regulation are often compromised for children growing up in poverty and other hostile environments (Blair & Raver, 2015). Encouragingly, delays can be overcome. Some research indicates that the consequences of adversity can be essentially reversed through appropriately structured prekindergarten and kindergarten experiences (Blair & Raver, 2015) and the development executive functions and SE skills have a particularly positive effect on outcomes for children under unfavorable conditions, including poverty (Heckman et al., 2006; Masten & Coatsworth, 1998), serving as protective factors in the face of adversity and chronic stressors (Buckner et al., 2003, 2009).

### **SEL programs in preschool**

SEL programs can act as a potent developmental leverage when applied in preschool years since they focus on areas that are normatively changing rapidly in children between 3 and 6. During this period, children are dependent on and highly responsive to adult input and support (Bierman & Motamedi, 2015). Preschool SEL programs can reduce the risk of a cascade of unfavorable academic, behavioral, and peer failures that afflict children entering

school with under-developed social and emotional regulation skills (K. L. Bierman, 2004), and act as equalizing factor for disadvantaged children. Yet they must consider the rudimentary nature of children's emerging social, emotional, and self-regulation skills and take into account that they are strongly reliant on external supports provided by teachers and parents to control their behavior and regulate their social and emotional experiences (Bernier et al., 2010). Research shows that SEL interventions in EC, not only lead to improved academic and behavior performance but may also produce changes in brain structure and function that have a lasting impact on children's future social and emotional development and well-being (Blair & Raver, 2014; Espinet et al., 2013; Schmitt et al., 2014).

Understanding how executive functions and SECs emerge through the early years of life can help improve implementation and make it age-appropriate. Two developmental principles can be leveraged for effective SEL (S. M. Jones et al., 2021). First, executive functions and SECs build on each other. This means some serve as a foundation for others that will develop later in life and are more complex. Children will need to acquire basic SEL skills first to be able to master others. For example, having some ability to recognize and regulate emotions precedes being able to resolve social conflict (R. Bailey et al., 2019). Second, some skills are more salient in certain stages of development. As they mature, children will be faced with higher social and emotional demands, making some competencies more relevant than others at different ages. For example, impulse control, the ability to focus attention, and empathy develop in early childhood, while higher-order skills like planning and collaboration become more significant as children get older and

encounter bigger academic and social challenges (R. Bailey et al., 2019; Eisenberg & Strayer, 1990; Saarni, 2007).

Finally, the significance of SEL in preschool has been underscored by a review of 12 different recent meta-analyses on SEL programs (J. A. Durlak et al., 2022). Four of these focused particularly on early childhood and preschool, revealing beneficial and significant impacts on a variety of student outcomes. Blewitt et al. (2018) investigated results for 62 programs targeted at children aged 2-6 from 1995 to 2017, showing notable effects on social-emotional skills, positive behaviors, conduct issues, and academic performance. However, 40% of these studies were of low quality, and the effect sizes were smaller in better-quality programs. Murano and colleagues (Murano et al., 2020) compared 48 studies of universal preschool programs conducted until December 2017 and discovered considerable impacts on social and emotional skills and conduct problems, independent of the socioeconomic or majority-minority status of the students.

Luo and colleagues (Luo et al., 2022) assessed 33 SEL programs for children aged 3-5 carried out until January 2018, consistently showing enhancements in social and emotional competence and reductions in challenging behavior. Much like previous studies, the effect sizes were smaller in more robust experimental designs, and larger when families were involved and specialists, rather than teachers, delivered the interventions. Lastly, Yang and colleagues (Yang et al., 2019) analyzed 29 studies conducted in 2018 focusing on low-income families, primarily in the USA. Comparing SEL-focused curricula with broader early childhood curricula with no SEL emphasis, they found significant SEL outcomes for

the former but not the latter, with higher implementation fidelity and programs that lasted less than a year showing stronger intervention effects.

## **EDUCATORS' WELL-BEING AND SEC, AND THEIR IMPACT ON STUDENT OUTCOMES**

Schools play a central role in the development of students' executive functions and SECs. Within schools, teachers, principals, and the school climate they foster, largely shape the students' social, emotional, and academic development (Melnick et al., 2017). Teachers are the most influential school-level factor on student achievement. Evidence suggests that teachers explain more variance in student outcomes than any other school-based factor (Hanushek et al., 2005; McCaffrey et al., 2004). Teacher preparation and certification measures have the strongest correlates to student achievement (Darling-Hammond, 2000); that is probably why, for the last decade, the highest achieving countries around the world have poured resources into teachers' professional development (Darling-Hammond, 2010).

Principals are the second most influential school-level factor on student achievement (Hallinger & Heck, 1998; Waters et al., 2004). Effective leaders inspire school transformation and instructional best practices that lead to student (Leithwood et al., 2009). Educational policies drive SEL curricula and instruction, but at the school level, the principal's active support is essential for the successful implementation of SEL programming and its sustained use (M. T. Greenberg, 2023; P. A. Jennings et al., 2013; Patti et al., 2015; Sparks, 2009). As the role of school leaders to improve student outcomes becomes more evident, so does the relevance of their professional development (Darling-

Hammond, Meyerson, et al., 2012). Even though Emotional Intelligence is widely accepted as a crucial component of effective leadership in the business world (Goleman, 2004), in education, the concept of Social and Emotional Competent leadership is still new. In terms of SEL implementation and programming, Janet Patti and colleagues propose “that the development of social, emotional, and cognitive skills is the missing link in school leaders’ preparation.” (Patti, Senge, et al., 2015).

### **Educators’ stress, burnout, and mental health**

The COVID-19 pandemic has had an enormous impact worldwide, affecting all aspects of society, including mental and physical health (Holmes et al., 2020), and in developing countries, the burden of it has been particularly high (A. T. Levin et al., 2022). There is common agreement that the direct and indirect effects of the pandemic on public mental health are pervasive and will have long-lasting repercussions (Holmes et al., 2020; Kola et al., 2021; Moreno et al., 2020). Recent research shows that the prevalence of depression, anxiety and distress symptoms increased worldwide (Aknin et al., 2022), with depression increasing three-fold in certain age groups in the US during the COVID-19 pandemic (Ettman et al., 2020). The lasting harmful consequences of the pandemic on students' lives and the critical need to support their mental health have received considerable focus (Aknin et al., 2022; Holmes et al., 2020; Orben et al., 2020). However, there's been relatively less emphasis on the obstacles encountered by educators and the significance of supporting their mental health and well-being (Hirshberg et al., 2023; Hirshberg, Frye, et al., 2022; Kush et al., 2022).

Teaching is an emotionally demanding job and has long been associated with high levels of stress (Abenavoli et al., 2013). Work-related stress encompasses the detrimental physical and emotional responses that arise from a mismatch between a job's demands and a worker's perceived capabilities or resources (Lazarus, 1995). In the context of education, educators can experience a stress response when they appraise a situation as threatening but have limited ability to change or improve it (Kyriacou, 2001). Sustained, unmediated stress can lead to burnout, a sudden breakdown of a person's mediating coping mechanisms, or an ineffectiveness of their mediating coping mechanisms over a long period of time (Guglielmi & Tatrow, 1998; Vandenberghe & Huberman, 1999). Educators in distress are more prone to generate antagonistic interactions with peers, staff, parents, and students, in turn degrading the school and classroom climate. As the school environment deteriorates, the demands on educators increase, triggering what has been referred to as the "burnout cascade" (P. A. Jennings et al., 2017; P. A. Jennings & Greenberg, 2009; Katz et al., 2020; Osher et al., 2007).

In the US, the main reason teachers left the profession during the COVID-19 pandemic was stress and continues to be so (Diliberti et al., 2021). A recent meta-analysis of nine studies examined the prevalence of teacher burnout during the COVID-19 pandemic in eight countries in Africa, Asia, Europe, and North and South America. Among teachers, the pooled prevalence of burnout was 52%, which is higher than the burnout rates reported for healthcare professionals (Ozamiz-Etxebarria et al., 2023).

Work-related stress is both ubiquitous and severe in Mexico: according to the Mexican National Institute of Social Security (IMSS, 2023), 75% of Mexican workers experience

work-related stress, while 90% of Mexican teachers reported feeling stressed or burnout before the pandemic (INEE, 2019). In 2021, 15.4% of adults were depressed and experienced moderate (31.3%) or severe (19.3%) anxiety (INEGI, 2021). Furthermore, 90% of teachers felt higher demands due to the pandemic, yet 70.35% expressed having no emotional or psychological support from education systems to better deal with the situation (Andrade-Oliveria et al., 2021).

The development of SEC helps educators better cope with stress and improve their mental health while helping students and the school community achieve their desired outcomes (S. M. Jones et al., 2013b). But what does a social and emotional competent educator look like? In general, social and emotional competence means having a strong capacity for awareness of one's thoughts feelings and behaviors, as well as that of others' feelings and perspectives. Self-regulation of internal states, impulses, and behaviors, being able to maintain healthy social connections and exert responsible decision making. In short, it means having a high level of each of the five dimensions listed by CASEL for SEL: self-awareness, self-management, social awareness, relationship skills and responsible decision making (Gueldner et al., 2020).

High-SEC teachers are better able to manage their job's demands and foster healthy learning environments, achieving higher levels of work and home life satisfaction (Crain et al., 2017; M. T. Greenberg et al., 2016; Talvio et al., 2017). A recent meta-analysis on teacher SEL shows that higher SECs yield multiple benefits for teachers (Oliveira et al., 2021). Improved SEC is linked to reduced psychological and physical distress (negative affect, rumination, stress, anxiety, depression, emotional exhaustion, and depersonalization;



ache related symptoms, cortisol levels, insomnia, blood pressure, and respiratory and heart rate). Additionally, higher SEC is linked to teacher well-being in outcomes such as positive affect, self-efficacy, personal accomplishment, and job and life satisfaction (Carvalho et al., 2017; Crain et al., 2017; Domitrovich et al., 2016; P. A. Jennings et al., 2013).

In terms of mechanisms, research has shown that certain skills such as mindfulness and attention regulation, adaptive emotion regulation, and compassion mediate reductions in educators' job stress, burnout, anxiety and depression (Roeser et al., 2013a; Taylor et al., 2016) and improvements in self-efficacy and job satisfaction. A meta-analysis of 65 international independent studies of teacher stress identified improved emotion regulation as key to preventing teacher stress (Montgomery & Rupp, 2005). Brackett and colleagues' research found emotional regulation helps teachers' efficacy, stress, and job satisfaction (Brackett et al., 2010; Hagelskamp et al., 2013; Hoffmann et al., 2020). Chang proposes the emotional labor of managing negative emotions is what results in emotional exhaustion that can lead to burnout (Chang, 2009). Thus, cultivating adaptive coping strategies may support teachers' well-being and performance (Chang, 2013; Skinner & Beers, 2016). Furthermore, Roeser and colleagues found that certain "habits of mind" or dispositions, such as awareness, attention, flexibility, and intentionality, support teacher occupational health, well-being, and capacities to build and sustain supportive relationships with students and positive classroom climates (Roeser et al., 2012)).

### **Educators' SEC and well-being and student outcomes**

Beyond the implications for their own well-being, educators' burnout and psychological distress significantly impact student achievement and school costs (Banerjee et al., 2017; P. A. Jennings & Greenberg, 2009; Mahfouz et al., 2019). Higher teacher well-being and socio-emotional competency have been linked to improved teaching quality and student outcomes (Braun et al., 2019; P. A. Jennings & Greenberg, 2009; Klusmann et al., 2008, 2016; Zee & Koomen, 2016). On the other hand, increased stress levels and job discontentment correlate with early attrition for teachers and school administrators (Boyce & Bowers, 2016; Hancock & Scherff, 2010; Ryan et al., 2017).

According to the prosocial classroom model (P. A. Jennings & Greenberg, 2009), teachers' SEC and well-being influence classroom climate and student outcomes, and these effects are mediated by the quality of teacher-student relationships, effective classroom management, and effective SEL implementation.

### Teacher's SEC and teacher-student relationships

Teachers with good emotional regulation are more likely to show positive affect and higher job satisfaction and less burnout (Brackett et al., 2010; Chang, 2009, 2013; Hagelskamp et al., 2013; Hoffmann et al., 2020). Content, positive, and calm teachers are more likely to be better able to treat students with warmth and sensitivity even when their behavior is challenging (S. M. Jones et al., 2013). High-quality relationships with teachers result in students' better social adjustment and higher academic competence (B. K. Hamre & Pianta, 2006; Mashburn et al., 2008; Raver et al., 2007) and socioemotional development (Heatly & Votruba-Drzal, 2017; Lippard et al., 2018; Pianta & Stuhlman, 2004; Spilt et al., 2012).

Positive relationships can be a protective factor for students with internalizing behaviors like anxiety and depression and can interrupt student risk trajectories (O’Conner et al., 2017). Conversely, having negative or conflictive relationships reduces the likelihood of students’ school engagement and makes it more likely they’ll show low academic achievement (Burchinal et al., 2002; B. K. Hamre & Pianta, 2001; Lippard et al., 2018; Roorda et al., 2011). A large study found that the quality of teacher-student relationships is a better predictor of academic adjustment than other factors like teacher education and teacher-student ratio (Mashburn et al., 2008).

One influential factor in the teacher-student relationship is stress contagion. Stress-contagion theory (Wethington, 2000) explains stressful experiences can spillover from one stressed individual to another within a shared social setting (Milkie & Warner, 2011; Oberle & Schonert-Reichl, 2016). The burnout cascade described before is a considered pathway. A study examining the relationship between classroom environments and the mental health of more than 10,000 students found teachers who reported higher levels of stress had more students with mental health problems in their classrooms (Milkie & Warner, 2011). A study with 400 fourth and seventh graders and their teachers found that higher levels of self-reported burnout in classroom teachers could significantly predict higher morning Cortisol levels in students, showing that teachers work-place stress is linked to students’ physiological stress regulation. Stress contagion happens, though its yet to be understood if teacher burnout boosts student levels of stress or the contagion moves in the opposite direction (Oberle & Schonert-Reichl, 2016).

An important teacher influence is through modeling, as proposed by Hamre and colleagues

(B. Hamre et al., 2014; B. K. Hamre et al., 2013) applying attachment theory (Ainsworth et al., 1978; Bowlby, 1982). According to this theory, relationships with supporting caregivers distinguished by trust, responsiveness, and involvement, promote social and emotional development through healthy internalized working models. These internal working models convey a sense of security that allows children to explore novel situations (Bretherton & K. A, 1999). Warm and supportive teachers provide students with a sense of connectedness with school and a sense of security that fosters exploration and risk taking, both crucial to learning (Mitchell-Copeland et al., 1997; Murray & Greenberg, 2000; Watson, 2003).

#### Teacher's SEC and effective classroom management

In the last decades, there has been a move towards more authoritative and proactive approaches to classroom management which promotes prosocial and cooperative behaviors through establishing warm and supportive relationships and communities, assertive limit-setting and guidance, and using preventive strategies instead of coercive measures to control negative behaviors (Angell, 2012; Bredekamp & Copple, 1997; Ginott, 1993; Kohn, 2006; J. Levin & Nolan, 2007; Marzano et al., 2003; Noddings, 2005; Watson, 2003; Watson & Battistich, 2006).

This perspective stresses the relevance of self-regulation in both teachers and students to be able to create an environment in which students act out of a shared responsibility for a healthy learning environment instead of to avoid punishments and rewards (Woolfolk Hoy & Weinstein, 2013). Findings from classroom management literature and SEL intervention literature suggests that teacher's SEC may be an essential component to support this new

orientation in classroom management, healthy classroom climate and positive student outcomes (P. A. Jennings & Greenberg, 2009).

There has been a paradigm shift in classroom management that begun in the 1970s: it has gone from “the creation and application of rules to regulate student behavior to one that also attends to students’ needs for nurturing relationships and opportunities for self-regulation” (Alvidrez & Weinstein, 1999). Jennings and Greenberg point out that this shift, which requires teachers to have thoughtful reflection and decision making, promote student self-regulation instead of compliance, help them develop not only cognitively but affectively and develop trusting relationships between students and teachers and between classmates, in classrooms that are student centered (Mayrowetz & Weinstein, 1999), calls for (P. A. Jennings & Greenberg, 2009).

The role of teachers’ SEC was noted by Kounin (Kounin, 1977) when he noticed that teachers that had a high degree of on-task behavior displayed “withitness”: a high degree of awareness of the individual and group social and emotional dynamics that allowed them to notice subtle changes in student’s emotions and behaviors and respond proactively to help them return to the task on hand (Kounin, 1977). Marzano and colleagues ran a meta-analysis that found that teachers with a certain “mental set” were better classroom managers. That mental set is a construct similar to Langer’s construct of “mindfulness” (Langer, 2016) a “heightened sense of situational awareness and a conscious control over one’s thoughts and behavior relative to that situation” (Marzano et al., 2003), contrasting with a state of little conscious awareness or “mindlessness”. Mental set also includes emotional objectivity, related to the SEC dimension of self-management. Jennings and

Greenberg explain that teachers who can “remain cool under pressure addressing disciplinary issues in a “matter-of-fact” way without taking behaviors personally are most effective classroom managers (P. A. Jennings & Greenberg, 2009). They also point out to the need of high teacher’s SEC in fostering two additional important factors for this type of supportive and warm classroom management: a sense of community (Battistich et al., 1997) and the development of intrinsic goals and autonomous learning climates (Vansteenkiste et al., 2004).

Recently, a meta-analysis reported that pre-service adult SEL interventions have a distal impact on the capacity of teachers to manage their classrooms and deal with emotional challenges (Oliveira et al., 2021). They do so by positively impacting the classroom climate and instructional practices domain that in turn lead to higher quality learning environments.

#### Teacher’s SEC and effective SEL implementation

Numerous studies support the efficacy of SEL programs for students, (for recent reviews see: (J. A. Durlak et al., 2022; Greenberg, 2023). Quality implementation depends on different factors in multiple ecological levels like community, characteristics of staff delivering the program, features of the school, and professional development services (J. A. Durlak, 2015). SEL is carried out most effectively in environments that are nurturing and safe, characterized by positive, caring relationships among students and teachers and between classmates; and the creation of such environments depend on adults with high SEC (Delpit, 2006; P. A. Jennings et al., 2019). Teachers must be committed to SEL, model and communicate behaviors such as managing stress and frustration, showing empathy, cooperating, and addressing conflicts (Mahoney et al., 2021).

Implementation quality depends on teacher's SEC like self-awareness, social awareness, and relationship management (Dane & Schneider, 1998; Domitrovich & Greenberg, 2000; M. T. Greenberg, 2023; Group, 1999; S. M. Jones et al., 2013; K. A. Schonert-Reichl, 2017; Solomon et al., 2000). For example, in a study of the PATHS Curriculum, the quality of implementation was related to classroom outcomes, and it necessitated teachers' SEC to have the understanding and willingness to integrate SEL concepts and skills when interacting with students (Conduct Problems Prevention Research Group, 1999). The same study showed that student engagement was heightened when educators delivered SEL instruction in a stimulating manner. This involves maintaining flexibility, demonstrating openness, and being attuned to the emotional needs of students. Such an approach allows for the application of SEL during situations of conflict, or when students experience emotions such as anger, frustration, sadness, or excessive excitement. The concept of a teacher's "Psychological mindedness," which encompasses self-awareness, social awareness, self-management, and relationship management (Kusche et al., 1999), combined with the previously mentioned "habits of mind" or dispositions, including awareness, attention, flexibility, intentionality (Roeser et al., 2012), as well as the awareness and regulation of one's own emotions (Brackett et al., 2010; Buss & Hughes, 2007), are all posited as pivotal elements in the successful implementation of SEL.

Classroom and schoolwide climate also affect SEL program implementation. Teachers' SEC is crucial in effective classroom level SEL since it involves not only teaching but modeling SEC, promoting social skills when relating with students, and providing consistent and continuous opportunities to build, advance, and practice social and

emotional skill in a safe environment (K. L. Bierman, Domitrovich, et al., 2008; K. Bierman & Motamedi, 2015; Meyers et al., 2015; Rimm-Kaufman et al., 2000; Williamson et al., 2015). Since SEL can be taught not just by the direct implementation of programs but also through adult modelling and embodiment, teacher's SEC can form a strong foundation that can allow practicing and strengthening student's SEC throughout the school day (Meyers et al., 2015; J. A. Durlak et al., 2011).

Additionally, learning sciences have shown that deeper student learning depends on teachers knowing their students deeply. This allows for teachers to provide personalized instruction that matches their students' individual experiences, interests, and needs. Diversity in classrooms imply culturally responsive instruction and this means adults must understand the strengths and needs of each student so they can instruct them in a way that affirms their cultural knowledge and personal experiences as assets to the learning process. Effective SEL thus emphasizes creating caring, culturally responsive learning communities where students are known, appreciated and respected (Mahoney et al., 2021). It can be inferred that the social and emotional skills previously named would help teachers with this need since, to the degree that these conditions prevail, the foundation for equitable learning opportunities is fortified (Gregory & Fergus, 2017; Jagers et al., 2019).

At the school level, positive interpersonal relationships between staff may have a robust effect on SEL implementation, meaning the SEC of all adults composing the school environment play a crucial role (P. A. Jennings & Greenberg, 2009). All educators and staff in schools need to be prepared and trained to competently implement SEL strategies inside and outside of the classroom (Oberle et al., 2016), meaning they need a strengthened



capacity to model the self-awareness, self-regulation, social-awareness and relationship management they want to instill in children and promote in school and classroom environments, sustaining this lens of equity so it can be supported systemically (Jagers et al., 2019).

### Principal's SEC and student outcomes

Principals are second only to classroom teaching as an influence on student learning. Their influence comes indirectly and most powerfully through their ascendancy on staff working conditions, motivation, and commitment. Also, it is the way in which they lead and not the leadership practices in themselves—their capacity for responsiveness instead of dictation by the contexts in which they work—that makes them more effective (Leithwood et al., 2008). These claims are describing people with a strong capacity to see others, work with others, respond to their needs, inspire. They imply strong underlying social and emotional capacities. Effective school leaders promote positive school climate (Darling-Hammond, Amrein-Beardsley, et al., 2012; Devaney et al., 2006; Dusenbury et al., 2016; Hallinger, 2009, 2011; Louis et al., 2010). The principal's emotional well-being contributes to a healthy school climate, which in turn influences student outcomes. A less emotionally exhausted principal, with more prosocial behavior and healthier interactions, is likely to be more engaged in supportive principal-teacher, principal-parent, and principal-student relationships that critical for students' connection to the school and for positive student outcomes (Jennings & Greenberg, 2009).

In the Prosocial School Leader model, Mahfouz and colleagues identify principal's SEC and well-being and their ability to handle stress and model caring and culturally capable

behaviors with staff and students on the one hand and being prosocial leaders that ensure all the school community feels safe, cared for respected and valued on the other as “the foundation that influences effective implementation and SEL, school climate, teacher functioning and well-being, family and community partnerships and downstream student outcomes” (Mahfouz et al., 2019). Even so, the social and emotional well-being of principals has received little attention.

Following their model, we will briefly describe the role of principals’ social emotional competency and well-being on 1) effective leadership, 2) healthy relationships, 3) effective family and community partnerships, and 4) effective SEL implementation.

*Effective leadership.* When principals show high SECs, they tend to be effective leaders that manage their schools with a positive, proactive style. Strong self-awareness can allow a leader to recognize the way in which her beliefs, values and emotions support others, or not (K. W. Brown & Ryan, 2003; Fullan, 2018; Khalifa et al., 2016). They have what Patti and colleagues call “actionable self-reflection”. That is, reflection on: 1) what matters, one’s deepest aspirations, 2) how to make sense of the world around us and, 3) one’s emotions (Patti et al., 2015). When their behaviors are supportive, teachers show higher regulation ability and job satisfaction (Brackett et al., 2010). When they accurately identify their emotions, they exhibit greater leadership towards change (Berkovich & Eyal, 2018).

*Healthy relationships.* School leaders who build healthy, trusting relationships with teachers and act in an encouraging and caring fashion, foster positive climates that support student’s SEL outcomes (Louis et al., 2016; Murphy & Louis, 2018). If they promote an

ethics of care, they build authentic and supportive relationships with teachers (Noddings, 2005; Smylie et al., 2016), can create a caring school climate and help teachers develop the skills needed to model the same type of relationships with their students (Astor et al., 2009).

*Effective family and community partnerships.* SEC-focused principals are more likely to create a school environment that welcomes parents and members of the community.

Families are essential for school improvement (Green, 2018; Patrikakou, 2011; Scanlan & Johnson, 2015) and the relational style and cultural competency of the school leader significantly impacts the disposition of parents to get involved with schools (Auerbach, 2010; Mapp & Hong, 2010). High SEC principals also build positive relationships with agents in the community to positively influence school, like agencies that serve families, specialized services for children, and community stakeholders (Goldring & Hausman, 2001; Green, 2018; Ni et al., 2018).

*Effective SEL implementation.* Principals with strong SECs not only model these skills and attitudes in their interactions but also understand their value. Such principals are more capable of leading the implementation of SEL programs, policies, and practices compared to their counterparts with less developed SECs. They will likely assume the role of SEL leaders, fostering a nurturing, healthy school culture that holds high expectations for both teacher performance and student success (Mahfouz, Greenberg, & Rodriguez, 2019).

Furthermore, principals who create and maintain supportive and trusting relationships with school stakeholders can facilitate school reform implementations, such as are needed to install SEL programs (Bryk & Schneider, 2002).

Finally, the development of adult SEL competency beyond teachers and principals but including all adults in the school, district and state level has been identified as important in enhancing systemic SEL implementation, “an approach to create equitable learning conditions that actively involve Pre-K to Grade 12 students in learning social, emotional and academic competencies that are important for success at school and life” (Mahoney et al., 2021).

### **Educator’s SEC and well-being in Preschool**

Educators’ SEC and WB are particularly relevant during the preschool period, where caring and consistent relationships with adults can protect children from the negative impacts of adverse childhood experiences and support healthy development, especially for those growing up in poverty (C. S. Bailey et al., 2013; Shonkoff et al., 2012).

What makes preschoolers unique compared to their older peers? Preschool teachers strongly affect children through socialization, formally and informally influencing their socio-emotional learning (Denham & Burton, 2003; Pianta & Stuhlman, 2004). While young children are somewhat responsive to social guidance from parents and teachers (e.g., to commands like “don’t bite” or “share”), their social skills are mainly acquired through socialized, implicit learning (i.e., observation) and experience (K. L. Bierman et al., 2010). A teacher’s ability to offer warm support and effective, nonpunitive classroom management, positively affects prosocial behavior and reduces children’s aggression (Webster-Stratton et al., 2004). Moreover, parents and other caregivers’ ability to provide a stable, warm, and responsive caregiving environment facilitates prosocial skill

development, while the stressful nature of lower-quality childcare can negatively influence children's emotion regulation and executive functions (K. L. Bierman et al., 2010; Blair & Raver, 2015). Although quality relationships are significant for all grade levels, they are particularly important for the preschool years when young children's relationships with teachers can affect future relationships with teachers and peers (P. A. Jennings & Greenberg, 2009). Indeed, negative kindergarten teachers-student relationships can be meaningful predictors of student social and academic outcomes through at least fourth grade (B. K. Hamre & Pianta, 2001).

ECE educators are exposed to many stress sources, including long work hours, lack of sufficient resources, feeling under-appreciated, and pressure from children's families (Curbow et al., 2000). They are frequently exposed to emotionally challenging situations and usually have very limited options for self-regulation when they have strong emotional reactions but cannot leave the classroom (P. A. Jennings & Greenberg, 2009). Such an environment is not conducive to providing the warmth and understanding typically expected of preschool teachers. "Preschool teachers are expected to walk into classrooms and successfully navigate the emotional lives of students, coworkers, and administrators, all while maintaining an emotionally 'even keel', managing the tasks of teaching, and providing a supportive and consistent emotional environment" (C. S. Bailey et al., 2013). Though stress contagion could affect all students, the social and emotional interactions of teachers with their students are the core of preschool classrooms (C. S. Bailey et al., 2013), and young children are strongly influenced by the behaviors adults model, and the environments they build around them (B. K. Hamre et al., 2013; Shonkoff et al., 2021). Supportive relationships and protective environments are crucial for healthy child

development, more acutely so for children experiencing toxic stress, as can be the case for many in developing countries. Unfortunately, teachers and principals seldom receive training or mentoring in how to develop their SECs to create a safe, caring, and supportive school environment in which SEL is embedded throughout the school (Greenberg 2023). This points out again to the need of “adult SEL”.

### **STRATEGIES FOR SUPPORTING ADULT SEL**

Compelling research shows that effective educator and staff training, together with administrative support are critical for effective SEL implementation and sustainable systemic change. SEL programs in schools yield the most successful results when they address the whole school ecosystem (students, teachers, principals, staff and families), are well-organized, connected with other school activities, and embedded into the day-to-day curriculum (M. T. Greenberg et al., 2003; Oberle et al., 2016). To achieve this, educators are key, particularly teachers and principals. When they are unprepared, quality implementation falters and SEL programs fail to improve children's well-being and academic success (J. A. Durlak & DuPre, 2008; S. M. Jones et al., 2021). Furthermore, the negative effects of the pandemic on educators’ stress, burnout, and mental health, has made the importance “adult SEL” even more relevant. Greenberg proposes to key aspects of adult SEL: quality, ongoing professional development, and supporting educators’ SEV (M. T. Greenberg, 2023).

To be prepared for SEL, educators need quality professional development, both in pre-service and in-service training (P. A. Jennings & Frank, 2015; K. A. Schonert-Reichl et al.,

2015). What does this entail? Though terminology may differ and emphasis on the relevance of each component may vary, five areas have been recognized as critical for effective, quality professional development in general (Barr et al., 2015; Darling-Hammond et al., 2009; Desimone, 2011): 1) *Content focus* on the subject matter (Desimone, 2011), 2) *Active learning* instead of passively receiving information (Hochberg & Desimone, 2010), 3) *Coherence* that ensures that what educators are learning is consistent with other professional development, their knowledge and beliefs, and with school district and state policies (G. L. Anderson & Herr, 2011; Guskey & Yoon, 2009), 4) *Sufficient duration* (30-100 hrs. in a year-long period (Yoon, 2007) and 5) *Collective participation* (Desimone, 2011; Fullan, 2016).

In addition, in the realm of SEL, emphasis has been made on five crucial elements that quality professional development should address: 1) Educators' self-beliefs, 2) Knowledge of child development, 3) Building successful relationships in the classroom, 4) Knowledge about SEL and classroom management, and 5) Providing educators the tools and means to develop their social and emotional competency and well-being (M. T. Greenberg, 2023; P. A. Jennings, 2016; P. A. Jennings & Greenberg, 2009; S. M. Jones et al., 2021; K. A. Schonert-Reichl, 2017).

The second aspect of adult SEL is supporting educator's social and emotional competence. Since adults in schools (teachers, administrators, support staff) are germane to creating classroom and school climates that influence student outcomes through healthy and prosocial relationships, it is crucial to provide them with opportunities and tools to build their own social and emotional competency (S. M. Jones & Kahn, 2017). Without them

having these competencies, it will be hard for them to model and teach them (M. T. Greenberg, 2023; P. A. Jennings & Greenberg, 2009; S. M. Jones et al., 2021; Mahfouz et al., 2019). Recently, four meta-analyses on educator focused SEL programs have shown that teachers with strong social and emotional competence build stronger relationships with their students, have fewer discipline problems, and promote greater student engagement, stronger attachment to school, and higher academic performance. More so, they conclusively show that educator-focused programs improve teachers well-being and instruction (Hwang et al., 2017; Klingbeil & Renshaw, 2018; Lomas et al., 2017; Oliveira, Roberto, Pereira, et al., 2021). Among these four meta-analyses, only one specifically concentrates on SEL programs designed for teachers (Oliveira et al., 2021). The remaining three focus on mindfulness-based interventions, which, although not explicitly crafted to enhance SEL skills, have shown a positive and significant effect on some of these skills.

One notable program is the Cultivating Awareness and Resilience in Education (CARE for Teachers), a mindfulness-based professional development program designed specifically to promote teachers' social and emotional competence and improving the quality of classroom interactions (P. A. Jennings et al., 2017). Closely looking at other programs compared, the vast majority were focused on teacher well-being and/or stress reduction rather than SEL skill development in itself (Berger et al., 2022; Oliveira, Roberto, Pereira, et al., 2021), yet Oliveira and colleagues found significant effects on SEC, psychological distress, and well-being. Regarding preschool PD programs, Promoting Alternative Thinking Strategies (PATHS) (K. L. Bierman & Torres, 2016; Domitrovich et al., 2007) and Tools of the Mind (Barnett et al., 2008; Diamond et al., 2019) provide various days of training so teachers can be ready to deliver their curricula, also offer mentoring. Some offer stress-management



techniques like the Chicago School Readiness Project (CSRP) (Morris et al., 2013; Raver et al., 2011) and others, such as RULER (Rivers et al., 2013), seek to develop specific teacher skills like emotional intelligence. The premise is that effective SEL intervention requires teachers to be able to model SEL competencies strongly.

In terms of adult SEL, even more emphasis is needed for preschool educators. High-quality early education is that which fosters cognitive, behavioral, and social and emotional skills, addressing interpersonal and instructional aspects (Howes et al., 2008). Since the role of adults, in particular the quality and consistency of their care is more relevant in this time of a lifespan than any other (C. S. Bailey et al., 2013; Shonkoff & Phillips, 2000; The Center on the Developing Child at Harvard University, 2015b, 2020), preschool teachers have to interact with students in a warm sensitive and responsive style, validate their emotions and nurture a sense of security that fosters active engagement in learning and classroom (Howes, 2000). If all teachers need support, reducing stress for preschool teachers and helping them to actively develop the SEL skills they need to accomplish their job is of utmost relevance: they can act as protective factors to toxic stress and positively change children's life outcomes as has been underscored by decades of research focused on healthy child development and improving children's outcomes (Shonkoff & Fisher, 2013; The Center on the Developing Child at Harvard University, 2015a). Since the bar is high for preschool teachers, their professional development must be up to par, with an even stronger emphasis on the development of SEC and well-being.

### **A CRITICAL GAP: THE DEVELOPMENT OF EDUCATORS' SEC**

Despite its relevance, most SEL professional development and SEL programs provide knowledge and information about SEL, without specifically supporting educators in cultivating their own social and emotional competencies. As we have discussed, this is a critical gap in preparing educators, schools, and education systems for quality SEL implementation (P. A. Jennings & Frank, 2015; K. A. Schonert-Reichl et al., 2015; K. A. Schonert-Reichl, 2017).

SEL as a construct and as a practice have been maturing towards a whole school approach since its inception to the present (M. T. Greenberg et al., 2003; Mahoney et al., 2021; Osher et al., 2016). In its beginning, the focus was on children and youths' SEC development, but progressively, the role of teachers became more prominent, possibly prompted by the seminal work on the prosocial classroom (Jennings and Greenberg, 2009; Durlak et al., 2015; Schonert-Reichl, 2017) and due to the realization that teachers could enhance SEL implementation, but they lacked SEL training. Thus, it became clear that teachers required professional development to prepare them to deliver specific SEL content. (Greenberg et al., 2003; Osher et al., 2016). But even then, there has been a paucity of helping teachers develop their SEC. This may be due to an expectation that teachers are adults who should already have these skills and thus need no training in them (Hadar et al., 2020), or that they are already competent role models in SEL (J. A. Durlak, 2015; M. T. Greenberg et al., 2003; P. A. Jennings & Greenberg, 2009; Marques et al., 2019; Oliveira, Roberto, Pereira, et al., 2021). Another explanation might just be the prioritization of conventional aspects of teacher preparation, such as pedagogy or subject matter over social and emotional content

(Hadar et al., 2020). Only until this last decade has the centrality of teacher SEC development begun to be seriously addressed (Schonert-Reichl, 2017), though student-centered approaches continue to dominate the field (Oliveira et al., 2021).

In parallel to Narvaez and Lapsley's model of moral character education (Narvaez & Lapsley, 2008), we believe a "maximalist" approach is needed to train educators for effective SEL implementation and the development of high-SEC and well-being. The maximalist approach states that training teachers in best practices is necessary but insufficient. Teachers are called to acquire, model, and teach SEL to prepare children for best social, emotional and academic outcomes. To optimize their abilities to model and promote SEC in students, we need to help them build their own. This calls for a more deliberate approach, one that also requires pre-service and in-service teachers to master tools and strategies to develop social and emotional competency directly, as a curricular goal. The maximalist approach implies firstly building on all best practices known to work as described in the section above (Barr et al., 2015; Darling-Hammond et al., 2020; S. M. Jones & Bouffard, 2012). Secondly it calls for the development of SEC through explicit training (P. A. Jennings & Greenberg, 2009; McClelland et al., 2017; Narvaez & Lapsley, 2008). This would not only propel academic achievement but also promote SEC development in teachers, thus enabling them to effectively equip students with the requisite skills to navigate life's challenges. Research suggests that contemplative practices may play a significant role in this training-based approach.

## CONTEMPLATIVE-BASED INTERVENTIONS AND SEL

Dahl and Davidson (J. Dahl & Davidson, 2019) define contemplative practices as efforts that promote human flourishing by training the mind. An example of contemplative practice is meditation. Meditation is conceptualized as “a family of complex emotional and attentional regulatory strategies developed for various ends, including the cultivation of well-being and emotional balance” (Lutz et al., 2008). Two defining characteristics of meditation are that 1) it requires individuals to exercise volitional control to sustain the focus of attention on particular objects –such as the breath– or mental contents –such as the wish to alleviate suffering of particular individuals; and 2) it requires repetition (J. Davidson et al., 2012).

Evidence is increasingly showing the positive impacts of meditation on psychological distress and well-being (Davidson & McEwen, 2012; Goldberg et al., 2018, 2021; Goyal et al., 2014; Lindsay et al., 2019), with little evidence of harm from moderate use (Galante et al., 2018; Hirshberg, Goldberg, et al., 2022). Current research predominantly explores mindfulness and connection meditation styles (C. J. Dahl et al., 2020). Mindfulness, defined as intentionally paying attention to present experiences with an accepting attitude (Kabat-Zinn, 2013), typically involves monitoring breath sensations and interacting with other experiences, including thoughts and emotions, with curiosity and acceptance. Connection practices, meanwhile, focus on fostering prosocial skills such as gratitude, empathy, and compassion, for example, through a loving-kindness practice that promotes friendliness and warmth towards others (C. J. Dahl et al., 2020).

In recent years, there's been discussion about broadening the scope of meditation practices beyond the focus on mindfulness and connection practices (C. J. Dahl et al., 2015; Davidson & Dahl, 2017). Dahl, Chericoff, and colleagues (Chericoff et al., 2015; C. J. Dahl et al., 2020) have proposed a more comprehensive taxonomy of meditation techniques, outlining four pillars of well-being that may be enhanced through meditation training: awareness, connection, insight, and purpose (ACIP). The awareness pillar includes attention regulation, mindfulness, and meta-awareness competencies; the connection pillar includes empathy, kindness, gratitude, and compassion competencies; Insight competencies include self-knowledge and self-inquiry, a curiosity-driven investigation of self-related beliefs and processes; and purpose competencies include knowing what brings meaning, purpose, and fulfillment in one's life. Furthermore, there is suggestive evidence that higher levels of each of the ACIP competencies are associated with improved mental health and with specific changes in neural circuitry that impact health-related biological systems, including the immune and autonomic nervous systems (see (C. J. Dahl et al., 2020).

In 2012, The Mind and Life Education Research Network (R.J. Davidson et al., 2012) proposed that contemplative practices could complement and enhance SEL programming in two significant ways: first by offering an additional framework for SEL programming regarding regular, intentional practice; and second adding value to professional development for educators. Improving educators' SEC and well-being to promote social, emotional, and academic outcomes in schools (P. Jennings et al., 2012; P. A. Jennings et al., 2017; Patti et al., 2015; Roeser et al., 2022). The complementary nature of contemplative practices and SEL was further expanded by Greenberg. In 2014, he proposed a conceptual framework outlining how contemplative interventions (CIs) can contribute to

developing social-emotional competencies, delineating how specific contemplative practices can help develop each of the five SEL core competencies identified by CASEL (Greenberg, 2014; Lawlor, 2016);. However, most contemplative-based SEL interventions predominantly use mindfulness and connection meditation styles (Hirshberg, Frye, et al., 2022; Roeser et al., 2023; K. A. Schonert-Reichl, 2023).

Initial research shows that contemplative practice promotes students' executive functions, improving learning and academic performance (Diamond & Lee, 2011; Flook et al., 2010; Smalley & Winston, 2010). It has also been reported that these contemplative practices strengthen fundamental human values like kindness and social-emotional skills such as self-awareness, self-regulation, and prosocial behavior (Flook et al., 2015; J. Davidson et al., 2012; Riskin, 2008; Ruedy & Schweitzer, 2010; Weissbourd, 2010).

Research with adults has shown that contemplative practices have numerous positive effects that are relevant to the development of SEC and well-being including enhanced self-awareness (Lazar et al., 2005), improved attention, and executive functioning (Jha et al., 2007, 2010; Tang & Posner, 2009; van den Hurk et al., 2010; Zeidan et al., 2010). Other benefits include increases in positive mood (Davidson, 2003), emotion regulation (Chiesa & Serretti, 2009; Jimenez et al., 2010; Sedlmeier et al., 2012), empathy and compassion (Block-Lerner et al., 2007; Jazaieri et al., 2012, 2013), boosting ethical and prosocial qualities, and conflict negotiation skills (Singer & Engert, 2019). Finally, contemplative practices have been shown to reduce stress and burnout (Creswell, 2017; Roeser et al., 2013b), and improve mental health (Hirshberg, Frye, et al., 2022). Thus, incorporating

contemplative practices in SEL and SEL Professional Development may be an effective way to improve children and educators' outcomes.

The salutary impacts of CIs specifically designed for educators show promise for promoting social and emotional competencies, reducing teachers' occupational stress and burnout, and improving classroom and children's outcomes (Greenberg 2023). However, the number of well-designed scientific studies examining the effects of CI's on educators and students remain small (Emerson et al., 2017; Hwang et al., 2017; Klingbeil & Renshaw, 2018; Oliveira, Roberto, Pereira, et al., 2021), sample sizes tend to be small (Goldberg & Davidson, 2023), follow-up assessments are uncommon, and the majority of research has been limited to meditation practices centered on mindfulness and connection styles.

Furthermore, little research has addressed the effects of meditation interventions on educators during the challenges of the COVID-19 pandemic (Hirshberg, 2022; Hadar 2021). Additionally, no comprehensive studies have analyzed how different levels of implementation – whether schoolwide, teachers-only, or principals-only – might moderate the impact of MBIs on both educator and student outcomes. When it comes to Mexico and Latin America, there's a notable scarcity of rigorous studies that would meet the “what works clearinghouse” standards.

This study hopes to build on and advance research on meditation-based interventions with educators while addressing some of the limitations of extant research by: 1) incorporating the largest sample of educators and students (teachers and principals, N=2,162; Students n= 2,243) in an CI impact evaluation to date, 2) from a northern state in Mexico during the

COVID-19 pandemic, 3) meeting “what works clearinghouse” standards, 4) including three and twelve-month follow-ups, 5) examining the moderating effects of the tier of implementation on educator and children outcomes and 6) evaluating an innovative and scalable MBI that is based on the “extended” ACIP framework.

## **THE COVID-19 PANDEMIC AND SOCIAL AND EMOTIONAL LEARNING IN MEXICO**

The impact of COVID-19 was deeply felt in Mexico since its first reported case in February 2020 (SEGOB, 2020), disrupting societal institutions such as schools and affecting both individual and collective mental health. The country had the longest school closures among OECD nations, lasting for over 250 days (OECD, 2021b). This prompted a transition from traditional in-person teaching to distance learning (UNESCO, 2020). The shift to distance learning came with its own unique set of challenges, further exacerbating the stress levels among educators. Firstly, the country had no prior experience in the mass deployment of educational technology on such a scale (Díaz-Barriga, 2020). Secondly, despite ongoing initiatives to improve network infrastructure, connectivity remains an issue due to the lack of affordable and extensive internet access across the country (INEGI, 2019). This technological gap made it difficult for both students and educators to fully engage with virtual classrooms. The challenge to reach and contact students was one of the most frequently reported stressors affecting teachers in Mexico (Escárzaga et al., 2020). Teachers have made a colossal effort to reach students and make sure that they receive the school activities as some students have no access or limited internet access (López Corral & Acuña Meléndrez, 2020). In some instances, teachers have gone the extra mile, literally, by



traveling long distances to deliver didactic materials to students who have no or limited internet connectivity (Hernández, 2020; Vega, 2020). This added responsibility only elevated the already high levels of stress among teachers, complicating the already difficult scenario brought about by the pandemic and school closures.

For the academic year 2021–2022, the Mexican Ministry of Public Education (SEP) rolled out the “National Strategy for a Safe Return to School”, a plan focusing on a voluntary and gradual resumption of face-to-face classes with hygiene and social distancing measures to mitigate the spread of COVID-19 (SEP, 2020). However, the actual implementation of these measures was a considerable challenge due to financial constraints, human resources, and inadequate infrastructures, such as small classrooms that make social distancing difficult, as well as insufficient technical equipment (Berlangu et al., 2020). The return to classes posed additional challenges, such as a significant drop in school enrollment, with the most substantial decline occurring at the preschool level, where enrollment decreased by 13% (México Evalúa, 2022). There are also significant academic setbacks, the consequences of which are evident, but official data is still lacking.

The pandemic has notably impacted the mental health of educators, exacerbating levels of anxiety, stress, emotional exhaustion (EE), and burnout (Cortés-Álvarez et al., 2022). The effects of the pandemic on preschool children are uncertain when compared with older age groups, however, international studies on the aftermath of past pandemics and disasters consistently show that many children will experience both immediate and enduring negative effects. This is especially concerning during early childhood, a critical period when the brain is rapidly developing and highly vulnerable to adverse childhood

experiences (Yoshikawa et al., 2020). In Mexico, one out of two children live in poverty and six out of 10 children are below standard in their academic achievement by sixth grade (INEGI, 2021; UNICEF, 2020). If children are burdened with the chronic stress of adversities without the buffering protection of supportive caregivers, they will develop patterns of adaptation and physiological disruptions that can have dire consequences on their physical and mental health and life outcomes; consequences that not only hurt them individually but burden society at large (Shonkoff, 2016a). Acting promptly to provide quality SEL interventions for children and adults in early childhood education can be a pathway to protect children against adversity and bridge the education and inequality gap (J. A. Durlak et al., 2011; García et al., 2016c; Heckman, 2008b; OECD, 2021b).

### **SEL in Mexico**

Great progress was attained for SEL in Mexico when in 2017 social and emotional development was inserted as an integral part of education plans from preschool through high school as mandatory nationwide (SEP, 2016). National strategies for teacher training in SEL were deployed in 2018, 2019, and 2020, consisting of brief online courses that did not reach all teachers. In 2020, as few as 5% received SEL training (Mexicanos Primero, 2023). In 2020, MejorEdu found that teachers recognized the prevailing need for SEL training (MEJOREDUC, 2020). Another important step was the inclusion of social and emotional education in 16 teacher training colleges' (Escuelas Normales) syllabuses formulated in 2019 (SEP, 2018). Two courses were inserted: Social and emotional education and Strategies for SE development, the former theoretical, the latter focused on developing classroom implementation strategies.

Since 2019, with the change in the central federal government, advances and setbacks have occurred. The need for education to consider students' cognitive, socioemotional, and physical needs to attain well-being was inserted as mandatory into the Constitution (Articles 27 and 123). This pointed out that SEL had to be given more time in learning, recognizing its crucial role for academic success, inclusion, equity, and well-being. However, setbacks have happened in the way this law translated into practice: In reality, SEL was left out as an education goal and became a suggested topic with no precise articulation within the curriculum and learning process (Mexicanos Primero, 2023). This diluted explicit SEL implementation and left it to each teacher's skill as to how to develop SEL with students. Also, there have been no more federally delivered SEL programs since 2019. Overall, the teacher professional development budget has been acutely reduced during the current administration, with the average amount spent declining from \$50 per teacher in 2019 to \$4 per teacher in 2022 (Mexicanos Primero, 2022; Soto, 2023).

Overall, there is a gap between the general directives of plans and programs that include SEL, its insertion into the curricula and the development of teacher knowledge and skills to model and teach SEL. Amidst this gap and the lack of clarity on how to implement SEL, in the current model, called Nueva Escuela Mexicana (New Mexican School) (SEP, 2023), teachers and school staff are entrusted to be the ones who must choose and insert anything related to SEL into schools, according to their own capacity, into a curriculum that does not explicitly aim to develop it. Even in the best-case scenario of new teachers receiving two pre-service courses on SEL, having a general understanding of SEL knowledge and best practices is important but insufficient to helping student teachers develop their own SEC and model those with students without more extensive instruction (Hadar L. et al. 2020;

Schoner-Reichl K. 2017). As is the case for most SEL programs (Schonert-Reichl 2017), the development of teacher and staff SEC and well-being is still the biggest missing piece in this geography of broad but unclear support for SEL in Mexico. Furthermore, SEL initiatives in Mexico are not yet supported by a strong foundation of evidence-based programs and practices (Mexicanos primero 2023), and there's a paucity of scalable quality SEL professional development (Torrente et al., 2015).

All these challenges and opportunities, point to pressing need for evidence-based, quality SEL interventions in Mexico, particularly for early childhood. Educating for Well-being might be a good candidate.

### **EDUCATING FOR WELLBEING FOR PRESCHOOL AS A MAXIMALIST APPROACH TO PRESCHOOL SEL IN MEXICO**

Educating for Well-being (EW) is a universal prevention SEL intervention developed in Mexico by the non-profit AtentaMente. It was initially developed to offer a maximalist approach to educator SEL professional development. Now, EW is a systemic, scalable, and sustainable program with three main components: 1) A rigorous 80-hour professional development program that uses a blended learning approach - synchronous sessions, a self-paced online course, and a mobile app - to train educators to understand and practice SEC in their lives and classrooms and improve their own well-being, 2) a developmentally appropriate SEL curriculum for students, which weaves explicit instruction with daily activities and targeted skills practice, and 3) a 40-hour leadership training that builds local capacity to ensure culturally and contextually relevant SEL implementation that enacts

long-term systemic change. In this study we explored the first two components which we describe below.

### EW's Professional Development

EW integrates all the aforementioned best practices for professional development presented be (e.g., Darling-Hammond et al., 2009; Desimone, 2011). It maintains a strong content focus on SEL—facilitating active learning, ensuring coherence with other training and educational policies, providing sufficient duration for meaningful skill development, and promoting collective participation for building an interactive learning community (e.g., Desimone, 2011; Anderson & Herr, 2011; Fullan, 2016). The program aims to enhance educators' self-beliefs and attitudes towards SEL; develop educators' SEC and well-being; promote a basic understanding of child development, equipping educators with the ability to deliver developmentally appropriate learning experiences that support social, emotional, and academic competence; foster successful relationships in the classroom—both between educators and students, and among students themselves—to create safe and enriching learning environments; provide knowledge about SEL, effective classroom management strategies, and instruction on effective implementation of EW's children's SEL curriculum to foster positive student outcomes.

EW progressively presents opportunities to learn the declarative and procedural knowledge relevant for each of the SECs to be developed by the educator: Self-awareness (including a deepening understanding of one's own values, goals and motivations, attention regulation and emotional awareness), self-regulation (including emotion regulation and stress management) and prosociality (including empathy, kindness, compassion, gratitude, and

collaboration) while nurturing self-efficacy and a growth mindset (C. Dweck et al., 2011; C. S. Dweck, 2006). The emotion regulation component of the intervention is based on Gross' process model of emotion regulation (Duckworth et al., 2014; Gross, 2015) and provides explicit training on the four emotion regulation strategies that stem from the model: situation modification and selection, attentional deployment, cognitive change, and response modulation.

Educators engage in self and group reflection, to clarify and hone their motivation to enhance their SEC and foster SEC with their students. They are provided multiple tools, strategies, and opportunities to integrate acquired knowledge into practice to develop SE competency, both in their personal lives and while teaching. In parallel, they are offered guidance to support classroom implementation of the children's SEL curriculum, where they are exposed to modeling by experts and the opportunity to practice and share strategies and understanding with peers. Through repetition and intentional practice in diverse situations and contexts, complemented by contemplative practices (specifically those proposed in the ACIP framework (Chernicoff et al., 2015; C. J. Dahl et al., 2020)), the program provides support during a six-month period in which educators can familiarize themselves with the knowledge and skills they are developing.

#### EW's age-appropriate classroom curriculum

EW's children's curriculum consists of the "10 Agreements" and "Siconautas" (Psychonauts) (Barkovich, 2019; Chernicoff, 2021). These are complementary curricula designed for the progressive development of young children's social and emotional skills, emphasizing children's self-regulation and prosociality. The 10 Agreements serves as a less

structured, organic approach for PreK-1 and PreK-2 students (ages 3 and 4), fostering SEL through daily classroom activities and the practice of core strategies such as “Mountain pose,” “Silence,” and “Kindness”, akin to SEL kernels (R. Bailey et al., 2019; Embry & Biglan, 2008). On the other hand, Siconautas, targeting PreK-3 students (5-year-olds), builds on the 10 agreements and provides a more structured and comprehensive SEL curriculum. It employs direct instruction and activities to build students' SEL skills systematically. Siconautas comprises a structured 5-unit curriculum complete with lesson plans and activities to implement with students. This dual approach offers a developmentally appropriate scaffolding strategy that gradually prepares children for academic success and continuous social and emotional development as they advance into elementary school.

Both the 10 Agreements and Siconautas provide age-appropriate content to be delivered formally in dedicated sessions, in a SAFE fashion (sequenced, active, focused, and explicit), and informally throughout the day, embedding multiple opportunities for teachers and children to practice in unstructured activities. They provide knowledge and practice of SEL skills, presented as sequenced “Agreements” that scaffold student SEC development through games, stories, pictures, drawing, discussion, songs, contemplative practices, etc. (Agreements: Learning how to Calm Myself, Listening and connecting, Knowing my emotions, Being Patient, Being attentive, Being a good friend) and eight self-regulatory strategies or “Tools” to help them practice the Agreements (Tools: I listen, Stopping, The talking wand, Mountain Pose, Breathing to calm myself, the Emotion Jar, Rabbit-O). A shared vision of the classroom is constructed at the beginning of the year, expressing the group’s desired way of being, feeling, and relating. It serves as a north star for using and

building the Agreements and Tools into practice, guiding personal behavior and classroom management in a supportive, caring and positive manner. As with adults, students are guided to understand, practice and integrate knowledge and skills into their behavior and daily lives.

As a relatively young intervention, EW has had a significant reach. In 2018, its first cohort comprised 1,000 preschool principals across seven states in Mexico. By the end of 2022, EW had trained over 15,000 preschool and lower elementary educators, with a total estimated impact on more than 400,000 students across 14 states. EW has strengthened its capacity to scale the program through blended delivery. The number of instructors certified to implement the program has tripled in the last four years from 60 to 180. While scalable, it also adapts to context: it has been delivered for indigenous Maya populations, urban and rural settings.

### **EDUCATING FOR WELL-BEING'S THEORY OF CHANGE**

Educating for Well-being's theory of change (ToC) is grounded in the Prosocial Classroom (Jennings & Greenberg, 2009) and the Prosocial School Leader (Mahfouz, 2019) logic models and extant research suggesting that SEL interventions are most effective when they are implemented within the entire education ecosystem. It states that a comprehensive, contemplative-based PD program to develop educators' (teachers and principals) SEC and well-being and the implementation of an evidence-based SEL curriculum for preschool students, will lead to improved outcomes for educators, classrooms and schools, and



students. Thus, Educating for Well-being's ToC describes a sequential set of hypotheses concerning program impacts on educator, classroom, school, and student-level outcomes.

Regarding educator outcomes, the ToC posits that when the PD program is well implemented, educator engagement with the PD component of the program will be high (e.g., high program acceptability and feasibility). Educator engagement with the program leads to enhanced educator socioemotional competence: Through practice and support, educators gradually learn the mindsets and skills of self-awareness, emotion regulation, and prosociality at the heart of the program. By scaffolding educators' application of these skills to everyday life situations, both in and out of school, the PD program is hypothesized to support intermediate outcomes such as educators' mental health, well-being, and self-efficacy (e.g., reductions in anxiety and depression, and reductions in job stress symptoms of burnout like emotional exhaustion and personal accomplishment).

Regarding classroom and school outcomes, the ToC posits that educators' SEC and well-being are critical for developing and maintaining supportive educator-student, educator-educator, family-educator relationships, and effective classroom management. Thus, the ToC proposes that all these factors synergistically contribute to creating a classroom and school climate more conducive to learning. For example, when teachers are better at regulating their emotions and showing kindness, less stressed and exhausted, and less anxious and depressed, they are hypothesized to have more emotional and attentional resources available to interact with students in the classroom intentionally in ways that support a healthier classroom climate and children's developmental needs and learning. It

should be noted that the present study did not explicitly explore this set of hypothesized outcomes.

Regarding student outcomes, the ToC posits that educators with higher SEC and explicit instruction on teaching the SEL curriculum will implement it more effectively, as they have the pedagogical know-how and the experiential understanding to teach and model the desired social and emotional behaviors. Successful SEL curriculum implementation will lead to improved students' SEC (particularly, self-regulation and prosociality) and academic outcomes (e.g., school readiness).

Finally, EW's ToC proposes that systemic leadership training for a selected cohort of educational stakeholders will improve state- and school-wide SEL outcomes. We propose that this cohort is integral to building local capacity and leading systemic SEL planning and implementation, providing ongoing support for educators and schools, ensuring student learning and well-being, promoting the contextual adaptations needed to address the specific needs of communities (such as those needed to improve equity and quality, or secure cultural and linguistic relevance), and ensuring long-term sustainability of the intervention. It should be noted that the Leadership Course component of Educating for Well-being was not implemented for the present study, and thus findings for this set of hypothesized outcomes are not presented.

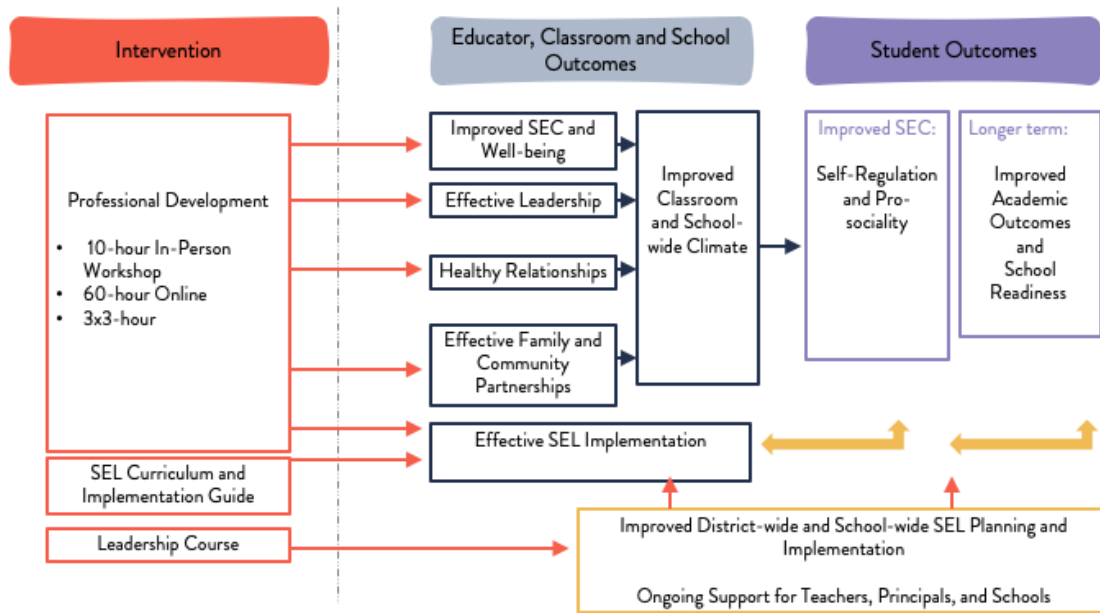


Figure 1. *Educating for Well-being Theory of Change*

## THE PRESENT STUDY

The present study evaluated the impact of EW’s PD program for educators and its SEL curriculum for students with a pragmatic cluster randomized wait-list controlled trial (RCT) involving 421 preschools, 2,162 educators, and 2,423 children in the Mexican state of Sinaloa during the COVID-19 pandemic. Schools and educators were recruited between December 2020 and mid-January 2021. Schools were randomly assigned following the completion of educators’ pretest. Data collection took place at four moments in time: before the start of the intervention in January 2021 (T1), at the scheduled completion of the PD program in July 2021 (T2), three months after the scheduled completion of the PD program in October 2021 (T3), at which time educators were beginning to implement the SEL curriculum with students, and 12 months after the scheduled completion of the PD program

in June 2022 (T4), at which time implementation of the SEL curriculum for children had ended with the school year.

The present study mainly seeks to address the following research questions:

1. Is Educating for Well-being PD **acceptable** in terms of educators' perceptions that it delivers professional and personal benefits, and **feasible** in terms of educators' ability to do the home practices and complete the program?
2. Do educators assigned to Educating for Well-being PD show statistically significant improvements in **self-awareness, emotion regulation, prosocial skills and behaviors, self-efficacy, and well-being** (reductions in psychological distress) compared with educators randomly assigned to the waitlist condition?
3. What are the effects of Educating for Well-being PD and SEL curriculum on **students' socio-emotional competencies**?

Additionally, it will explore the following secondary questions:

4. Are educator-level effects of Educating for Well-being moderated by occupation, school marginalization level or tier of implementation?
5. Are student-level effects of Educating for Well-being moderated by school marginalization level and tier of implementation?

## METHOD

### Study design and participants

#### Recruitment

School and participant pre-recruitment started in December of 2020 in the state of Sinaloa, with an original target of recruiting 250 preschools. The sampling frame for the study included 687 preschools that met the following eligibility criteria: had more than 40 students enrolled, operated during the day, and were not alternative models (i.e., multi-grade, community, cooperative, migrant or autonomous schools, which often operate with transient populations or in rural settings without connectivity). To ensure the number of target schools was reached, 503 preschools<sup>1</sup> were randomly selected from the sampling frame to approach for recruitment. Educators from the selected schools were invited by the local Ministry of Education to participate in Educating for Well-being. They received information about the intervention and research study from school supervisors, who had previously attended a virtual information and awareness session led by AtentaMente. Interested educators were instructed to register for the intervention by completing an online survey between the 12th and 17th of January 2021<sup>2</sup>. First, educators were asked to complete the consent process, which included reviewing the research description letter and data

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<sup>1</sup> 504 schools were originally selected, but one was dropped from the recruitment sample because it closed due to the pandemic.

<sup>2</sup> Before the beginning of the intervention, a complimentary registration period was opened between 17th and 22nd January 2021, to give unregistered teachers in the treatment and control schools another chance to sign up for the intervention and study.

privacy agreement and giving their written consent to participate in the intervention and study. Then, the baseline survey collected contact, demographic, and work-related information, as well as a series of assessment scales to measure socio-emotional competencies, self-efficacy, psychological distress and teaching practices. Information was collected from 2,281 educators in 449 schools, surpassing the target almost twofold. In light of the overwhelming registration rates, it was decided that the scale of the study would be expanded to accommodate all schools that had committed to the study.

### Sample

In line with Educating for Well-being's theory of change, the minimum requirement for successful implementation is that either the principal *or* at least two teachers participate in the professional development program per school. This results in different tiers of implementation, as some schools will have only principals participate (principal-only implementation), only teachers participate (teacher-only implementation) or the participation of both principals and teachers (i.e., school-wide implementation). After the registration period, 28 of the 449 schools did not meet the study requirement. Thus, randomization was performed on a sample of 421 schools, comprising a total of 2,182 educators<sup>3</sup>, of which 2,162 are included in the analytic sample that is referenced in the

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<sup>3</sup> Of the 2,281 educators that registered for the program, 99 were excluded because their school did not meet the eligibility requirement (principal or at least 2 teachers registered) or were not one of the 503 schools selected for the intervention.

remainder of the present study<sup>4</sup>. Though none of the schools officially dropped out of the intervention once it had started, a total of 43 educators declined to participate or dropped out, mainly due to retirement, health problems or other personal reasons. Student selection took place at the start of the 2021-2022 school year, after the professional development program ended and before implementation of the student SEL curriculum began.

Administrative data was used to identify students who were currently enrolled in participating schools and assigned to classrooms led by teachers who had participated in the professional development program, as well as students in grades 2 and 3 who had met the same condition in the previous school year and maintained contact with their teacher.

Students were randomly selected from this sampling frame, 5 per classroom. Teachers were sent a list of their 5 students and asked to complete assessments for the first 3, with the remaining 2 being alternatives in case of any logistical issues. Assessments were completed for a total of 2,423 randomly-selected students<sup>5</sup> in 326 schools. Tables 1 and 2 presents descriptive characteristics of the sample of educators, children and their schools.

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<sup>4</sup> During analysis, 20 educators were identified to be administrative staff with no leadership role or interaction with students. They were thus removed from the analytic sample.

<sup>5</sup> One of the lingering effects of the COVID-19 pandemic was to delay student enrollment at the start of the 2021-2022 school year. The administrative data used for student selection was thus incomplete, leading to cases in which randomly-selected students were not officially enrolled at the time baseline assessment data was collected. That is, there were cases in which teachers had less than 3 randomly-selected students to assess. To meet their target, teachers often selected other students from their classroom at their discretion. As such, a total of 4,032 student assessments were

	Total			Intervention			Control		
	n	%	M (SD)	n	%	M (SD)	n	%	M (SD)
<b>SCHOOL CHARACTERISTICS</b>									
<b>Management type</b>									
Federal	307	72.9%		155	73.5%		152	72.4%	
State	45	10.7%		20	9.5%		25	11.9%	
Private	69	16.4%		36	17.1%		33	15.7%	
<b>Geographic area</b>									
Urban	344	81.7%		178	84.4%		166	79.0%	
Rural	77	18.3%		33	15.6%		44	21.0%	
<b>Level of marginalization</b>									
Very low	161	38.2%		70	33.2%		91	43.3%	
Low	164	39.0%		87	41.2%		77	36.7%	
Medium	67	15.9%		37	17.5%		30	14.3%	
High	24	5.7%		13	6.2%		11	5.2%	
Very high	5	1.2%		4	1.9%		1	0.5%	
N° participants per school			5 (2.3)			5 (2.4)			5 (2.2)
Student enrollment per school			114 (66.9)			113 (68.2)			116 (65.7)
<b>Tier of implementation</b>									
School-wide	296	70.3%		148	70.2%		148	70.5%	
Principals only	58	13.8%		29	13.7%		29	13.8%	
Teachers only	67	15.9%		34	16.1%		33	15.7%	
<b>EDUCATOR CHARACTERISTICS</b>									
<b>Occupation</b>									
Teacher	1,767	81.7%		889	81.6%		878	81.9%	
Principal	395	18.3%		201	18.4%		194	18.1%	
<b>Gender</b>									
Female	2,148	99.4%		1,085	99.5%		1,063	99.2%	
Male	14	0.6%		5	0.5%		9	0.8%	
Age			38 (9.7)			38 (9.9)			38 (9.5)
<b>Marital status</b>									
Married	1,388	64.2%		711	65.2%		677	63.1%	
Single	598	27.7%		293	26.9%		305	28.5%	
Divorced	128	5.9%		63	5.8%		65	6.1%	
Widowed	48	2.2%		23	2.1%		25	2.3%	
Prior SEL training	685	31.68%		356	32.66%		329	30.69%	
<b>Socioeconomic level</b>									
A/B	1,293	60.5%		673	62.5%		620	58.4%	
C+	552	25.8%		270	25.1%		282	26.6%	
C	207	9.7%		94	8.7%		113	10.7%	
C-	53	2.5%		25	2.3%		28	2.6%	
D+, D or E	33	1.5%		15	1.4%		18	1.7%	

Table 1. School and Educator Characteristics by Treatment and Control Status

collected from 356 schools, of which only 2,423 from 326 schools belonged to the randomly-selected sample.



	Total			Intervention			Control		
	n	%	M (SD)	n	%	M (SD)	n	%	M (SD)
<b>SCHOOL CHARACTERISTICS</b>									
<b>Management type</b>									
Federal	242	84.0%		124	85.5%		118	82.5%	
State	23	8.0%		11	7.6%		12	8.4%	
Private	23	8.0%		10	6.9%		13	9.1%	
<b>Geographic area</b>									
Urban	232	80.6%		120	82.8%		112	78.3%	
Rural	56	19.4%		25	17.2%		31	21.7%	
<b>Level of marginalization</b>									
Very low	108	37.5%		46	31.7%		62	43.3%	
Low	105	36.5%		54	37.2%		51	35.7%	
Medium	51	17.7%		32	22.1%		19	13.3%	
High	20	6.9%		9	6.2%		11	7.7%	
Very high	4	1.4%		4	2.8%		0	0.0%	
N° students assessed			7 (4.5)			7 (4.8)			7 (4.1)
Student enrollment			123 (64.9)			122 (65.7)			123 (64.3)
<b>Tier of implementation</b>									
School-wide	226	78.5%		112	77.2%		114	79.7%	
Principals only	21	7.3%		12	8.3%		9	6.3%	
Teachers only	41	14.2%		21	14.5%		20	14.0%	
<b>STUDENT CHARACTERISTICS</b>									
<b>Gender</b>									
Female	963	49.8%		492	50.1%		471	49.5%	
Male	971	50.2%		491	49.9%		480	50.5%	
<b>Grade</b>									
1 (3-year-olds)	206	10.6%		89	9.0%		117	12.3%	
2 (4-year-olds)	837	43.3%		456	46.4%		381	40.1%	
3 (5-year-olds)	891	46.1%		438	44.6%		453	47.6%	

Table 2. School and Student Characteristics by Treatment and Control Status

Schools were evenly distributed among Sinaloa's 18 municipalities. 82% ( $n = 344$ ) were located in urban areas and 18% ( $n = 77$ ) were located in rural areas. 77% ( $n = 325$ ) were located in areas with very low or low levels of marginalization<sup>6</sup>, 38% ( $n = 161$ ) and 39% ( $n$

<sup>6</sup> Based on the Marginalization Index, a summary measure that combines indicators of adult illiteracy, lack of basic education, lack of access to sanitation, water and electricity, unfinished flooring, overcrowding, rurality, and low income to determine the degree of marginalization in a state or municipality. The index is constructed by Mexico's Population Council (*Consejo Nacional*

= 164), respectively; 16% ( $n = 67$ ) were located in areas with medium levels of marginalization and 7% ( $n = 24$ ) in areas with high or very high levels of marginalization, 6% ( $n = 24$ ) and 1% ( $n = 5$ ), respectively. 84% ( $n = 352$ ) of schools were public, 73% ( $n = 307$ ) run by the federal government and 11% ( $n = 45$ ) by the state of Sinaloa; 16% ( $n = 69$ ) were private, and average school enrollment was 114 students ( $SD = 67$ ). In terms of how Educating for Well-being was implemented in schools, the majority of schools had both principals and teachers participate: 70% ( $n = 296$ ) received school-wide implementation, 16% ( $n = 67$ ) received teacher-only implementation and 14% ( $n = 58$ ) received principal-only implementation. As for educators, 99% ( $n = 2,148$ ) were female and 1% ( $n = 14$ ) were male, with the average age being 38 ( $SD = 10$ ). 64% ( $n = 1,388$ ) of participants were married, while 28% ( $n = 598$ ) were single and 8% ( $n = 176$ ) were divorced or widowed, 6% ( $n = 128$ ) and 2% ( $n = 48$ ), respectively. In terms of socioeconomic level<sup>7</sup>, 60.5% ( $n =$

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*de Población*, or CONAPO) using census data collected by the National Institute of Statistics and Geography (*Instituto Nacional de Estadística y Geografía*, o INEGI). The index is also used to group geographic areas into 5 ordinal categories (using Dalenius and Hodges's optimum stratification): very low, low, medium, high and very high. The present study uses marginalization levels calculated with 2020 census data, which in some cases is representative at the neighborhood level. Each preschool was matched with the most disaggregated marginalization level available for their location.

<sup>7</sup> Socioeconomic data was collected 12 months after the scheduled completion of the professional development program in June 2022 (T4) for 2,138 participants (99% of the sample of 2,162 participants), using an index elaborated by the Market and Public Opinion Research Association

1,293) of participants have a relatively high level (A/B), 38% ( $n = 812$ ) have a medium level (C+, C or C-) and 1.5% ( $n = 33$ ) have a low level (D+, D or E). 18% ( $n = 395$ ) of participants were principals and 82% ( $n = 1,767$ ) were teachers. Prior to participating in the intervention, 32% ( $n = 685$ ) of participants had received some form of training on socio-emotional skills. As for students, 50% ( $n = 1,206$ ) were female and 50% ( $n = 1,217$ ) were male, with the majority being 4-5 years old: 12% ( $n = 286$ ) of students were enrolled in grade 1 (3-year-olds), 43% ( $n = 1,033$ ) were enrolled in grade 2 (4-year-olds) and 45% ( $n = 1,104$ ) were enrolled in grade 3 (5-year-olds).

### Randomization

The present study evaluates the efficacy of the Educating for Well-being in a representative sample of preschools in the state of Sinaloa during the COVID-19 pandemic, using a cluster randomized trial design with a waitlist control group. Randomization of schools to the intervention (treatment) or the waitlist control group was conducted using the baseline data collected from the registration survey, namely, to determine the sample blocks to be used (i.e., tier of implementation: principal-only, teacher-only or school-wide). Schools were randomly allocated into each of the experimental groups using a random-number

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(AMAI). This index considers factors such as the head of household's education, number of employed household members, access to internet and number of bedrooms, bathrooms and automobiles to determine a household's socioeconomic level. According to national data from 2020, 6.8% of Mexican households fall in the A/B level, 10.8% fall in the C+ level, 14.0% fall in the C level, 15.4% fall in the C- level, 15.2% fall in the D+ level, 27.8% fall in the D level and 10% fall in the E level.

sequence generated by the *randomize* command in Stata, resulting in 211 schools (1,090 participants and 1,247 students) being randomly assigned to the treatment condition and 210 schools (1,072 participants and 1,176 students) to the waitlist control condition.

A clustered randomized design was chosen primarily for three main reasons: 1) the intervention's theory of change, 2) internal validity concerns, and 3) ease of implementation. First, Educating for Well-being adopts a school-wide implementation approach to socioemotional learning, targeting both teachers and principals with the end goal of improving students socioemotional and academic outcomes. Secondly, randomization at the individual level, despite being recommended for reducing between-school variability and increasing statistical power, would nonetheless threaten the study's internal validity due to spillover of intervention effects from the treatment to the control group. Given the relatively large sample of schools, statistical power is less of a concern than internal validity. Finally, individual-level randomization is more difficult to implement with large sample sizes. For the present study, it would require the close monitoring of 2,162 individuals as opposed to 421 schools.

Schools assigned to the treatment condition received Educating for Well-being over the course of two academic years. Participants completed the professional development program in the first half of 2021 (second semester of the 2020-2021 school year), starting right after baseline data collection and randomization and finishing at the start of the 2021-2022 school year (the scheduled end date of July 2021 was extended to account for school closures and other consequences of the COVID-19 pandemic). Students benefited from the implementation of the SEL curriculum during the 2021-2022 school year. Schools assigned

to the waitlist control condition received Educating for Well-being during the 2022-2023 school year. Participants completed the professional development program between the first and second semesters (September 2021 to April 2023) and received the SEL curriculum to implement with students at their discretion.

### **Intervention**

Educating for Well-being is a systemic, school-wide intervention designed to improve educators' self-awareness, emotion regulation, prosocial skills and behaviors, efficacy and well-being, school climate and student outcomes through a contemplative-based professional development program for educators and the implementation of a SEL curriculum with students. The professional development program for educators comprises a 10-hour synchronous introductory workshop, and a 60-hour asynchronous online professional development course, with three 3.5-hour booster sessions delivered synchronously after each module. The SEL curricula, 10 Agreements (for PreK-1 and Prek-2) or Siconautas (for PreK-3), are year-long programs that adopts a school-wide approach to SEL.

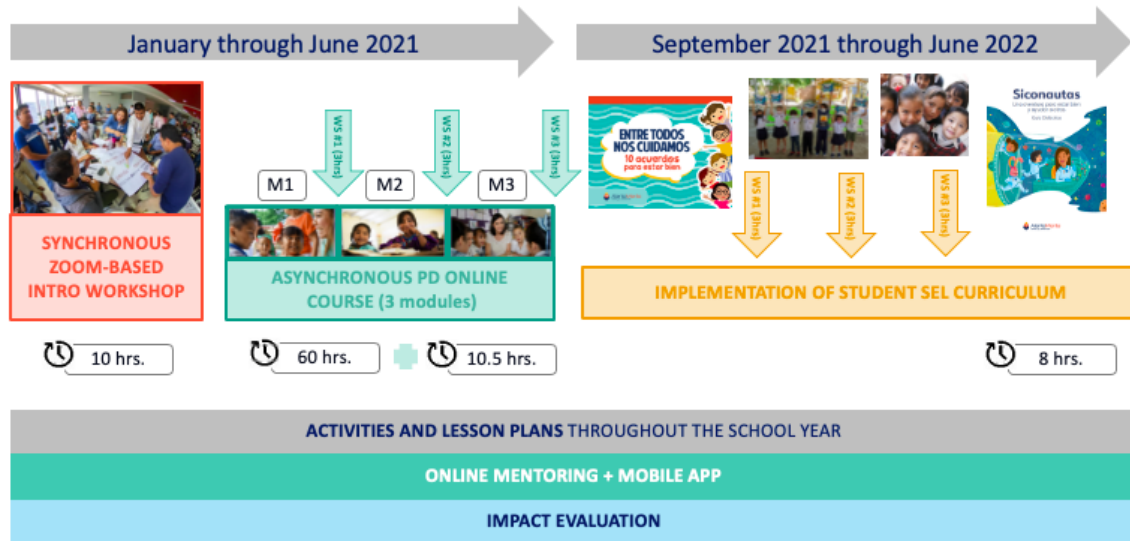


Figure 2. Summary of the Educating for Well-being Intervention

In the introductory workshop, educators learn the importance of SEL and get an overview of the socioemotional competencies they will develop in themselves and their students through the program. This synchronous component was delivered in 10 hours, over five 2-hour Zoom sessions scheduled every other day between January 22 and February 3, 2021. In the online professional development course, educators delve deeper into each socioemotional competency, learn strategies for personally developing that competence, and have opportunities to practice these strategies both on their own and in everyday interactions with students and other members of the school community. They also receive support for developing these competencies in their students and implementing the SEL curricula. The first module focuses on the fundamentals of SEL and well-being, exploring purpose and motivation, and attention regulation, the second on emotional awareness and regulation, and the third on fostering prosocial skills and behaviors (i.e., empathy, kindness, compassion, gratitude, appreciation, and generosity). This asynchronous component was

delivered through three 20-hour modules (60 hours in total). Once they had completed the introductory workshop, educators gained access to the online platform and had approximately 2 months to complete each module. Each module was complemented with a synchronous 3.5-hour booster session delivered via two Zoom sessions (henceforth called “TRIP”, short for the session name in Spanish). These TRIPS focus on strengthening the implementation of the children’s curricula emphasizing expert modeling and peer reflection. The first TRIP was held on March 10th and 17th, the second was held on May 12th and 19th, and the third was held on June 23rd and 30th.

Upon program completion, educators not only received certification from AtentaMente, but could also validate the course with the Ministry of Education and count it towards their required hours of professional development. To be eligible for this certification and validation, educators were required to have met the following requirements: attendance rate of at least 80% for the introductory workshop and three TRIPs, completion of 75% of each online module in a satisfactory manner, submission of the final projects for the second and third online course module.

During the 2021-2022 academic year, educators received support for implementing the “10 Agreements” and “Siconautas” programs in their schools. Besides being provided with curriculum, lesson plans, and other program materials, educators attended three additional 2-hour TRIP sessions. These sessions were designed to offer further assistance for the successful rollout of the SEL curriculum in schools and classrooms. The first session took place on December 1, 2021, the second on February 1, 2022, and the third on April 8, 2022.

### Fidelity and quality

To ensure that the PD program was implemented with fidelity, all intervention schools received the same online training delivered by a single set of instructors. These instructors followed a heavily scripted layout (i.e., slide per slide instructions) for each training session, and all sessions were practiced in full before being delivered. To measure the quality of each session, observers reviewed the extent to which trainers diverged from the scripted layout. Adherence was high, with an average of over 85% of content being delivered according to the scripted layout.

To promote that the SEL curriculum was implemented with fidelity, all intervention schools received the same curricula, lesson plans and other materials, and participated in the same online training and support. However, we did not collect data relating to fidelity of implementation of the SEL curriculum. We only collected self-reported measures on dosage at the end of the 2021-2022 school year.

### **Data Collection**

Data was collected primarily from educators using self-report measures and assessments of student outcomes and complemented with process and administrative data.

### Self-report measures and assessments

Data collection took place at four moments in time: before the start of the intervention in January 2021 (T1), at the scheduled completion of the professional development program in July 2021 (T2), three months after the scheduled completion of the professional development program in October 2021 (T3), at which time educators were beginning to



implement the SEL curriculum with students, and 12 months after the scheduled completion of the professional development program in June 2022 (T4), at which time implementation of the children curriculum had ended. At each data collection point, educators in both the treatment and control group completed an online questionnaire comprising a series of self-report measures. The T1 and T2 questionnaires included 15 self-report measures and took about 40 minutes to complete. The T3 and T4 questionnaires were shortened to include only 8 and 14 of these self-report measures, respectively, which reduced completion time to approximately 25 and 35 minutes, respectively. At T3 and T4, teachers were also asked to complete an assessment of student outcomes for a randomly selected group of their students (minimum of 3, maximum of 5). All questionnaires included an initial section of questions about participant characteristics and, for educators in the treatment group, a final section of questions about acceptability and feasibility of the intervention. In the main section of self-report measures, items were grouped by measure and not randomized.

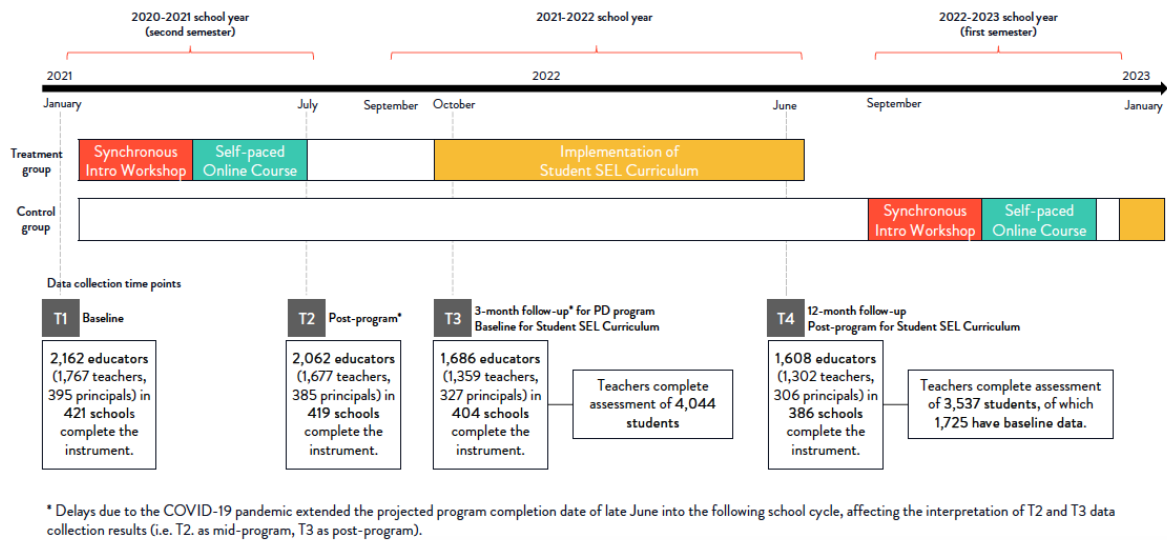


Figure 3. Intervention and Data Collection Timeline

It should be noted that the intervention and data collection for the study spanned two school years: the professional development program and data collection points T1 and T2 took place in the second semester of the 2020-2021 school year, while implementation of the SEL curriculum with students and data collection points T3 and T4 took place in the 2021-2022 school year. As T3 data was collected at the start of the 2021-2022 school year and included an assessment of student outcomes prior to SEL, it can also be considered a baseline data collection point for the SEL curriculum. Similarly, T4 data was collected at the end of the 2021-2022 school year and included an assessment of student outcomes after 8 months of implementing SEL and can thus be considered a post-program data collection point for the student SEL curriculum.

### Process and administrative data

Data on attendance to synchronous activities, progress in each module of the online course, app use, completion of program requirements, program satisfaction, and implementation of the SEL curriculum were collected by AtentaMente throughout the implementation of the intervention. Weekly progress reports were generated from information collected from platforms such as Zoom, YouTube, Google Forms, SurveyMonkey, EdX, and AtentaMente's app analytics.

Administrative data on schools' characteristics, enrollment, attendance, and student assessment data was provided by the Ministry of Education. Data on school characteristics from the 2019-20 school year were used for the research design, while student assessment data from the 2020-21 school year was used to identify student cohorts and the frequency of teacher contact (a key indicator of engagement with remote education in the context of school closures during the pandemic) used for the student sampling frame. Enrollment, attendance and student assessment data from the 2021-22 and 2022-23 school years will be used to construct outcome indicators.

### **Measures**

Measures were selected based on Educating for Well-being's theory of change, proposing that the intervention has direct effects on educators' socioemotional competences, self-efficacy and well-being, as well as indirect effects on students' socioemotional and academic outcomes. Previous research informed the selection of self-report measures, which collect information on educators' self-awareness, emotion regulation, prosocial skills and behavior, self-efficacy, and psychological distress/well-being. Assessments of student

outcomes were selected based on research of similar interventions (Flook et al, 2015). All scales were evaluated for validity and reliability at each data collection point. A review of available administrative data and collaboration with the Ministry of Education allowed for the inclusion of additional educator and student outcomes aligned with the intervention's logic model.

### Educator outcomes

#### *Self-awareness*

To assess educators' self-awareness, we used four measures. One to assess mindfulness as it applies to classroom interactions, one for attention regulation, and one for purpose, and one for emotional awareness.

The first measure used was the Interpersonal Mindfulness subscale of the Mindfulness in Teaching Scale (MTS; (Frank et al., 2016)). This 5-item scale measures mindful awareness and regulation as applied to classroom interactions (i.e., "I listen carefully to my student's ideas, even when I disagree with them"). Participants rate how true each statement is for them on a 5-point Likert type scale (1 *\_ never true* to 5 *\_ always true*).

The second measure used was the Awareness subscale of the Healthy Minds Index (HMI-A; (Kral et al., in review)). This 4-item scale measures a heightened, flexible attentiveness to one's environment and internal cues such as bodily sensations, thoughts and feelings (i.e., "I can notice my thoughts as soon as I have them"). Participants rate how often they felt a certain way using a 5-point Likert-type scale (1 *\_ none of the time* to 5 *\_ all of the time*).

The third measure used was the Purpose subscale of the Healthy Minds Index (HMI-P; (Kral et al., in review)). This 4-item scale measures the ability to be clear about one's core values and deeper motivation and able to apply them in one's daily life (i.e., "I have general life goals that make my daily activities worth doing"). Participants rate how often they felt a certain way using a 5-point Likert-type scale (1 *\_ not at all* to 5 *\_ to the highest degree*).

The final measure used was the Emotional Awareness subscale of the Socio-emotional Competences Inventory (in Spanish, *Inventario de Competencias Socioemocionales*, or ICSE; (Mikulic et al., 2015), which is an instrument designed to assess a set of nine competencies in Spanish-speaking adults: assertiveness, self-efficacy, autonomy, emotional awareness, expressive communication, empathy, optimism, prosocial behavior, and emotion regulation. This 8-item scale measures the degree to which a person understands, substantiates, and labels emotions (i.e., reverse item: "I have trouble realizing what it is I am feeling"). Participants rate how often they felt a certain way using a 4-point Likert-type scale (1 *\_ never* to 4 *\_ always*).

### *Emotion regulation*

To assess educators' emotion regulation, we used six measures. One to assess emotion regulation beliefs, four for emotion regulation strategies, and one for trait emotion regulation (O'Connor et al., 2019).

The first measure used was the Implicit Theories of Emotion Scale (ITES; (Tamir et al., 2007)). This 4-item scale assesses beliefs about the nature of emotions, consisting of two

items that reflect the malleable nature of emotions (i.e., “everyone can learn to control their emotions”) and two items that reflect the fixed nature of emotions (i.e., reverse item: “The truth is, people have very little control over their emotions”). Participants rate the extent to which they agree with a certain statement using a 6-point Likert-type scale (1 \_ *strongly disagree* to 6 \_ *strongly agree*).

The second measure used was the Emotion Regulation Questionnaire (ERQ; (Gross & John, 2003)). This 10-item scale measures adaptive and maladaptive emotion regulation strategies using the subscales of cognitive reappraisal (i.e., “When I’m faced with a stressful situation, I make myself think about it in a way that helps me stay calm”) and expressive suppression (“I keep my emotions to myself”), respectively. Participants rate the extent to which they agree with a certain statement on a 7-point Likert-type scale (1 \_ *strongly disagree* to 7 \_ *strongly agree*). The cognitive reappraisal subscale (6 items) is used to capture the strategy of cognitive change, while the expressive suppression subscale (4 items) is used to capture the response modulation strategy.

The fourth measure used was the Multidimensional Assessment of Interoceptive Awareness (MAIA; (Mehling et al., 2012)), which is an instrument designed to assess interoceptive body awareness as a multidimensional concept: noticing, not distracting, not worrying, attention regulation, emotional awareness, self-regulation, body listening and trusting. The present study makes use of only one of the subscales: Self-regulation. This 4-item subscale measures a person’s ability to regulate psychological distress by attention to body sensations (i.e., “when I feel overwhelmed, I can find a calm place inside”). Participants rate how often they felt a certain way using a 5-point Likert-type scale (1 \_ *never* to 5 \_

*always*). The MAIA self-regulation subscale is used to capture the emotion regulation strategy of attentional deployment.

The fifth measure used was the Insight subscale of the Healthy Minds Index (HMI-I; (Kral et al., in review)). This 3-item scale measures self-knowledge concerning how one's emotions, thoughts and beliefs shape experiences and sense of self (i.e., "When I am interacting with someone, I reflect on how my feelings are causing me to treat them a certain way"). Participants rate how often they felt a certain way using a 5-point Likert-type scale (1 \_ *none of the time* to 5 \_ *every time*). The HMI-I subscale is used to capture the emotion regulation strategy of cognitive change.

To assess trait emotion regulation, the last measure used was the Emotional Regulation subscale of the ICSE. This 7-item scale measures the degree to which a person is able to maintain, augment or suppress their current emotional state (i.e., "I am able to keep calm when someone offends me"). Participants rate how often they felt a certain way using a 4-point Likert-type scale (1 \_ *never* to 4 \_ *always*).

#### *Prosocial skills and behaviors*

Four measures were used to assess educators' prosocial skills and behaviors. One to measure empathy, one to measure compassion, one to measure sense of connection with others, and one to measure prosocial behavior intentions.

The first measure used was the Interpersonal Reactivity Index (IRI; (Davis, 2011)), which operationalizes dispositional empathy as a set of four separate but related constructs. The present study makes use of two constructs to measure the cognitive aspect of empathy (Perspective Taking), the emotional aspect of empathy (Empathetic Concern) and, taken together, a global concept of empathy. The Perspective Taking subscale is comprised of 7 items that measure the tendency to spontaneously adopt the perspectives of other people and see things from their point of view (i.e., “I sometimes try to understand my friends better by imagining how things look from their perspective”). The Empathetic Concern subscale comprises 7 items that measure the tendency to experience feelings of sympathy and compassion for unfortunate others (“I often have tender, concerned feelings for people less fortunate than me”). Participants rate how well a statement describes them using a 5-point Likert-type scale (1 \_ *does not describe me well* to 5 \_ *describes me very well*).

The second measure used was the Compassion Scale (CS; (Pommier et al., 2020)). This 16-item scale measures compassion for others, operationalized as experiencing kindness (i.e. “If I see someone going through a difficult time, I try to be caring toward that person”), a sense of common humanity (i.e. “I realize everyone feels down sometimes, it is part of being human”), mindfulness (i.e. “I pay careful attention when other people talk to me about their troubles”) and lessened indifference toward the suffering of others (i.e. “I am unconcerned with other people’s problems”). Participants rate how often they felt or behaved a certain way using a 5-point Likert-type scale (1 \_ *almost never* to 6 \_ *almost always*).



The third measure used was the Connection subscale of the Healthy Minds Index (HMI-C; (Kral et al., in review)). This 6-item scale measures feelings of care and kinship toward other people, promoting supportive relationships and supportive interactions (i.e., “I care about the problems of people all over the world”). Participants rate how often they felt a certain way using a 5-point Likert-type scale (for items 5 to 7, 1 \_ *not at all* to 6 \_ *to the highest degree*; for items 8 to 10, 1 \_ *never* to 5 \_ *always*).

The final measure used was the Prosocial Behavioral Intentions Scale (PBIS; (Baumsteiger & Siegel, 2019)). This 4-item scale measures a person’s readiness to help others as a proxy for assessing prosocial behavior (i.e., willingness to “comfort someone I know after they experience a hardship”). Participants rate how willing they would be to perform a certain behavior using a 7-point Likert-type scale (1 \_ *definitely not do this* to 7 \_ *definitely would do this*).

### *Self-Efficacy*

Two measures were used to assess educators’ self-efficacy. One for teachers and one for principals.

The first measure used was the Teachers’ Sense of Efficacy Scale Short Form (TSES; (Tschannen-Moran & Hoy, 2001)). This 12-item scale measures teachers’ beliefs in their capability to make a difference in student learning, even among those students who are difficult or unmotivated. Teacher efficacy is assessed in three ways: efficacy in instructional strategies (i.e., “To what extent can you craft good questions for your students?”), efficacy in student engagement (i.e., “How much can you do to motivate

students who show low interest in school work?") and efficacy in classroom management (i.e. "How much can you do to control disruptive behavior in the classroom?"). Participants rate how much they can do in response to various classroom and instructional challenges on a 9-point Likert scale (1 \_ *not at all* to 9 \_ *a great deal*).

The second measure used was the Principals' Sense of Efficacy Scale (PSES; (Tschannen-Moran & Gareis, 2004)), which measures principals' beliefs in their capability to make a difference in the schools they lead and effectively manage the challenges they face.

Principal efficacy is assessed in three ways: efficacy in instructional leadership (i.e., "To what extent can you facilitate student learning in your school?"), efficacy in management (i.e., "To what extent can you prioritize among competing demands of the job?") and efficacy in moral leadership (i.e., "To what extent can you promote the prevailing values of the community in your school?"). The present study reduces the original 18-item scale (6 items per subscale) to a 12-item scale (4 items per subscale). Participants rate how much they can do in response to various leadership challenges on a 9-point Likert scale (1 \_ not at all to 9 \_ a great deal).

To report aggregate estimates of educators' efficacy, the TSES and PSES are used interchangeably.

#### *Psychological distress/Well-being*

Five measures were used to assess educators' psychological distress. The first three measures captured the three components of burnout: Emotional exhaustion,

depersonalization, and personal accomplishment. The last two measured anxiety and depression, respectively.

The first measure used was the Emotional Exhaustion subscale of the Maslach Burnout Inventory (MBI; (Maslach et al., 1997)), which measures feelings of being emotionally overextended and exhausted by one's work (i.e. "I feel emotionally drained from my work"). Participants rate how often they felt a certain way using a 6-point Likert-type scale (1 \_ *never* to 6 \_ *every day*). While teachers completed the 9-item subscale from the MBI - Educators' Survey (MBI-ES), principals completed the 5-item subscale from the MBI - General Survey (MBI-GS). To report aggregate estimates of educators' sense of emotional exhaustion, the respective subscales of the MBI-ES and MBI-GS are used interchangeably, taking the average score to address the different number of items in each subscale.

The second measure used was the Depersonalization subscale of the Maslach Burnout Inventory (MBI; Maslach et al., 1996), which measures an unfeeling and impersonal response toward recipients of one's instruction (i.e., "I don't really care what happens to some students"). Participants rate how often they felt a certain way using a 6-point Likert-type scale (1 \_ *never* to 6 \_ *every day*). While teachers completed the 5-item subscale from the MBI - Educators' Survey (MBI-ES), principals completed the 5-item subscale from the MBI - General Survey (MBI-GS). In order to report aggregate estimates of educators' sense of depersonalization, the respective subscales of the MBI-ES and MBI-GS are used interchangeably.

The third measure used was the Personal Accomplishment subscale of the Maslach Burnout Inventory (MBI; Maslach et al., 1997), which measures feelings of competence and successful achievement in one's work (i.e., "I have accomplished many worthwhile things in this job"). Participants rate how often they felt a certain way using a 6-point Likert-type scale (1 *\_ never* to 6 *\_ every day*). While teachers completed the 8-item subscale from the MBI - Educators' Survey (MBI-ES), principals completed the 6-item subscale from the MBI - General Survey (MBI-GS). In order to report aggregate estimates of educators' sense of personal accomplishment, the respective subscales of the MBI-ES and MBI-GS are used interchangeably, taking the average score to address the different number of items in each subscale.

The fourth measure used was the 7-item Generalized Anxiety Disorder Scale (GAD-7; (Spitzer et al., 2006)) from the Patient Health Questionnaire. This scale measures generalized anxiety symptoms (i.e., "feeling nervous, anxious, or on edge"). Participants rate how often they were bothered by a certain problem during the last 2 weeks, using a 4-point Likert-type scale (1 *\_ not at all* to 4 *\_ nearly every day*).

The final measure used was the 8-item Depression Scale from the Patient Health Questionnaire (PHQ-8; (Kroenke & Spitzer, 2002)). This scale measures depressive symptoms (i.e., "feeling down, depressed, or hopeless"). Participants rate how often they were bothered by a certain problem during the last 2 weeks, using a 4-point Likert-type scale (1 *\_ not at all* to 4 *\_ nearly every day*).

## Other educator outcomes

### *SEL Beliefs*

A single measure was used to assess educators' beliefs about SEL at baseline: the Teachers' SEL Beliefs Scale (TSELS; (Brackett et al., 2012). This 12-item scale measures teachers' beliefs about SEL along three dimensions: *comfort* with teaching SEL (i.e. "I feel confident in my ability to provide instruction on social and emotional learning"), *commitment* to learning about SEL (i.e. "I would like to attend a workshop to learn how to develop my students' social and emotional skills") and perceptions about whether their school *culture* supports SEL (i.e. "My principal creates an environment that promotes social and emotional learning for our students"). Participants rate the extent to which they agree with a certain statement using a 6-point Likert-type scale (1 \_ *strongly disagree* to 6 \_ *strongly agree*). While teachers completed the full version of the scale, a reduced version was used for principals (4 items, 2 from the Commitment subscale and 2 from the Culture subscale).

### *Absenteeism, sick leave, and turnover*

Attendance data will be used to create indicators of absenteeism in general, while data on sick leaves will be used to create indicators for health- and stress-related absences.

Additionally, administrative data will be used to create indicators for turnover (within and between school years).

## Student outcomes

### *Socioemotional competencies*

One teacher-reported measure was used to assess students' socioemotional competences. Social Competence Scale (Teacher) (SCT; (Corrigan, 2002)) is a 17-item scale that measures several dimensions of social behavior including prosocial behavior (i.e., show empathy and compassion for others feelings), emotional regulation (i.e. stop and calm down when excited or upset), and academic competence (i.e. able to effectively set goals and work towards them). Each item has two parts: the first allows the teacher to rate the frequency of individual behaviors (on a 6-point Likert-type scale: 1 *\_almost never* to 6 *\_almost always*), while the second allows the teacher to rate improvement in the behavior over the course of the school year (on a 7 point Likert-type scale: 0 *\_much worse* to 7 *\_much improved*). The present study makes use of the Prosocial Behavior and Emotional Regulation subscales. While only the first part of each item is used in the T3 questionnaire (to assess baseline competences), both parts are used in the T4 questionnaire.

### *Absenteeism and dropout*

Attendance data will be used to create indicators of absenteeism, while enrollment data will be used to create indicators for dropout.

### Feasibility and acceptability

Feasibility of Educating for Well-being was evaluated for all the intervention's components. For the professional development program, measures included an attendance rate of at least 80% for synchronous components, program completion rates, and self-reported contemplative practice and app usage. Feasibility of SEL curriculum

implementation was assessed using self-reports of the number of activities implemented with students.

Acceptability was measured using questions about participants' satisfaction with the intervention (rated on a scale of 1 to 10) and whether they would recommend Educating for Well-being to friends, colleagues or family members (on a scale of 1 to 10). Additionally, participants were asked about their perceptions of the personal and professional benefits derived from the intervention (i.e., "I feel I have the knowledge and tools to face the upcoming school year"), rating the extent to which they agree with a certain statement using a 6-point Likert-type scale (1 \_ *strongly disagree* to 6 \_ *strongly agree*).

### **Statistical Analyses**

The study design and statistical analyses follow the standards laid out by the U.S. Department of Education's What Works Clearinghouse to assess the efficacy of the program (What Works Clearinghouse, 2020). This includes the use of an experimental design in which preschools (clusters) are randomly assigned into a treatment or control group, low cluster-level attrition, limiting the analytical sample to educators for whom baseline data was collected and students who were randomized for assessment (limiting the risk of bias due to educators and students entering preschools included in the study), and low levels of nonresponse. Furthermore, equivalence between schools, educators and students in the treatment and control groups is assessed at baseline to ensure randomization was successful, as well as in each follow-up round to ensure attrition and non-response did not introduce imbalance between the groups. In meeting these standards, a complete case

analysis is an acceptable approach to provide unbiased estimates of the effectiveness of the intervention<sup>8</sup>.

All analyses were conducted in R (R Core Team, 2021) on a complete case (listwise deletion of cases with missing outcome data) basis, using all preschools, educators and students in the groups to which they were randomly assigned irrespective of whether or not they actually received the intervention. Due to pandemic-related challenges in meeting the implementation timeline, only 25% of participants had completed the professional development program by T2 (originally planned to be a post-program data collection point), while 69% of participants had done so at T3 (originally planned to be a follow-up data collection point). As such, T2 cannot be interpreted as a post-program assessment for everyone and T3 could be interpreted as a second post-program assessment<sup>9</sup> including participants with varying lengths of time since completion: between 2 and 3 months (17% of participants), between 1 and 2 months (16% of participants) and less than a month (11% of participants). To address this issue of variation in program completion at T3, we include a covariate for the number of days since T2 that each participant completed the program.

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<sup>8</sup> According to What Works Clearinghouse, a complete case analysis is an acceptable approach to provide unbiased estimates of the effectiveness of an intervention. However, it requires a more restrictive assumption that the missing data do not depend on measured factors.

<sup>9</sup> Further data analysis is planned to explore the persistence of intervention effects for those participants who completed the program at T2 (or at any moment before T3), by predicting compliance based on observable characteristics and using this to identify a valid control group for subgroup analysis.



However, it should be noted that 31% of participants in schools assigned to the treatment condition did not complete the full program<sup>10</sup>.

Each table of results presents an impact estimate (effect size), p-value indicating statistical significance (at the 99%, 95% and 90% confidence levels), improvement index (EI), and the intraclass correlation coefficient (ICC) for each outcome measure. Cohen's *d* is presented as an estimate of the effect size<sup>11</sup>. False discovery rate correction (FDR;

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<sup>10</sup> As an exploratory analysis to avoid underestimating the effect of the program, the complier average causal effect (CACE) was estimated. This was done using an instrumental variables (IV) estimator, where randomization is the instrument and treatment is defined by: 1) having completed all program requirements at the moment of data collection and 2) having completed the first 5 program requirements (i.e., no final projects) at the moment of data collection (only estimated at T2). The former provides an estimate of the average effect for participants who completed the program, while the latter allows for an exploration of intervention effects by treatment intensity (dosage). The results of this analysis suggest that there are larger effects for participants who completed *all* program requirements but should be taken with caution due to potential issues with the validity of IV estimator.

<sup>11</sup> As recommended by the What Works Clearinghouse (What Works Clearinghouse, 2020), improvement indices were computed by calculating the difference between the percentile rank of the average participant in the treatment group and that of the average participant in the control group. To calculate Cohen's *d*, we divide the coefficient of interest (for the variable that indicates assignment to the intervention group) by the standard deviation of the residual of the hierarchical

Benjamini & Hochberg, 1995) was used to account for the number of statistical tests performed across all tests within each timepoint and adjusted p-values are presented.

Effect sizes are interpreted using Kraft's benchmarks for educational interventions: less than 0.05 is *small*, 0.05 to less than 0.20 is *medium* and 0.20 or greater is *large* (Kraft, 2020). These benchmarks are based on RCTs evaluating education interventions in real-world settings, and as such are more appropriate for interpreting the impact of Educating for Well-being.

### **Primary analysis**

The impact of Educating for Well-being on educator outcomes was estimated using a two-level random-intercept model, clustering educators within schools and controlling for a set of school- and educator-level covariates. School-level covariates include management type, level of marginalization, and tier of implementation. Educator-level characteristics include gender, age and baseline scores on each outcome. Intervention impact is estimated at T2, T3 and T4. In a simplified form, the model can be expressed as follows:

$$Y_{ij} = \beta_0 + \beta_1 \cdot Intervention_{ij} + \beta_2 \cdot X_{ij} + u_j + \epsilon_{ij}$$

where:

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model. The intraclass correlation coefficients were calculated using the “icc” function from the mlmhelp package in R. This function calculates the ICC for linear mixed-effects models estimated with the “lmer” function of the lme4 package (Bates et al., 2015).

- $Y_{ij}$  is the outcome for educator  $i$  in school  $j$ .
- $\beta_0$  is the intercept.
- $\beta_1$  is the coefficient for the intervention, capturing its effect on the outcome.
- $Intervention_{ij}$  is a binary indicator for whether educator  $i$  in school  $j$  received the intervention.
- $\beta_2$  is a vector of coefficients for the educator- and school-level covariates.
- $X_{ij}$  is a vector of educator- and school-level covariates for educator  $i$  in school  $j$ , including gender, age, management type, level of marginalization, tier of implementation, and baseline scores on each assessment.
- $u_j$  is the random effect for school  $j$ , accounting for the clustering of educators within schools.
- $\epsilon_{ij}$  is the residual error term for educator  $i$  in school  $j$ .

The impact of Educating for Well-being on student outcomes was estimated using a three-level random-intercept model, clustering students within teachers and schools and controlling for a set of school- and student-level covariates. School-level covariates include management type, level of marginalization, and tier of implementation. Student-level characteristics include gender, grade and school-level averages for the baseline assessment scores. Intervention impact is estimated at T4, directly after the implementation of the SEL curriculum for children. The model can be expressed as follows:

$$Y_{ijk} = \beta_0 + \beta_1 \cdot Intervention_{ijk} + \beta_2 \cdot X_{ijk} + u_j + u_k + \epsilon_{ijk}$$

where:

- $Y_{ijk}$  is the outcome for student  $i$  with teacher  $j$  in school  $k$ .

- $\beta_0$  is the intercept.
- $\beta_1$  is the coefficient for the intervention, capturing its effect on the outcome.
- $Intervention_{ijk}$  is a binary indicator for whether student  $i$  with teacher  $j$  in school  $k$  received the intervention.
- $\beta_2$  is a vector of coefficients for the student- and school-level covariates.
- $X_{ijk}$  is a vector of student- and school-level covariates for student  $i$  with teacher  $j$  in school  $k$ , including gender, grade, management type, level of marginalization, tier of implementation, and school-level averages for the baseline assessment scores.
- $u_j$  is the random effect for teacher  $j$ , accounting for the clustering of students within teachers.
- $u_k$  is the random effect for school  $k$ , accounting for the clustering of teachers (and thus students) within schools.
- $\epsilon_{ijk}$  is the residual error term for student  $i$  with teacher  $j$  in school  $k$ .

This model estimates the impact of the intervention at T4, directly after the implementation of the SEL curriculum, at the end of the school year. The random effects  $u_j$  and  $u_k$  capture the correlation of outcomes within teachers and schools, respectively. This hierarchical structure allows for the estimation of intervention effects while properly accounting for the nested structure of the data.

### **Moderation analyses**

For the secondary research questions 4 and 5 concerning the moderation effects, our approach was separated in two phases: moderation analysis followed by subgroup analysis.

For the moderation analysis, first, the moderating variables were dummy-coded as follows: teachers (0) and principals (1) for occupation; low marginalization level (0) and medium to high levels of marginalization (1) for school marginalization level; and teacher/principal-only implementation (0) and school-wide implementation (1) for tier of implementation. Then, to test moderation, interaction terms were created using these dichotomous variables by first computing the product of the dummy-coded variable for each moderator and the intervention condition, and then adding this interaction term into the corresponding models for the primary analyses for educators and students respectively. The subgroup analyses were conducted by running the outcome analysis model separately for each subgroup (i.e., teachers and principals; educators/students in schools with a low marginalization level and those in schools with medium to high levels of marginalization; educators/students in schools with teacher/principal-only implementation and those in schools with school-wide implementation of Educating for Well-being).

### **Missing data analysis**

The amount of missing outcome data was summarized at each time point, overall and for treatment and control groups. Though data is assumed to be missing at random (and as such missing data is addressed using complete case analysis), a missing data analysis was conducted as a robustness check. A logistic regression was used to check for statistically significant predictors of missing outcome data at each time point, including group assignment, school-level covariates (management type, level of marginalization, and tier of implementation) and educator-level characteristics (gender, age and baseline scores on MBI's emotional exhaustion). Importantly, group assignment did not predict missing data at any time point.

## RESULTS

### Preliminary analyses

#### Descriptive and distributional properties of sample

The distributions of outcome variables at each time point were examined for normality (e.g., skewness, kurtosis). The histograms demonstrate a relatively normal distribution for most outcomes.

#### Attrition

Several strategies to minimize attrition were implemented during the data collection process, such as close monitoring of participants, follow-up from both AtentaMente and school supervisors, etc. This resulted in low levels of overall and differential attrition for the sample of educators and schools used to evaluate educator outcomes, in all moments of data collection. The analytic sample does not include any educators who entered the study schools after randomization (*joiners*), and the overall and differential attrition for the sample of educators was low at all moments of data collection: at T2, the overall attrition was 4.6%, while the differential attrition was 4.5%; at T3, the overall attrition was 22.0%, while the differential attrition was 3.9%; at T4, the overall attrition was 25.6%, while the differential attrition was 5.7%. Regarding school attrition, at T2, the overall attrition of schools was 0.5%, while the differential attrition was 0.9%; at T3, the overall attrition of schools was 4.0%, while the differential attrition was 1.4%; and at T4, the overall attrition of schools was 8.3%, while the differential attrition was 5.2%. As there is low school-level

attrition<sup>12</sup>, no risk of bias from participants entering schools and being included in the analytic sample, and is low educator-level attrition<sup>13</sup>, the findings of the present study related to educator outcomes meet What Works Clearinghouse group design standards without reservations (What Works Clearinghouse, 2020).

As for the sample of students, follow up data at T4 was only collected for about half of the 2,423 randomly-selected students assessed at baseline: 1,272 students in 250 schools. Nonetheless, data was collected for an additional 662 randomly-selected students in 38 of the schools in the original sample ( $n = 326$ ). To minimize school-level attrition and the risk of bias being introduced due to non-response of students, this larger sample of 1,934 students in 288 schools was selected for the analytic sample of the present study<sup>14</sup>. The

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<sup>12</sup> That is, the combination of overall and differential attrition falls within a tolerable threat of bias under both optimistic and cautious assumptions.

<sup>13</sup> The combination of overall and differential attrition falls within a tolerable threat of bias under both optimistic and cautious assumptions, except for T4. For an overall attrition rate of 25.6%, the differential attrition under cautious boundaries should be between 4.7 and 4.8%. However, the differential attrition rate of 5.7% falls within optimistic boundaries (between 9.0 and 9.2%), and there are no statistically significant differences at baseline between intervention and control groups for the analytic sample of educators at T4.

<sup>14</sup> Program impact was also estimated in the sample of 1,272 students for which both baseline and post-program data was collected. The results of this sensitivity analysis are very similar to those of the main analysis, evidencing the robustness of the present study's findings on the impact of Educating for Well-being on student outcomes.

overall attrition of schools was 11.7%, while the differential attrition was 3.1%. As for students, the overall nonresponse was 20.2%, while the differential nonresponse was 2.0%. It should be noted that the reference sample for calculating student-level nonresponse is *all* 1,934 students for which follow-up data was collected. The 662 students who are present at follow-up but not at baseline do not pose a risk of bias as they did not technically enter schools after randomization. That is, they were already enrolled in schools at the start of the year, and were identified in the random selection of students to be assessed by teachers. However, an assessment was not collected for them at that time. As such, the findings of the present study related to student outcomes meets What Works Clearinghouse group design standards without reservations (Institute of Education Sciences, 2020).



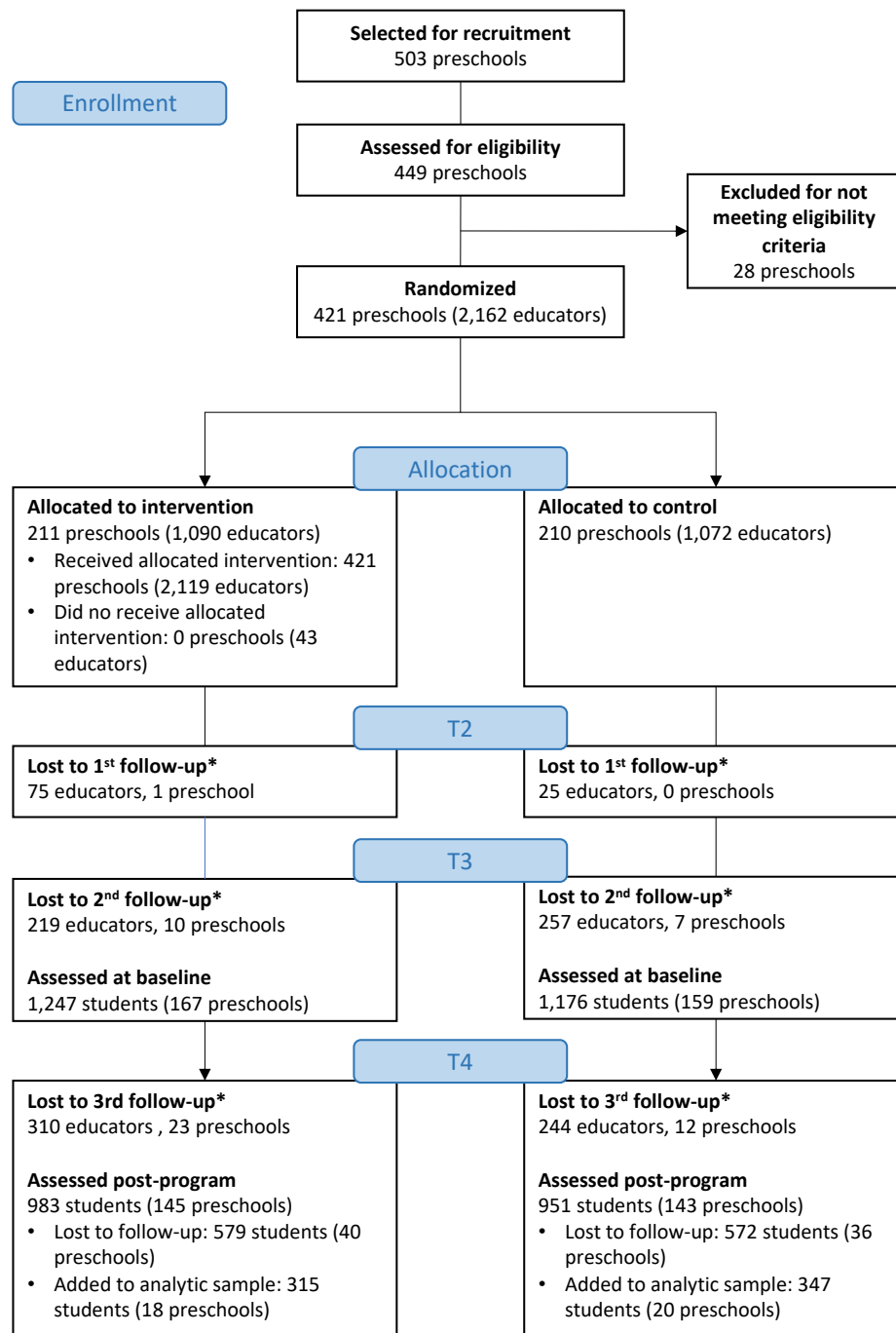


Figure 4. CONSORT flow diagram

### Comparability of intervention and control groups

Tables 1 and 2 summarize school-, educator- and student-level descriptive statistics by treatment and control status, the former for the sample used to evaluate educator outcomes and the latter for the sample used to evaluate student outcomes. School-level statistics include management type, geographic area, level of marginalization, number of educators who participated in Educating for Well-being or students who were assessed for the present study, student enrollment and tier of implementation of Educating for Well-being.

Educator-level statistics include occupation, gender, age, marital status, prior SEL training and socioeconomic level. Student-level statistics include gender and grade. No statistically significant differences were found in baseline characteristics between the two groups, indicating randomization was effective in ensuring that the intervention and control groups were well balanced. This balance was maintained at the T2, T3 and T4 data points for the sample used to evaluate educator outcomes.

### Feasibility and acceptability

Analysis of feasibility data shows that 79% of participants had an attendance rate of at least 80% for synchronous components of the professional development program. Due to school closures and other consequences of the COVID-19 pandemic, only 25% of educators had completed all the program requirements required for certification by the scheduled program end date of July 2021. Nonetheless, this figure rose to 69% by October, despite the lingering effects of the pandemic. At T2, the majority of participants reported doing home practice 2-3 times per week, with the most popular contemplative practices being Just like Me (in Spanish, Al igual que yo; used by 84% of participants), Breath Awareness (in Spanish, Recolección del respirar; used by 83% of participants) and Attentive listening and

speaking (in Spanish, Escucha y habla atenta; used by 76% of participants). 49% of participants reported having used the app, the majority of which (30%) reported using it once a week. In terms of implementation of the SEL curriculum for children, 57% of teachers reported having implemented SEL lessons with their students at least one a week, with the majority of teachers implementing the “10 agreements” (63%) or “Siconautas” and “10 Agreements” (36%). These results indicate that Educating for Well-being had relatively high feasibility, considering the context of school closures and other consequences of the COVID-19 pandemic.

Additionally, responses to questions about participants’ satisfaction with, and perceived benefits derived from the intervention show high levels of acceptability. Participants rated their overall satisfaction with Educating for Well-being a 9.7 out of 10, and 98% reported they would recommend the intervention to friends, colleagues, or family members. The majority of participants also “strongly” or “very strongly” agreed that they benefited from the intervention, both personally and professionally. On the one hand, they reported that the professional development program’s content and tools helped them to better manage their stress (90% of participants), that it gave them tools to better cope with the COVID-19 crisis (89% of participants), and that it helped them develop their socioemotional competencies (92% of participants). On the other hand, they reported feeling that they have the knowledge and tools to face the upcoming school year (92% of participants), that the intervention has been key to their professional development (92% of participants), has contributed to increasing their knowledge about socioemotional competences (93% of participants) and given them greater clarity about how to implement SEL with their

students (93% of participants), and that they now have more tools to integrate SEL in their day-to-day work as an educator (93% of participants).

### **Primary analysis**

#### Impact on educators' socioemotional competence and well-being

Impact estimates of Educating for Well-being on educators' socioemotional competence (self-awareness, emotion regulation and prosocial mindset and behaviors), efficacy and well-being are reported in Table 3<sup>15</sup>. Statistically significant effects of the intervention were found for all five outcomes across the duration of the study, specifically for one out of four measures of self-awareness, all six measures of emotional regulation, three out of four measures of prosocial mindset and behaviors, the single measure of efficacy and four out of five measures of psychological distress. The time evolution of these outcomes for each construct and measures are presented in Figures 5 and 6<sup>16</sup>.

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<sup>15</sup> Note that in this and all following tables, all p-values are FDR-adjusted p-values with \* pFDR < 0.10; \*\* pFDR < 0.05; \*\*\* pFDR < 0.01, and all estimates are Cohen's *d*.

<sup>16</sup> Note that in this and all following figures, error bars are standard error of the mean. Effect sizes and statistical significance are presented in the corresponding tables.

Scale	T2				T3				T4			
	Estimate	Adjusted P-value	IE %	ICC	Estimate	Adjusted P-value	IE %	ICC	Estimate	Adjusted P-value	IE %	ICC
<b>SELF AWARENESS</b>												
Mindfulness in Teaching Scale	0.011	0.868	0.4%	0.03	0.130*	0.092	5.2%	0.01	0.086	0.266	3.4%	0.01
HMI - Awareness	0.040	0.502	1.6%	0.01	-	-	-	-	0.026	0.693	1.1%	0.00
HMI - Purpose	0.159***	0.004	6.3%	0.01	-	-	-	-	0.059	0.414	2.3%	0.01
ICSE - Emotional Awareness	-0.029	0.628	-1.1%	0.00	-	-	-	-	-0.054	0.449	-2.1%	0.01
<b>EMOTIONAL REGULATION</b>												
Implicit Theories of Emotion (ITE)	0.466***	0.000	17.9%	0.00	-	-	-	-	0.267***	0.000	10.5%	0.01
ERQ - Expressive Suppression	-0.144***	0.009	-5.7%	0.02	-0.175**	0.013	-6.9%	0.03	-0.071	0.347	-2.8%	0.03
ERQ - Cognitive Reappraisal	0.170***	0.003	6.7%	0.03	0.084	0.271	3.4%	0.01	0.082	0.225	3.3%	0.01
MAIA - Self Regulation	0.456***	0.000	17.6%	0.02	-	-	-	-	0.347***	0.000	13.6%	0.03
HMI - Insight	0.111**	0.036	4.4%	0.00	-	-	-	-	0.052	0.449	2.1%	0.00
ICSE - Emotional Regulation	-0.235***	0.000	-9.3%	0.00	-	-	-	-	-0.049	0.471	-2.0%	0.00
<b>PROSOCIAL MINDSET AND BEHAVIOR</b>												
Interpersonal Reactivity Index (IRI)	0.186***	0.000	7.4%	0.01	0.188***	0.005	7.5%	0.01	0.168***	0.009	6.7%	0.03
Compassion Scale (CS)	0.142***	0.007	5.7%	0.01	-	-	-	-	0.125**	0.045	5.0%	0.01
HMI - Connection	0.105*	0.063	4.2%	0.02	-	-	-	-	0.035	0.615	1.4%	0.00
Prosocial Behavioral Intentions Scale (PBI)	0.202***	0.000	8.0%	0.04	0.064	0.417	2.6%	0.01	0.100	0.109	4.0%	0.00
<b>EFFICACY</b>												
Sense of Efficacy Scale (SES)	0.092*	0.091	3.7%	0.00	0.292***	0.000	11.5%	0.02	0.135**	0.036	5.4%	0.02
<b>PSYCHOLOGICAL DISTRESS</b>												
MBI - Emotional Exhaustion	0.131**	0.017	5.2%	0.02	-0.028	0.703	-1.1%	0.04	-0.037	0.623	-1.5%	0.04
MBI - Depersonalization	0.037	0.527	1.5%	0.00	-0.135**	0.045	-5.4%	0.00	0.017	0.798	0.7%	0.01
MBI - Personal Accomplishment	0.054	0.364	2.2%	0.00	-0.199***	0.003	-7.9%	0.00	-0.026	0.703	-1.0%	0.03
GAD-7	0.003	0.962	0.1%	0.04	-0.087	0.271	-3.5%	0.04	0.053	0.488	2.1%	0.05
PHQ-8	-0.025	0.693	-1.0%	0.02	-0.210***	0.003	-8.3%	0.02	-0.003	0.962	-0.1%	0.04

Table 3. Educating for Well-being impacts on educators' socioemotional competence and well-being

In the short term, participation in the professional development program improved educators' emotion regulation, with effect sizes ranging from 0.11 to 0.47. In particular, it increased educators' use of strategies such as attentional deployment (MAIA - Self Regulation:  $d = 0.47, p < 0.001$ ), cognitive change (ERQ - Cognitive Reappraisal:  $d = 0.17, p = 0.003$ ; HMI - Insight:  $d = 0.11, p = 0.036$ ) and response modulation (by decreasing maladaptive strategies; ERQ - Expressive Suppression:  $d = -0.14, p = 0.009$ ). On a higher level, the program led to statistically significant increases in the perception that emotions are malleable (ITE:  $d = 0.47, p = 0.000$ ); though, interestingly, statistically significant negative effects were observed for trait emotion regulation as measured by ICSE - Emotional Regulation ( $d = -0.24, p = 0.000$ ). This unexpected result may be due to a form of the Dunning-Kruger effect on emotion regulation (Dunning, 2011), but unfortunately, we didn't collect the data to corroborate this hypothesis.

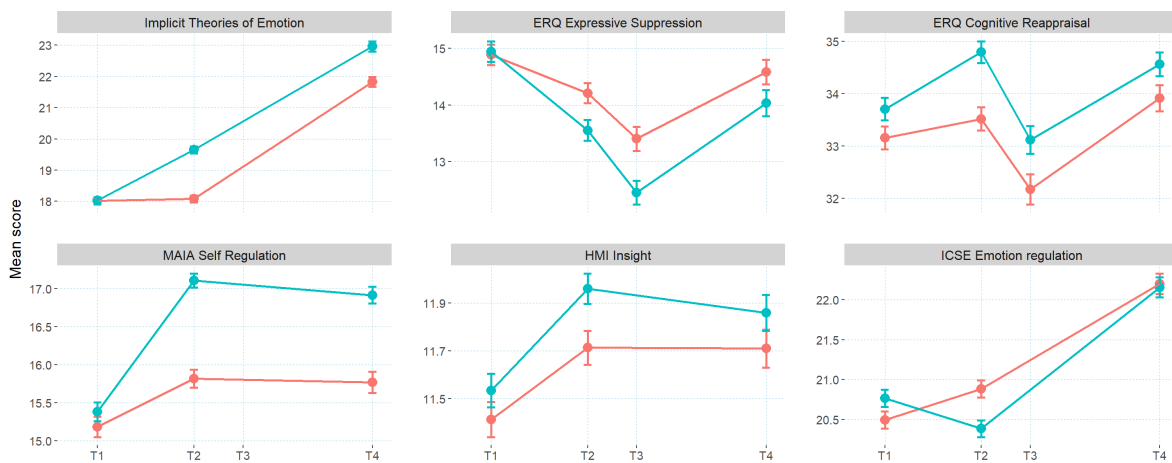
The program also improved educators' prosocial mindset and behaviors, with effect sizes ranging from 0.14 to 0.20. In particular, it increased educators' empathy (IRI:  $d = 0.19, p = 0.000$ ), compassion (CS:  $d = 0.14, p = 0.007$ ), and intentions toward prosocial behavior (PBIS:  $d = 0.20, p = 0.000$ ). While program effects were also observed for educators' feelings of connection to others, these were not statistically significant at  $p < .05$  FDR corrected (HMI - Connection:  $d = 0.11, p = 0.063$ ). In terms of self-awareness, the program improved educators' sense of purpose (HMI - Purpose:  $d = 0.16, p = 0.004$ ); nonetheless, no statistically significant effects were found for educators' mindfulness or awareness (emotional or otherwise).

The effects of Educating for Well-being continued to be statistically significant a few months after the scheduled completion date of the professional development program and were slightly greater in magnitude for some measures. Furthermore, statistically significant effects on educators' sense of efficacy and well-being were observed in a greater number of measures. While at T2 program effects on educators' sense of efficacy were not statistically significant at  $p < .05$  FDR corrected (SES:  $d = 0.09, p = 0.091$ ), the results at T3 indicate the program led to large improvements in educators' beliefs in their capability to make a difference in their schools and students learning (SES:  $d = 0.29, p = 0.000$ ). Similarly, in the medium term, the program improved educators' well-being. Despite early indications of increased emotional exhaustion at T2 (MBI - Emotional Exhaustion:  $d = 0.13, p = 0.017$ ), the program reduced educators' burnout (MBI - Depersonalization:  $d = -0.14, p = 0.045$ ; MBI - Personal Accomplishment:  $d = -0.20, p = 0.003$ ) and depression (PHQ-8:  $d = -0.21, p = 0.003$ ) in the medium term.

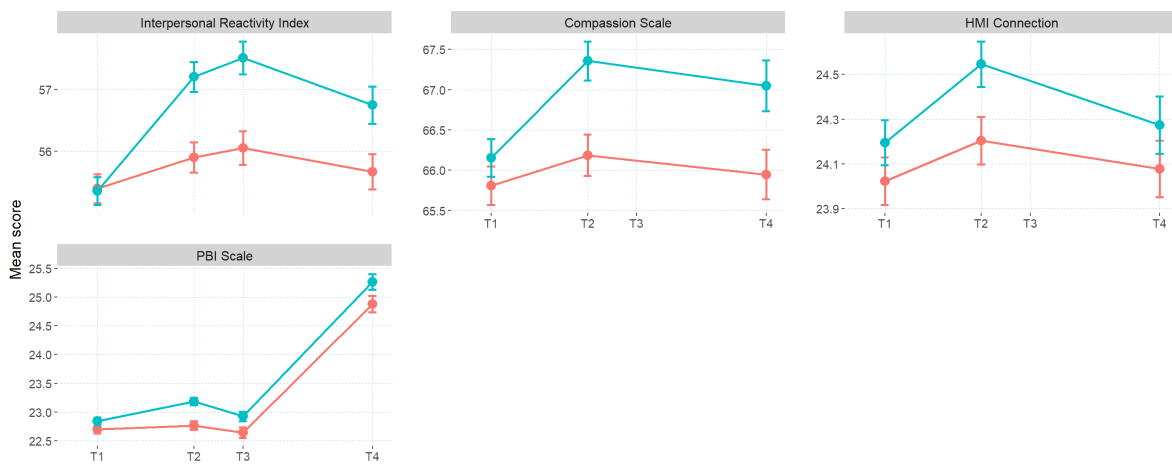
One year after implementing the professional development program, effects of Educating for Well-being remained on certain aspects of educators' emotion regulation and prosociality, though these were smaller in magnitude than at earlier time points.

Statistically significant effects were observed on educators' perception that emotions are malleable (ITE:  $d = 0.27$ ,  $p = 0.000$ ) and use of attentional deployment to regulate their emotions (MAIA - Self Regulation:  $d = 0.35$ ,  $p = 0.000$ ), as well as their empathy (IRI:  $d = 0.17$ ,  $p = 0.009$ ) and compassion (CS:  $d = 0.13$ ,  $p = 0.045$ ). Similarly, statistically significant effects continued to be observed on educators' sense of efficacy (SES:  $d = 0.14$ ,  $p = 0.036$ ), albeit smaller in magnitude relative to T3. The results suggest that the program's impact on other educator outcomes, particularly self-awareness and well-being, do not persist in the long term.

### Emotion regulation



### Prosocial skills and behavior



### Self-awareness

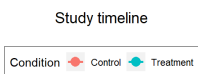
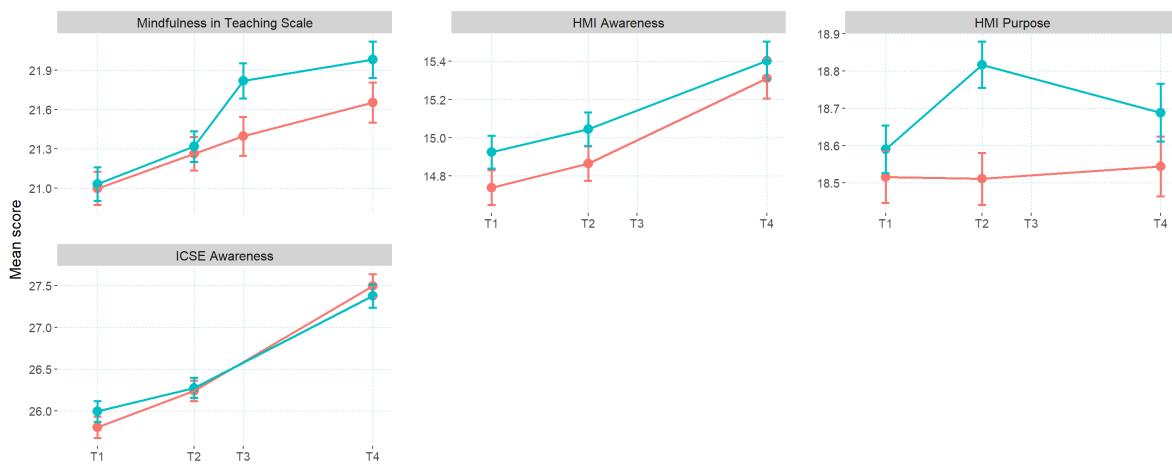




Figure 5. Changes in educators' SEC (emotion regulation, prosociality, and self-awareness) over time by group.

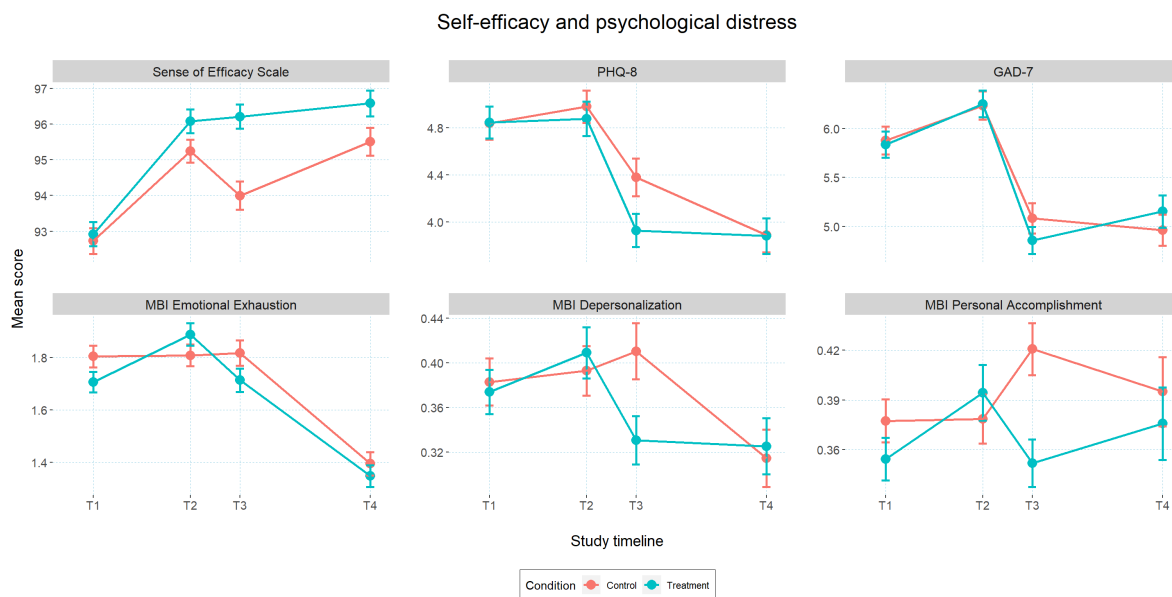


Figure 6. Changes in educators' self-efficacy and psychological distress over time by group.

### Impact on students' socioemotional outcomes

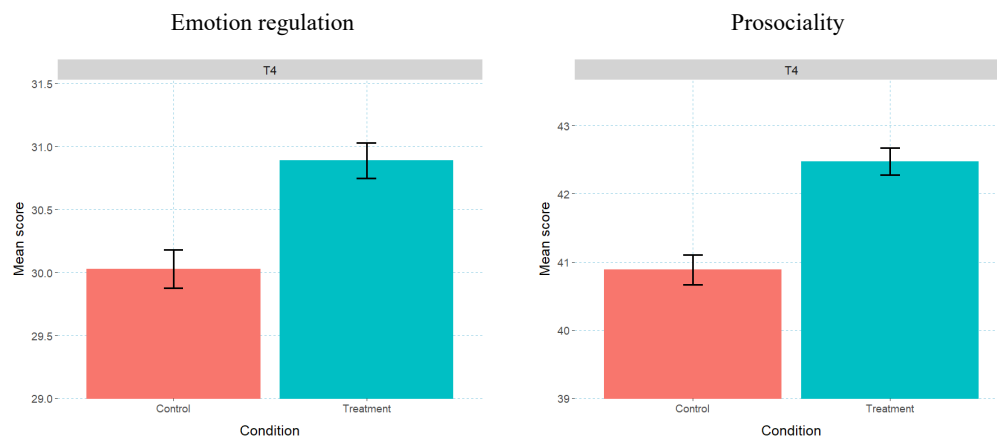
Impact estimates of Educating for Well-being on students' socioemotional competencies, as measured by teacher-reported change over the school year, are reported in Table 4 and depicted in Figure 6.

Scale	Estimate	Adjusted P-value	IE %	ICC Teacher level	ICC School level
Social Competence Scale - Teacher (SCS-T)	0.477***	0.000	18.3%	0.50	0.11
SCS-T - Prosocial behavior	0.365***	0.003	14.2%	0.44	0.10
SCS-T - Emotion regulation	0.498***	0.000	19.1%	0.52	0.10

Table 4. Student-level Intervention impacts at T4

Statistically significant effects of the intervention were found for all outcomes, suggesting that the professional development program and SEL curriculum led to overall improvements in teacher perceptions of students' overall socioemotional competencies

(SCS-T:  $d = 0.48, p = 0.000$ ), particularly their prosocial behavior (SCS-T - Prosocial Behavior:  $d = 0.37, p = 0.003$ ) and emotion regulation (SCS-T - Emotion Regulation:  $d = 0.50, p = 0.000$ ).



*Figure 7. Changes in students' Emotion regulation and prosociality, as measured by teacher-reported change over the school year.*

## Moderation analyses

### Moderation analyses of educator-level intervention effects

Tables 5, 6 and 7 report differential effects (moderation and subgroup analysis) of Educating for Well-being on educator outcomes, according to educators' occupation, school marginalization level and tier or program implementation, respectively. Even though the moderation effects on educators tend to be non-significant for most outcomes, the subgroup analyses provide additional nuances to our secondary research questions that are worth exploring.

The results of the moderation and subgroup analysis by occupation suggest that principals and teachers seem to be benefiting differently from the professional development program, with principals benefiting to a somewhat greater extent than teachers. Principals showed larger effect sizes in learning to regulate their emotions through the use of attentional deployment (MAIA - Self Regulation:  $d = 0.72, p = 0.000$ ) and cognitive change (ERQ - Cognitive Reappraisal:  $d = 0.28, p = 0.048$ ; HMI - Insight:  $d = 0.28, p = 0.047$ ).

Interestingly, the negative effects of the program on trait emotion regulation as measured by ICSE - Emotional Regulation were not observed for principals, but rather driven by teachers ( $d = -0.30, p = 0.000$ ). However, larger and persistent program effects on teachers' implicit theories of emotion were also observed, relative to principals. In terms of self-awareness and prosociality, principals experienced relatively greater improvements to their sense of purpose (HMI - Purpose:  $d = 0.32, p = 0.022$ ), empathy ( $d = 0.31, p = 0.025$ ), sense of connection (HMI - Connection:  $d = 0.36, p = 0.009$ ) and intentions towards prosocial behaviors (PBIS:  $d = 0.29; p = 0.040$ ); this includes a statistically significant effect on sense of connection, which was not observed on average. While the medium-term effects of the program on efficacy do not appear to be moderated by occupation, effects on well-being are driven by principals. This includes both reductions in burnout (MBI - Depersonalization:  $d = -0.40, p = 0.025$ ; MBI - Personal Accomplishment:  $d = -0.42, p = 0.018$ ) and depression (PHQ-8:  $d = -0.32, p = 0.082$ ), as well as the unexpected (though statistically insignificant) increases in emotional exhaustion observed at T2 (MBI - Emotional Exhaustion:  $d = 0.17, p = 0.296$ ).

While Educating for Well-being improves educator outcomes in all schools, the results of the subgroup analysis suggest that schools with higher levels of marginalization may

benefit to a greater extent than those with lower levels of marginalization. This is especially the case for prosociality, for which greater program effects were observed on all measures in schools with higher levels of marginalization (IRI:  $d = 0.28, p = 0.50$ ; CS:  $d = 0.34, p = 0.013$ ; HMI - Connection:  $d = 0.22, p = 0.087$ ; PBIS:  $d = 0.36, p = 0.011$ ). In terms of emotion regulation, the program also led to a greater belief in the malleability of emotions for educators in schools with medium-high levels of marginalization (ITE:  $d = 0.59, p = 0.000$ ). However, while program effects were larger for this group on cognitive change and attentional deployment strategies (ERQ - Cognitive Reappraisal:  $d = 0.32, p = 0.024$ ; HMI - Insight:  $d = 0.31, p = 0.012$ ; MAIA - Self Regulation:  $d = 0.53, p = 0.000$ ), reductions in the use of maladaptive strategies were driven by educators in schools with low levels of marginalization (ERQ - Expressive Suppression:  $d = -0.16, p = 0.024$ ). Though not statistically significant, the results for self-awareness suggest that the program led to greater improvements in mindfulness, sense of purpose and emotional awareness for educators in schools with higher levels of marginalization. In the longer term, this group also appears to have a greater sense of efficacy. Nonetheless, educators in schools with low marginalization levels seem to drive the program effects on well-being; with the exception of emotional exhaustion and anxiety, for which effects (though statistically insignificant) seem to be driven by educators in schools with medium-high levels of marginalization.

The tier of program implementation does not appear to moderate effects of Educating for Well-being. The professional development program seems to benefit educators in schools that implemented with only teachers or principals to the same extent as those in schools that implemented with all educators (school-wide implementation).

It should be noted that the statistically insignificant results mentioned above are likely a result of insufficient power to detect meaningful change in these relatively small subgroups. As shown in Table 1A, principals account for a much smaller proportion of the educator sample (18.3%). Similarly, only 22.8% of schools in the student sample have medium-high marginalization levels, and only 29.3% implemented the program with only teachers or principals.

Scale	T2						T3						T4					
	MODERATED IMPACT		SUB-GROUP ANALYSIS				MODERATED IMPACT		SUB-GROUP ANALYSIS				MODERATED IMPACT		SUB-GROUP ANALYSIS			
	MARGINAL EFFECT FOR PRINCIPALS		TEACHERS		PRINCIPALS		MARGINAL EFFECT FOR PRINCIPALS		TEACHERS		PRINCIPALS		MARGINAL EFFECT FOR PRINCIPALS		TEACHERS		PRINCIPALS	
	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value
<b>SELF AWARENESS</b>																		
HMI - Awareness	0.222	0.182	0.000	0.999	0.205	0.182	-	-	-	-	-	-	0.120	0.576	0.006	0.991	0.092	0.658
HMI - Purpose	0.164	0.373	0.125*	0.079	0.317**	0.022	-	-	-	-	-	-	0.139	0.524	0.025	0.858	0.163	0.419
ICSE - Emotional Awareness	0.269*	0.088	-0.076	0.354	0.178	0.273	-	-	-	-	-	-	0.301*	0.099	-0.105	0.265	0.167	0.399
<b>EMOTIONAL REGULATION</b>																		
Implicit Theories of Emotion (ITE)	-0.016	0.98	0.483***	0.000	0.399***	0.002	-	-	-	-	-	-	-0.007	0.994	0.277***	0.000	0.237	0.176
ERQ - Expressive Suppression	-0.036	0.905	-0.144*	0.054	-0.132	0.456	-	-	-0.156	0.100	-0.235	0.242	-0.011	0.991	-0.068	0.511	-0.078	0.736
ERQ - Cognitive Reappraisal	0.098	0.607	0.141*	0.054	0.284**	0.048	0.001	0.999	0.091	0.388	0.107	0.635	0.256	0.179	0.037	0.743	0.269	0.109
MAIA - Self Regulation	0.361**	0.016	0.399***	0.000	0.717***	0.000	0.048	0.875	-	-	-	-	0.282	0.125	0.300***	0.000	0.543***	0.000
HMI - Insight	0.195	0.265	0.075	0.341	0.284**	0.047	-	-	-	-	-	-	0.229	0.251	0.002	0.998	0.262	0.120
ICSE - Emotional Regulation	0.353**	0.018	-0.295***	0.000	0.040	0.876	-	-	-	-	-	-	0.287	0.115	-0.100	0.265	0.202	0.278
<b>PROSOCIAL MINDSET AND BEHAVIOR</b>																		
Interpersonal Reactivity Index (IRI)	0.180	0.313	0.156**	0.022	0.309**	0.025	-	-	0.191**	0.025	0.143	0.513	0.152	0.493	0.136	0.115	0.296*	0.075
Compassion Scale (CS)	0.105	0.575	0.125*	0.074	0.202	0.184	0.126	0.55	-	-	-	-	0.266	0.155	0.078	0.422	0.314*	0.054
HMI - Connection	0.286*	0.069	0.053	0.552	0.359***	0.009	-	-	-	-	-	-	0.174	0.424	0.004	0.994	0.186	0.331
Prosocial Behavioral Intentions Scale (PBIS)	0.140	0.47	0.183**	0.013	0.291**	0.040	-0.008	0.994	0.090	0.418	-0.039	0.916	0.098	0.67	0.081	0.395	0.184	0.332
<b>EFFICACY</b>																		
Sense of Efficacy Scale (SES)	-0.109	0.57	0.113	0.100	-0.025	0.946	0.116	0.578	0.285***	0.000	0.291	0.122	0.093	0.69	0.115	0.196	0.197	0.284
<b>PSYCHOLOGICAL DISTRESS</b>																		
MBI - Emotional Exhaustion	0.040	0.889	0.123*	0.092	0.174	0.296	-0.017	0.982	-0.044	0.746	0.061	0.835	-0.191	0.353	-0.001	0.999	-0.131	0.510
MBI - Depersonalization	-0.045	0.869	0.044	0.590	0.002	0.999	-0.379**	0.022	-0.055	0.604	-0.396**	0.025	-0.193	0.341	0.057	0.553	-0.172	0.369
MBI - Personal Accomplishment	0.037	0.9	0.054	0.511	0.060	0.777	-0.211	0.278	-0.150*	0.086	-0.417**	0.018	-0.107	0.629	-0.002	0.998	-0.101	0.609
GAI-7	-0.219	0.187	0.050	0.576	-0.188	0.240	-0.311*	0.074	-0.031	0.809	-0.296	0.107	-0.101	0.654	0.071	0.505	-0.026	0.952
PHQ-8	-0.188	0.293	0.013	0.931	-0.185	0.251	-0.174	0.403	-0.186**	0.036	-0.319*	0.082	-0.057	0.842	0.003	0.994	-0.037	0.912

Table 5. Moderation effects of occupation

Scale	T2						T3						T4					
	MODERATED IMPACT		SUB-GROUP ANALYSIS				MODERATED IMPACT		SUB-GROUP ANALYSIS				MODERATED IMPACT		SUB-GROUP ANALYSIS			
	MARGINAL EFFECT FOR MEDIUM-HIGH MARGINALIZATION		LOW MARGINALIZATION LEVEL		MEDIUM-HIGH MARGINALIZATION LEVEL		MARGINAL EFFECT FOR MEDIUM-HIGH MARGINALIZATION		LOW MARGINALIZATION LEVEL		MEDIUM-HIGH MARGINALIZATION LEVEL		MARGINAL EFFECT FOR MEDIUM-HIGH MARGINALIZATION		LOW MARGINALIZATION LEVEL		MEDIUM-HIGH MARGINALIZATION LEVEL	
	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value
<b>SELF AWARENESS</b>																		
Mindfulness in Teaching Scale	0.160	0.451	-0.027	0.839	0.143	0.464	-0.069	0.795	0.164	0.111	-0.021	0.967	0.013	0.991	0.088	0.465	0.080	0.694
HMI - Awareness	-0.001	0.999	0.032	0.764	0.038	0.858	-	-	-	-	-	-	-0.067	0.777	0.031	0.799	-0.028	0.929
HMI - Purpose	0.053	0.815	0.142*	0.059	0.197	0.132	-	-	-	-	-	-	-0.107	0.59	0.077	0.471	-0.037	0.886
ICSE - Emotional Awareness	0.140	0.433	-0.056	0.519	0.083	0.590	-	-	-	-	-	-	0.029	0.946	-0.080	0.424	-0.070	0.747
<b>EMOTIONAL REGULATION</b>																		
Implicit Theories of Emotion (ITE)	0.113	0.52	0.434***	0.000	0.585***	0.000	-	-	-	-	-	-	-0.011	0.991	0.258***	0.001	0.241	0.124
ERQ - Expressive Suppression	0.137	0.471	-0.164**	0.024	-0.017	0.965	-0.017	0.98	-0.153	0.100	-0.204	0.331	0.025	0.959	-0.071	0.510	-0.032	0.924
ERQ - Cognitive Reappraisal	0.173	0.343	0.125	0.100	0.315**	0.024	0.026	0.956	0.081	0.502	0.081	0.696	0.022	0.961	0.068	0.524	0.103	0.550
MAIA - Self Regulation	0.113	0.552	0.424***	0.000	0.530***	0.000	-	-	-	-	-	-	0.092	0.685	0.319***	0.000	0.440***	0.002
HMI - Insight	0.238	0.106	0.056	0.510	0.306**	0.012	-	-	-	-	-	-	0.014	0.985	0.041	0.708	0.058	0.776
ICSE - Emotional Regulation	0.044	0.858	-0.240***	0.000	-0.207	0.111	-	-	-	-	-	-	-0.127	0.516	-0.025	0.858	-0.167	0.295
<b>PROSOCIAL MINDSET AND BEHAVIOR</b>																		
Interpersonal Reactivity Index (IRI)	0.096	0.59	0.165**	0.013	0.278**	0.050	0.041	0.889	0.160*	0.082	0.283*	0.074	0.127	0.542	0.140	0.100	0.241	0.138
Compassion Scale (CS)	0.255*	0.081	0.081	0.305	0.340**	0.013	-	-	-	-	-	-	0.160	0.424	0.094	0.341	0.258*	0.065
HMI - Connection	0.151	0.419	0.071	0.454	0.220*	0.087	-	-	-	-	-	-	-0.061	0.803	0.057	0.570	-0.023	0.946
Prosocial Behavioral Intentions Scale (PBIS)	0.134	0.501	0.171**	0.022	0.357**	0.011	-0.058	0.821	0.101	0.338	-0.034	0.929	0.019	0.969	0.100	0.278	0.120	0.510
<b>EFFICACY</b>																		
Sense of Efficacy Scale (SES)	0.221	0.138	0.039	0.662	0.246*	0.059	0.126	0.533	0.283***	0.000	0.374***	0.029	0.069	0.78	0.102	0.312	0.158	0.319
<b>PSYCHOLOGICAL DISTRESS</b>																		
MBI - Emotional Exhaustion	-0.212	0.184	0.172**	0.015	-0.045	0.824	-0.084	0.73	-0.026	0.888	-0.108	0.570	-0.121	0.568	0.000	0.999	-0.100	0.576
MBI - Depersonalization	-0.009	0.991	0.041	0.636	0.021	0.946	0.024	0.958	-0.165*	0.065	-0.066	0.774	-0.051	0.846	0.038	0.752	-0.004	0.997
MBI - Personal Accomplishment	-0.006	0.994	0.060	0.492	0.056	0.755	0.090	0.854	-0.232***	0.005	-0.146	0.454	-0.128	0.54	0.006	0.991	-0.126	0.456
GAI-7	-0.137	0.486	0.031	0.782	-0.096	0.536	-0.171	0.423	-0.053	0.679	-0.196	0.265	-0.123	0.57	0.093	0.419	-0.036	0.887
PHQ-8	-0.132	0.485	0.003	0.994	-0.113	0.470	-0.034	0.924	-0.226**	0.011	-0.156	0.454	0.075	0.764	-0.017	0.930	0.062	0.764

Table 6. Moderation effects of school marginalization level

Scale	T2						T3						T4					
	MODERATED IMPACT		SUB-GROUP ANALYSIS				MODERATED IMPACT		SUB-GROUP ANALYSIS				MODERATED IMPACT		SUB-GROUP ANALYSIS			
	MARGINAL EFFECT FOR SCHOOL-WIDE IMPLEMENTATION		TEACHER/PRINCIPAL-ONLY IMPLEMENTATION		SCHOOL-WIDE IMPLEMENTATION		MARGINAL EFFECT FOR SCHOOL-WIDE IMPLEMENTATION		TEACHER/PRINCIPAL-ONLY IMPLEMENTATION		SCHOOL-WIDE IMPLEMENTATION		MARGINAL EFFECT FOR SCHOOL-WIDE IMPLEMENTATION		TEACHER/PRINCIPAL-ONLY IMPLEMENTATION		SCHOOL-WIDE IMPLEMENTATION	
	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value
<b>SELF-AWARENESS</b>																		
Mindfulness in Teaching Scale	-0.004	0.998	-0.042	0.916	0.010	0.966	-0.016	0.991	0.220	0.454	0.112	0.314	-0.111	0.693	0.146	0.553	0.073	0.502
HMI - Awareness	-0.092	0.653	0.073	0.728	0.022	0.846	-	-	-	-	-	-	-0.061	0.835	-0.001	0.999	0.020	0.889
HMI - Purpose	-0.032	0.929	0.110	0.550	0.159**	0.022	-	-	-	-	-	-	0.095	0.931	-0.093	0.930	0.069	0.493
ICSE - Emotional Awareness	-0.198	0.269	0.128	0.510	-0.069	0.403	-	-	-	-	-	-	-0.038	0.927	-0.078	0.763	-0.058	0.554
<b>EMOTIONAL REGULATION</b>																		
Implicit Theories of Emotion (ITE)	0.023	0.958	0.460***	0.000	0.460***	0.000	-	-	-	-	-	-	-0.008	0.994	0.256	0.167	0.370***	0.000
ERC - Expressive Suppression	-0.023	0.96	-0.122	0.555	-0.144**	0.043	0.194	0.395	-0.460**	0.013	-0.115	0.277	-0.250	0.257	0.070	0.806	-0.112	0.226
ERC - Cognitive Reappraisal	-0.248	0.169	0.403**	0.011	0.118	0.119	0.166	0.467	0.015	0.991	0.102	0.301	0.075	0.782	-0.017	0.985	0.095	0.293
MAIA - Self Regulation	-0.081	0.723	0.523***	0.001	0.438***	0.000	-	-	-	-	-	-	0.135	0.57	0.221	0.264	0.360***	0.000
HMI - Insight	-0.177	0.335	0.317	0.120	0.082	0.393	-	-	-	-	-	-	-0.126	0.571	0.122	0.590	0.029	0.806
ICSE - Emotional Regulation	-0.088	0.671	-0.191	0.301	-0.245***	0.000	-	-	-	-	-	-	-0.129	0.568	0.003	0.998	-0.067	0.486
<b>PROSOCIAL MINDSET AND BEHAVIOR</b>																		
Interpersonal Reactivity Index (IRI)	-0.281*	0.085	0.441***	0.004	0.133*	0.054	-0.244	0.222	0.476**	0.024	0.144*	0.099	0.175	0.456	0.046	0.886	0.193**	0.019
Compassion Scale (CS)	-0.08	0.708	0.211	0.182	0.129*	0.067	-	-	-	-	-	-	-0.048	0.887	0.162	0.486	0.113	0.182
HMI - Connection	-0.067	0.782	0.105	0.595	0.095	0.228	-	-	-	-	-	-	-0.125	0.571	0.140	0.510	0.009	0.969
Prosocial Behavioral Intentions Scale (PBIS)	-0.011	0.991	0.304	0.207	0.199***	0.009	-0.067	0.81	0.119	0.629	0.057	0.585	0.118	0.595	0.014	0.988	0.114	0.167
<b>EFFICACY</b>																		
Sense of Efficacy Scale (SES)	-0.083	0.694	0.089	0.635	0.078	0.317	-0.240	0.251	0.648***	0	0.233***	0.005	-0.016	0.988	0.080	0.777	0.139*	0.092
<b>PSYCHOLOGICAL DISTRESS</b>																		
MBI - Emotional Exhaustion	0.14	0.493	0.055	0.806	0.150**	0.031	0.065	0.836	-0.210	0.47	-0.004	0.994	-0.099	0.697	0.112	0.590	-0.061	0.565
MBI - Depersonalization	0.043	0.877	-0.006	0.994	0.052	0.531	0.018	0.98	-0.164	0.504	-0.124	0.176	-0.025	0.961	0.059	0.827	0.011	0.960
MBI - Personal Accomplishment	0.104	0.59	0.024	0.959	0.068	0.403	0.315*	0.083	-0.588**	0.001	-0.124	0.171	0.159	0.502	-0.070	0.806	-0.001	0.998
GAD-7	0.008	0.994	0.000	0.999	0.005	0.991	0.125	0.59	-0.312	0.163	-0.038	0.777	-0.118	0.635	0.135	0.550	0.033	0.806
PHQ-8	0.095	0.645	-0.110	0.549	-0.005	0.991	-0.010	0.994	-0.222	0.336	-0.210**	0.016	-0.030	0.957	0.068	0.806	-0.013	0.958

Table 7. Moderation effects of tier of implementation

Moderation analyses of student-level intervention effects

Tables 8 and 9 report differential effects of Educating for Well-being on student outcomes, according to school marginalization level and tier or program implementation, respectively.

The moderation effects (interaction term) were non-significant, however, looking at the subgroup analyses provides an additional layer to explore differential effects on student outcomes.

The results suggest that schools with higher levels of marginalization may benefit to a greater extent than those with lower levels of marginalization. Though not statistically significant, program effects on students' social competencies were larger in schools with medium-high levels of marginalization (SCS-T:  $d = 0.66, p = 0.091$ ; SCS-T - Prosocial Behavior:  $d = 0.59, p = 0.088$ ; SCS-T - Emotion Regulation:  $d = 0.60, p = 0.117$ ), relative to schools with low marginalization levels (SCS-T:  $d = 0.42, p = 0.020$ ; SCS-T - Prosocial Behavior:  $d = 0.28, p = 0.093$ ; SCS-T - Emotion Regulation:  $d = 0.48, p = 0.009$ ).

As was the case with educator outcomes, the tier at which Educating for Well-being was implemented does not appear to have moderated effects on student outcomes. While statistically significant effects were observed for students in schools with school-wide implementation (SCS-T:  $d = 0.49$ ,  $p = 0.009$ ; SCS-T - Prosocial Behavior:  $d = 0.40$ ,  $p = 0.012$ ; SCS-T - Emotion Regulation:  $d = 0.50$ ,  $p = 0.009$ ), the magnitude of the statistically insignificant effects for students in schools that implemented with only teachers or principals are similar or slightly larger (SCS-T:  $d = 0.59$ ,  $p = 0.286$ ; SCS-T - Prosocial Behavior:  $d = 0.35$ ,  $p = 0.502$ ; SCS-T - Emotion Regulation:  $d = 0.64$ ,  $p = 0.272$ ).

It should be noted that the statistically insignificant results mentioned above are likely a result of insufficient power to detect meaningful change in these relatively small subgroups. As shown in Table 2, only 26% of schools in the student sample have medium-high marginalization levels, and only 21.5% implemented the program with only teachers or principals.

Scale	MODERATED IMPACT		SUB-GROUP ANALYSIS			
	MARGINAL EFFECT FOR MEDIUM-HIGH		LOW MARGINALIZATION LEVEL		MEDIUM-HIGH MARGINALIZATION LEVEL	
	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value
Social Competence Scale - Teacher (SCS-T)	0.168	0.663	0.420**	0.020	0.664*	0.091
SCS-T - Prosocial behavior	0.256	0.562	0.283*	0.093	0.585*	0.088
SCS-T - Emotion regulation	0.071	0.855	0.475***	0.009	0.604	0.117

Table 8. Moderation effects of school marginalization level on students' socioemotional competence

Scale	MODERATED IMPACT		SUB-GROUP ANALYSIS			
	MARGINAL EFFECT FOR SCHOOL-WIDE		TEACHER/PRINCIPAL-ONLY IMPLEMENTATION		SCHOOL-WIDE IMPLEMENTATION	
	Estimate	Adjusted P-value	Estimate	Adjusted P-value	Estimate	Adjusted P-value
Social Competence Scale - Teacher (SCS-T)	0.178	0.696	0.592	0.286	0.494***	0.009
SCS-T - Prosocial behavior	0.262	0.615	0.351	0.502	0.402**	0.012
SCS-T - Emotion regulation	0.095	0.851	0.637	0.272	0.497***	0.009

Table 9. Moderation effects of tier of implementation on students' socioemotional competence

## DISCUSSION

The present study sheds light on the critical importance of integrating social and emotional learning into the early educational landscape, particularly in the Mexican context. To our knowledge, this is the first study that comprehensively evaluates the near- and longer-term impacts of a social and emotional learning intervention on preschool educators and their students in Mexico. In particular, the study explored the effects of the Educating for Well-being intervention on multiple dimensions of educators' socioemotional competencies, well-being, and the subsequent effects on student outcomes. Results of this study show that EW for preschool teachers, principals and their students is feasible, acceptable and effective.

### Acceptability and feasibility

The results of our study suggest that EW is both acceptable and feasible, even within the unexpected challenging constraints imposed by the COVID-19 pandemic such as long school closures and distance learning. Regarding feasibility, a significant portion of participants—79%—attended at least 80% of the synchronous components of the professional development program. Although the pandemic caused delays in the completion of all program requirements, with only 25% meeting these by the initially scheduled end date, that figure impressively rose to 69% within the next three months. This resilience is particularly



noteworthy given the ongoing challenges presented by the pandemic. Moreover, educators were engaged in the home practice components of the program, with the majority reporting meditation practice 2-3 times per week, and 49% of educators using the accompanying app at least once a week, pointing to their commitment to applying what they learned.

Regarding the implementation of the SEL curriculum for children, 57% of teachers were able to conduct SEL lessons with their students at least once a week, despite the challenging backdrop of the pandemic. This number is indicative of the educators' active engagement in rolling out the SEL curriculum and suggest a relatively high feasibility of the Educating for Well-being program even amidst the adversities posed by the COVID-19 pandemic. A closer examination of the curriculum content being utilized reveals that a significant portion of teachers were either implementing the “10 agreements” (63%) or a combination of “Siconautas” and “10 Agreements” (36%). The “10 agreements” curriculum provides a more flexible implementation format, which may be particularly conducive in challenging and less stable circumstances like those encountered during the pandemic. This flexibility might have contributed to its higher adoption rate, providing educators with adaptable tools to navigate the teaching landscape amidst the ongoing disruptions.

In terms of acceptability, the Educating for Well-being program received high marks. Participants rated their satisfaction with the intervention at an impressive 9.7 out of 10, and 98% indicated they would recommend the program to others, including friends, colleagues, and family. This widespread endorsement indicates strong acceptance among educators, who cited numerous personal and professional benefits. These ranged from better stress management and coping mechanisms related to COVID-19 to substantial improvements in

their socioemotional competencies. Nearly all participants felt more equipped to tackle the upcoming school year and considered the intervention integral to their professional development.

### **Impacts on educator outcomes**

EW was also effective. Our findings indicate that the Educating for Well-being intervention has statistically significant positive effects on 75% of educators measured outcomes in self-awareness, emotion regulation, pro-sociality, self-efficacy, and psychological distress, as well as on students' prosocial behavior and emotional regulation. With sustained effects on educators' emotion regulation, prosociality, and self-efficacy at twelve-month follow-up.

The findings of our study point to the integral emphasis placed on educators' socioemotional competence within the Educating for Well-being program. An initial pattern emerged where the most substantial and enduring outcomes were observed in educators' emotion regulation and prosociality across the evaluated time points. Although improvements in self-awareness were observed, they presented as smaller and less enduring in comparison. Regarding well-being, the data showed a promising and enduring enhancements in educators' self-efficacy, alongside encouraging trends in reducing burnout and depression. These positive shifts in educators' SEC and well-being not only resonate with the program's Theory of Change but also significantly, echo through to the improved socioemotional competencies observed in students, signaling to the synergistic pathway of socioemotional development between educators and their students as envisaged in the

program's overarching framework.

### Emotion regulation

Improvements in educators' emotion regulation measures, depicted by effect sizes ranging from 0.11 to 0.47, are particularly encouraging as they show significant and enduring improvements in two critical components of adaptive emotion regulation: beliefs and strategies. The effect sizes of 0.47 at T2 and 0.27 at a one-year follow-up on the Implicit Theories of Emotion Scale (ITES; Tamir et al., 2007), point to a paradigm shift in educators' beliefs regarding the malleability and controllability of emotions. The ITES measures the extent to which individuals believe emotions are controllable or uncontrollable. A higher score on this scale indicates a belief in the malleability of emotions, which is fundamental to effective emotion regulation (B. Q. Ford & Gross, 2018; Tamir et al., 2007). Individuals who endorse incremental beliefs - the view that attributes such as emotions are malleable and controllable - are likely to engage in proactive self-regulation, especially in challenging situations. This proactive stance is instrumental in fostering successful behavioral outcomes and in navigating the emotional landscapes of educational settings (P. A. Jennings et al., 2017). Conversely, holding entity beliefs, the notion that attributes are fixed and uncontrollable, often diminishes the motivation to self-regulate, leading to potential self-regulation failure.

The notable shift towards a belief in the controllability of emotions among educators in this study is in alignment with the broader psychological literature which underscores the significant role of such beliefs in emotion regulation (B. Q. Ford & Gross, 2018; Tamir et al., 2007). These foundational beliefs about emotions influence emotion regulation

processes, which, in turn, have a cascading impact on various core outcomes, including psychological health. A recent longitudinal study showed that harboring a belief in the uncontrollability of emotions predicts deteriorating psychological health over time, a trajectory mediated by impaired emotion regulation processes (B. Q. Ford et al., 2018). Additionally, such beliefs about emotion controllability have been pinpointed as a mechanism of change within psychological treatment realms, highlighting the relevant implications of altering these beliefs (De Castella et al., 2015). This hints the potential of the observed shift in educators' beliefs in this study, not only for enhancing emotion regulation but also for fostering long-term psychological well-being.

Moreover, the improvements in utilizing emotion regulation strategies like attentional deployment, cognitive change, and reducing maladaptive strategies like expressive suppression represents a promising stride towards adaptive emotion regulation, a competency crucial for impactful teaching, leadership, and meaningful interaction with students and families, and central for educators' well-being (P. A. Jennings & Greenberg, 2009; Mahfouz et al., 2019; Montgomery & Rupp, 2005; Taxer & Gross, 2018). The positive improvements in the employment of attentional deployment ( $d = 0.47$  at T2;  $d = 0.35$  at T4), cognitive change ( $d = 0.17$  at T2), and the reduction of maladaptive strategies like expressive suppression ( $d = -0.14$  at T2;  $d = -0.175$  at T3) through the Educating for Well-being program, suggest a positive trajectory towards nurturing adaptive emotion regulation among educators.

Particularly, the sustained impact on attentional deployment, a key strategy taught in the course focusing on attending to the breath or the body, even a year post-program ( $d = 0.35$

at T4), points to the program's efficacy in inculcating lasting emotion regulation strategies among educators. This enduring impact is encouraging as it suggests a longer-term internalization and application of these pivotal emotion regulation strategies by the educators. Furthermore, the gradual improvement in reducing expressive suppression at T3 suggests a shift towards minimizing maladaptive strategies which has been shown to increase stress and impair well-being (Gross, 2002).

These findings are particularly important as Educating for Well-being is intentionally designed to equip educators with an understanding and practical skills pertaining to the four core emotion regulation strategies delineated in Gross' process model for emotion regulation: Situation Modification and Selection, Attentional Deployment, Cognitive Change, and Response Modulation (Gross, 2015). It appears that Educating for Well-being supports educators to use more adaptive ways of regulating, expressing, and coping with difficult emotions with themselves and in the classroom.

Given the preceding findings, the unexpected negative effect observed for the trait emotion regulation as measured by ICSE - Emotional Regulation was surprising. It's worth mentioning that in a previous pilot study, Educating for Well-being exhibited positive effects on the same measure within a sample of principals (Chernicoff, 2019). A possible explanation could be a form of Dunning-Kruger effect on emotion regulation. The Dunning-Kruger effect is a cognitive bias wherein individuals with low ability at a task overestimate their capability, while those with high ability may underestimate theirs. This phenomenon occurs because the expertise needed to self-evaluate performance accurately is

the same expertise required to perform the task competently (Dunning, 2011; Sheldon et al., 2014).

Applying the lens of the Dunning-Kruger effect, it's conceivable that as participants in the treatment group become more acquainted with, and practice, the emotion regulation strategies taught in the Educating for Well-being course, they also become more aware of the challenges inherent in emotion regulation. Initially, without training, participants might have perceived themselves as fairly proficient in maintaining calm when faced with offensive remarks, as indicated by the trait emotion regulation measure. However, as they engaged with the practice of emotion regulation strategies, they might have realized the genuine effort and skill required to maintain calm in such scenarios. This burgeoning awareness might transiently manifest as a perceived decline in their self-reported emotion regulation competence on the ICSE - Emotional Regulation measure. Essentially, as they progressively honed their skills through practice, the initial overestimation of their emotion regulation capabilities might have been recalibrated, which could explain the unexpected negative effect observed. Regrettably, the absence of this measure at T3, three months post-T2, leaves a gap in our understanding<sup>17</sup>. Additionally, this unexpected result also

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<sup>17</sup> Had the ICSE measure been captured at T3, it could have potentially illustrated the hypothesized three-phase trajectory in participants' emotion regulation competence and self-assessment accuracy. Initially, before engaging extensively with the Educating for Well-being course, participants might have been in a state of relative ignorance regarding their true emotion regulation capabilities,

underscores the need for a thorough examination of the measures and constructs employed to evaluate emotion regulation, reflecting the subtleties and complexities in measuring emotion regulation (John & Eng, 2014) and indicates the need to complement research moving beyond self-reported measures (Davidson & Kaszniak, 2015).

### Prosociality

The trajectory in prosociality reflects a positive and enduring impact of EW on educator outcomes. The data at T2 post-intervention shows improvements in educators' empathy, compassion, and intentions toward prosocial behavior, with effect sizes ranging from 0.14

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possibly leading to an overestimation of their competence. This phase is characterized by a lack of awareness about the intricacies of emotion regulation, and perhaps a simplistic self-view of their competence in maintaining calm in challenging situations, as captured by the trait emotion regulation measure. As participants delved into the course and practiced the emotion regulation strategies, they likely transitioned into a phase of heightened awareness, likely captured at T2. This phase may reflect a more accurate, albeit lower, self-assessment of their emotion regulation competence as they began to grapple with the real challenges entailed in managing emotional responses effectively. With continued practice and engagement with the course, participants could have transitioned into a phase of enhanced competence. This phase, which we hypothesized would be captured at T3, would reflect not only a more accurate self-assessment but also an actual improvement in emotion regulation competence. The enhanced competence, coupled with a more realistic self-assessment, would likely mirror a more genuine alignment between participants' self-perceived and actual emotion regulation abilities.

to 0.20. This positive trend in prosocial mindset and behaviors not only persisted but slightly grew for empathy ( $d=0.19$ ) a few months post-intervention at T3, indicating a sustained and potentially deepening impact of the program on educators' prosocial dispositions.

Even a year after the professional development program at T4, the positive effects on educators' empathy and compassion persisted, albeit at a slightly reduced magnitude, with effect sizes of 0.17 and 0.13 respectively. These enduring effects are suggestive of the program's capacity in nurturing and sustaining core prosocial attributes of compassion and empathy among educators. Furthermore, the continuous improvements in empathy and compassion among educators in our study may account for the transferability of these prosocial skills to the students they engage with, as reflected by our students' outcomes. Additionally, the sustained impact on these core prosocial skills, central to the program's curriculum, resonates with the overarching aim of Educating for Well-being, emphasizing the lasting benefits of the program in fostering the educators' prosocial orientation that is crucial for establishing a safe, caring, and nurturing educational environment essential for preschool children.

Finally, with its considerable sample size and longitudinal design encompassing multiple time points, our study adds to the existing literature on compassion and empathy training (Hofmann et al., 2011; Kirby et al., 2017; Teding Van Berkhout & Malouff, 2016). It not only reinforces the established efficacy of such interventions but may provide insights into the sustainability of the acquired prosocial attributes over time, significantly in a real-world educational setting.



### Self-awareness

The program's impact on self-awareness was somewhat selective, improving educators' sense of purpose ( $d=0.16$ ) but not significantly affecting other facets of attention regulation or emotional awareness initially. However, the marginal improvements in the mindfulness in teaching scale at T3 ( $d=0.13$ ) hint at a potential delayed effect in cultivating mindfulness, which warrants further exploration. These results indicate a path for refining the program to improve a broader spectrum of self-awareness skills. Importantly, the observed improvement in educators' sense of purpose, as fostered by the program, could have meaningful implications. A strong sense of purpose is associated with better health outcomes and behaviors, as well as positive psychological functioning including memory and executive function (C. J. Dahl et al., 2020). Thus, this improvement in purpose may be another pathway to promoting educators' health and psychological well-being.

A likely factor contributing to the absence of significant improvements in awareness may be the limited utilization of the *AtentaMente* app, specifically designed to support attention training. The app furnishes a guided and sustained program for cultivating awareness.

Regarding app usage, 49% of participants reported engaging with the app, the majority of whom (30%) reported using it only once a week. This frequency of usage is presumably insufficient to yield significant effects on a skill that likely necessitates more intentional, focused training.

### Self-efficacy

The findings from our study seem to be consistent with the hypothesis that enhancements in self-efficacy and reductions in psychological distress would follow the development of educators' Socio-Emotional Competence. Thus, the significant improvements observed at T2, post-intervention, in educators' emotion regulation and prosociality are conjectured to lay the groundwork for the subsequent enhancements in self-efficacy observed at T3, with a notable effect size of  $d=0.29$ .

The pathway to improved self-efficacy could be explained through a dual lens: firstly, by aiding educators in recognizing and regulating their emotional reactivity, and secondly, by enhancing their prosocial skills. These positive changes could potentially thwart the cognitive degradation triggered by stress responses (McEwen & Sapolsky, 1995), and concurrently enrich educators' relationships with both students and peers (P. A. Jennings & Greenberg, 2009). The fostering of better school relationships and a supportive and understanding environment could, in turn, bolster educators' self-efficacy. The intricacies connecting educators' cognitive functioning, self-reported sense of efficacy, emotion regulation, and prosociality warrant further exploration. However, the promising results from this study provide an encouraging premise for the potential cascading benefits of enhancing educators' SEC.

At one-year follow-up, the enduring effects on self-efficacy, even though slightly diminished ( $d=0.14$ ), underline the sustained impact of EW. This enduring impact hints at the long-term benefits that could manifest in the form of reduced educator turnover and elevated job satisfaction (Carver-Thomas & Darling-Hammond, 2017; Yost, 2006).

### Psychological distress

The trajectory of Educating for Well-being (EW) program's impact on educators' psychological well-being presents a nuanced narrative. While the overarching trajectory is points towards enhancing educators' well-being, some unexpected nuances deserve some exploration. Initially, at T2, post-intervention, we found an unexpected increase in emotional exhaustion ( $d = 0.13$ ), without any notable decrease in overall psychological distress. This preliminary finding, albeit perplexing, can be contextualized amidst the challenging backdrop of the pandemic, notably accentuated as T2 coincided with the culmination of the 2020-2021 academic year.

A more granular examination reveals that this early spike in emotional exhaustion was predominantly driven by principals. The temporal intersection of T2 with a particularly strenuous phase of the pandemic, coupled with the demands of adhering to the intervention and measurement protocol, ostensibly exacerbated the pressure on educators, more so on principals bearing the additional responsibility of steering their schools through the study amidst the prevailing exigencies. This heightened strain likely magnified the emotional exhaustion among principals, rendering a potential explanation for the initial uptick in emotional exhaustion. Recognizing the undue burden, and in a collaborative stride with the Ministry of Education of Sinaloa, a decision was made to amend the intervention's scheduled end date to better accommodate and respond to the extraordinarily complex circumstances educators were grappling with at the time.

As time progressed to T3, three months post-intervention, a noteworthy shift emerged. Despite the early surge in emotional exhaustion, the data at T3 displayed significant reductions in educators' burnout –particularly in depersonalization ( $d = -0.14$ ) and personal accomplishment ( $d = -0.20$ )– and depression ( $d = -0.21$ ). This mid-term amelioration in burnout and depression resonates with the “summer restoration and skill consolidation hypothesis” posited by Roeser (2022). According to this hypothesis, the intervening period may afford educators a chance for rest and a more focused opportunity to practice the skills and strategies acquired from the program, in this case, the Educating for Well-being program, within their personal lives outside of work. The “sleeper effects” highlighted by Roeser could partially explain the delayed but significant reduction in burnout and depression observed at T3 (Roeser et al., 2022). Similar to the findings in mindfulness training by Roeser, the Educating for Well-being program might have instigated a temporal pattern of symptom reduction that became more apparent with the passage of time, potentially as educators had opportunities to assimilate and apply the socio-emotional competencies nurtured by the program.

However, by T4, a year post-intervention, the positive effects observed at T3 seemed to dissipate, as there were no statistically significant changes noted in educators' burnout, anxiety, or depression. This fading effect at the one-year follow-up underscores the importance of continual support and perhaps reinforcement sessions to sustain the beneficial impacts of the program over a longer term. Our results suggest a compelling avenue for future research to delve deeper into the unfolding impact of such interventions post-program, and how sustained practice, whether formal or informal, might contribute to enduring positive effects on educators' well-being.

In addition, our study's results on educators' burnout point to interesting similarities and differences when compared with other adult SEL interventions, as highlighted in the meta-analysis conducted by Oliveira (2021) on the impact adult SEL on educators' burnout symptoms. While Oliveira's meta-analysis showed a significant medium effect size favoring the experimental group in reducing emotional exhaustion and improving personal accomplishment, but non-significant impacts on depersonalization, our intervention notably improved personal accomplishment and depersonalization without significantly affecting emotional exhaustion. The alleviation of educators' depersonalization might be particularly relevant within the preschool educational setting where the foundation of safe, responsive, and nurturing relationships between educators and young learners is critical for fostering a conducive learning environment.

#### Contextualizing the current results within existing evidence base

Although the results of the current study on adult outcomes are promising, it is useful to situate these findings within the context of prior research on adult SEL and contemplative-based interventions. Our study's findings exhibit effect sizes that tend to be smaller than average as seen in recent meta-analyses exploring these domains concerning both Social-Emotional Competencies and psychological distress (Kirby et al., 2017; Klingbeil & Renshaw, 2018; Oliveira, Roberto, Pereira, et al., 2021; Oliveira, Roberto, Veiga-Simão, et al., 2021).

This discrepancy prompts the question: why might our effect sizes appear smaller compared to those reported in the literature? A crucial factor to consider is the real-world,

large-scale setting of our study, contrasting with the more controlled, smaller-scale environments often characteristic of many other investigations. To grasp the scale of our study, which encompasses 2,162 in-service educators, it's illuminating to compare it to the aggregate sample sizes reported in various meta-analyses. For instance, Klingbeil and Renshaw (2018) included 29 studies with a total of 1,493 participants; Oliveira (2021) aggregated 43 empirical studies with 3,004 in-service preK-12 teachers; and Kirby et al. (2017) analyzed 21 studies with a cumulative participant count of 1,285. This comparison helps to contextualize the scale of our study within the broader research landscape. In this context, our study aligns more with Stage III (Real World “Efficacy”), of the NIH's stages of intervention development (Onken et al., 2014), rather than Stage II (Pure “Efficacy”). Operating as a pragmatic trial in a community setting, our study maintains a level of control to establish internal validity, aiming to provide realistic expectations for stakeholders and policymakers. This positions our research closer to real-world applications, moving towards Stage IV (“Effectiveness”), where the focus broadens to examining empirically supported behavioral interventions in community settings while maximizing external validity.

Additionally, research on RCTs in education reveals a trend where the promising larger effect sizes reported in controlled settings often experience a significant reduction or even disappearance as interventions transition to real-world implementations. This is a phenomenon, often attributed to the “Promising Trials Bias” inherent in low-powered trials (Sims et al., 2022). Such bias can inflate effect sizes, thus creating an over-optimistic portrayal of impact that might not withstand the complexities of real-world settings (Shonkoff & Fisher, 2013). In contrast, our study, conducted within the real-world context of the Mexican educational environment through the Educating for Well-being (EW)

program, may have smaller effect sizes. However, these smaller effect sizes may likely present a more accurate reflection of the intervention's impact. The pragmatic nature and considerable sample size of our study could be a safeguard against the likelihood of effect size exaggeration, thereby offering more reliable estimation of the intervention's impacts amidst the challenges posed by real-world educational settings.

### **Impacts on student outcomes**

The positive student outcomes observed in our study reflect the potential efficacy of the Educating for Well-being (EW) program in enhancing students' socioemotional competencies over a school year. The impact estimates indicate statistically significant improvements in students' overall socioemotional competencies ( $d = 0.48$ ), and particularly on prosocial behavior ( $d = 0.37$ ) and emotion regulation ( $d = 0.50$ ). These findings are significant for several reasons. Firstly, they suggest a successful translation of the professional development program and EW's SEL curriculum for children into meaningful enhancements in students' socioemotional competencies, as reported by teachers over the school year. Secondly, they resonate with existing literature that underscores the pivotal role of children self-regulatory skills in predicting favorable outcomes across the lifespan, despite these skills often being overlooked in formal educational settings (K. L. Bierman, Nix, et al., 2008; Blair & Diamond, 2010).

The improvements in emotion regulation and prosocial behavior observed in our study could potentially lay the foundation for students' ongoing development and academic success. The universal preventive approach of EW may set students on a positive developmental trajectory, and even modest enhancements in self-regulation can render

broader societal benefits by positively shifting the distribution of associated outcomes (Blair & Raver, 2015; Moffitt et al., 2011b). This notion amplifies the broader implications of our findings, hinting at the substantive benefits that a well-structured, long-term intervention like EW can yield, both at the individual and societal levels, thus contributing to the overarching goal of promoting well-being, prosocial behavior, and academic success among students.

### **Moderation effects on educator outcomes**

Exploring the moderating effects of occupation, school marginalization level, and tier of implementation on educator outcomes provides further insights into the nuanced impact of the program. Our findings indicate that both occupation and school marginalization level moderate the program's impact, whereas the tier of program implementation does not appear to exert a similar moderating influence.

#### Occupation

The moderation analysis by occupation reveals differing benefits between principals and teachers from the professional development program, with principals reaping somewhat larger gains. Specifically, principals exhibited larger effect sizes in honing their emotional regulation through attentional deployment ( $d = 0.72$ ) and cognitive change ( $d = 0.28$ ).

Interestingly, the adverse impacts on trait emotion regulation as gauged by ICSE - Emotional Regulation were absent among principals but manifested in teachers ( $d = -0.30$ ). On the other hand, more substantial and enduring effects on teachers' implicit theories of emotion were noted, in comparison to principals. Regarding self-awareness and prosociality, principals saw relatively enhanced improvements in their sense of purpose ( $d$



= 0.32), empathy ( $d = 0.31$ ), sense of connection ( $d = 0.36$ ), and intentions towards prosocial behaviors ( $d = 0.29$ ); this encompasses a statistically significant uptick in sense of connection, not seen on average. While occupation didn't moderate the medium-term effects on efficacy, it did influence well-being outcomes, which were primarily driven by principals. This entailed both reductions in burnout (Depersonalization  $d = -0.40$ ; and Personal Accomplishment  $d = -0.42$ ) and depression ( $d = -0.32$ ).

The differentiation in benefits between principals and teachers could be rooted in the likely more mature and experienced nature of principals. Their extended tenure in education potentially positions them as more responsible and systematic learners when navigating through the program. Interestingly, the pattern of benefits aligns with the progressive stages of skill acquisition underlying the Educating for Well-being's program, especially in the realm of emotion regulation. Initially, individuals alter their mindsets about the malleability and controllability of emotions, reflected in changes in implicit theories of emotion, followed by the application of emotion regulation strategies, and culminating in alterations in trait emotion regulation. Our findings suggest that teachers may be navigating the initial stages of this developmental trajectory, attaining more benefits in altering implicit theories of emotion, while principals are advancing through the later stages, experiencing more pronounced benefits in applying emotion regulation strategies and altering trait emotion regulation. The observed pattern, where adverse impacts on trait emotion regulation were apparent among teachers but not principals, is consistent with the hypothesized Dunning-Kruger effect at T2. It is plausible that principals, likely being more experienced and emotionally competent, have a more accurate self-assessment of their emotional regulation skills, thus enabling them to benefit more profoundly from the program in enhancing these

skills further. On the other hand, teachers, potentially at a lower level of emotional competence, may initially struggle to accurately gauge and regulate their emotions, leading to the observed adverse impacts.

This nuanced unfolding of benefits highlights the potential importance of tailoring the professional development program to the distinct professional standings and perhaps the readiness levels of the educators involved. It suggests a compelling avenue for considering the current state of an educator's social and emotional competencies when designing interventions, aiming to meet them where they are in terms of skill development. This approach could foster a more precise support structure, helping educators advance through the stages of skill acquisition more effectively. The observed differentiation in benefits between principals and teachers reinforces the idea that a one-size-fits-all approach may not be as impactful. The utilization of technology and emerging AI supports could significantly contribute to this endeavor, facilitating personalized learning paths and real-time feedback, thereby making the intervention more responsive to the individual needs and progress of the educators. Thus, further research is warranted to explore how adjusting the intervention to the educators' initial competency levels, supported by technological advancements, can enhance the effectiveness of the program in promoting social and emotional skill development.

#### School Marginalization Level

School marginalization level surfaced as another moderator, where educators in schools with higher levels of marginalization experienced greater program effects, especially in prosociality. This differential in improvement could be explained in the likelihood that

educators in these schools face more complex challenges which test their prosocial and relationship skills. They often engage with environments marked by poverty, violence, and other adversities, requiring a heightened level of adaptability and relational skills. This additional benefit for educators in more marginalized schools is an encouraging result. The necessity for more caring and compassionate adults in these settings is paramount to act as buffers, supporting and protecting children who often encounter adverse childhood experiences like toxic stress. The increased prosocial skills among educators in these schools are not only a positive outcome of the program but an encouraging step toward fostering a nurturing and supportive environment for the children they serve.

#### Tier of Program Implementation

The tier of program implementation did not significantly moderate the effects of Educating for Well-being. The professional development program seemed to equally benefit educators in schools that implemented with only teachers or principals, and those that embarked on a school-wide implementation. Initially, we hypothesized that educators in schools with school-wide implementations would see better improvements due to the synergistic and collaborative effects of having teachers and principals participating together in the program. However, this was not the case. Delving deeper into the inner school dynamics through qualitative research would be an interesting avenue to explore this issue, providing a more nuanced understanding of how different implementation tiers impact educator outcomes and perhaps shedding light on the intricacies of collaborative learning and practice within school settings.

### **Moderation effects on student outcomes**

The moderation effects on student outcomes delved into how the level of school marginalization and the tier of program implementation influenced the impact EW on student outcomes. The data hints at interesting interactions between these factors and the program's efficacy, although our findings for the interaction terms were not statistically significant, subgroup analyses deserve examination regarding differential effects.

Our analysis suggests a trend where children in schools with higher levels of marginalization might derive more benefits from the program, especially concerning their socioemotional competencies. Even though the results from this subgroup analysis reached marginal statistical significance, the observed effect sizes were larger compared to those in schools with lower marginalization levels. This trend of heightened benefits in higher-marginalized schools aligns with the emphasis on the criticality of self-regulation for early school readiness, especially among children growing up in poverty (Blair & Raver, 2015). This body of work suggests that fostering self-regulation can significantly improve the educational trajectories for all children, potentially bridging the opportunity gap exacerbated by poverty. Our program's seeming pronounced impact on students' self-regulatory skills in higher-marginalized settings resonates with this notion, hinting at a promising avenue for promoting equal educational opportunity for all, especially those most in need.

Much like the findings regarding educator outcomes, the tier of program implementation did not exhibit a moderating effect on student outcomes. Statistically significant effects were noted for students in schools where the program was implemented school-wide.

However, the magnitude of the effects, though not reaching statistical significance, was comparable or slightly larger in schools that implemented the program with only teachers or principals. This pattern underscores the need for further inquiry to unravel the dynamics between program implementation, school context, and the evolving social competencies of students.

The statistical insignificance in some findings is attributed to the insufficient power stemming from the small subgroups, as depicted in Table 1B. Only 26% of schools in the student sample have medium-high marginalization levels, and a mere 21.5% implemented the program with only teachers or principals. This limitation accentuates the necessity for broader studies to better understand the moderating effects observed and to ascertain the generalizability of the program's impacts across different school settings.

### **Educating for Well-being ToC**

Our study design and the timing of our data collection points allowed us to capture the unfolding effects at each stage of program implementation. The results provide preliminary evidence that the program's success isn't isolated to one group (i.e., either educators or students) but rather has a cascading effect: starting with educators and extending to their students. In doing so, the findings provide preliminary support for EW's ToC, suggesting the program's structured approach holds promise in promoting socioemotional well-being across both educators and students.

In accordance with the ToC, which posits educator engagement with the program leading to improvements in socioemotional competence, we observed statistically significant

improvements in educators' SEC at T2 (Self-awareness with an effect on purpose of 0.16; emotional regulation with effect sizes ranging from 0.11 to 0.47; and prosociality with effect sizes ranging from 0.14 to 0.20). By T3, educators not only maintained these gains but also showed improvements in self-efficacy and psychological distress. Specifically, we found large magnitude benefits on their sense of efficacy ( $d=0.29$ ) and moderate-to-large improvements in psychological distress (e.g., Depersonalization:  $d = -0.14$ ; Personal Accomplishment:  $d = -0.20$ ; and Depression  $d = -0.21$ ). These observations are consistent with the ToC's projections about the program's intermediate outcomes for educators.

Significantly, these educator outcomes seemingly set the stage for the improvements in children's socioemotional competencies. By T4, when the SEL curriculum had been fully implemented and completed, there were statistically significant improvements in students' overall socioemotional competencies, particularly, their prosocial behavior ( $d=0.37$ ), and emotion regulation ( $d=0.50$ ). The children's outcomes thus provide the “downstream” tentative validation of the program's ToC. Starting with high-quality implementation and educator engagement in the PD component, leading to improved SEC and well-being of educators, we observe a consequent, positive impact on children's SEC. This full-circle effect from educators to students is concordant with the ToC's overarching premise: that educator well-being and socioemotional development are integral to fostering similar competencies in their students.

EW's ToC argues for a systemic approach by proposing that coordinated, state-wide and school-wide efforts are more likely to result in significant, possibly more sustainable, improvements in educator and student outcomes (Mahoney et al., 2021). This unexplored

aspect also opens another avenue for future research, specifically in assessing how the systemic elements in the Theory of Change –that is the Leadership Training– interact in real-world settings to produce these more robust, longer-term, sustainable outcomes.

### **Study strengths**

The present study distinguishes itself in multiple ways, hopefully contributing to the current body of knowledge in the field of SEL. Notably, it rigorously evaluates the Educating for Well-being program—a training-based, contemplatively-informed SEL intervention—on an unprecedented scale. With a sample size involving 2,162 educators and 2,243 students in a northern state of Mexico, this study is not only among the largest of its kind but also meets the “What Works Clearinghouse” standards. This is particularly noteworthy as it addresses a gap in rigorous, large-scale SEL studies in the Latin American context. The study also goes beyond many existing works by incorporating both short-term (three-month) and long-term (twelve-month) follow-up assessments, offering valuable insights into the sustainability of program outcomes. In addition, the study explores the moderating effects of different levels of implementation—whether school-wide, teachers-only, or principals-only—as well as the level of marginalization on both educator and student outcomes. This nuanced approach enriches our understanding of how SEL programs like EW can be optimally implemented in diverse educational settings.

Secondly, the study contributes to the field of contemplative interventions by incorporating the extended ACIP framework, which includes Awareness, Connection, Insight, and Purpose practices. This expansion moves beyond the existing literature that predominantly focuses on mindfulness and connection practices (C. J. Dahl et al., 2015; Hirshberg, Frye,

et al., 2022). Furthermore, EW's approach aligns with proposals which argue for the potential of contemplative practices to both enhance traditional SEL programming and contribute to educator professional development (Greenberg, 2014; J. Davidson et al., 2012). By doing so, our study not only provides a more comprehensive set of practices aimed at improving educator and children's well-being but also supports the expanded role of contemplative practices in achieving social, emotional, and academic outcomes in schools.

Lastly, the study stands out for its pragmatism (I. Ford & Norrie, 2016). Conducted in collaboration with Sinaloa's Ministry of Education during the unprecedented challenges of the COVID-19 pandemic, the study serves as a real-world test case for the Educating for Well-being program. Its naturalistic setting, incorporating the complexities of large-scale implementation, counters the limitations often seen in controlled studies that struggle to transition from the lab to the community (Shonkoff & Fisher, 2013). The study's robust demographic makeup further adds to its external validity. With a focus on in-service educators—encompassing teachers and principals—in a diverse range of public schools, the study provides a representative snapshot of Sinaloa's educational landscape. Moreover, the study included around 30% of all preschool educators in Sinaloa. These demographics not only ensure a broad-based sample but also significantly enhance the study's generalizability to the wider Mexican public school system, thereby making its findings and recommendations highly relevant and actionable for policy and practice. By navigating the logistical and contextual challenges presented by the pandemic, the study offers actionable insights for the scalable and effective implementation of comprehensive, training-based SEL programs like EW, even in the most trying of circumstances.



## **Limitations**

The current study had important limitations, some of which stemmed from practical challenges encountered during the study's implementation amid the COVID-19 pandemic, while others were inherent to the experimental design.

Regarding the practical limitations, the uncertain and everchanging conditions during the pandemic added significant challenges to the implementations of the study. The onset of the COVID-19 pandemic led to two primary disruptions that impacted the study's outcomes. First, the study, originally slated to begin in October 2020, was pushed to late January 2021, significantly compressing the timeframe for the Professional Development (PD) component. This left educators with less time to complete their PD training, exacerbating the challenge of meeting the originally scheduled post-program data collection deadlines. Educators were already stretched thin adapting to new teaching modalities and addressing the needs of students without reliable internet access, which further diminished their availability to complete the PD program on time. These pandemic-induced disruptions brought about a shift in the timing of the intervention's implementation, which, while not altering our original experimental design, did affect the way we can interpret our educator outcomes. The original plan entailed T2 being the post-program data collection point for the PD component, and T3 serving as a follow-up for PD alongside acting as a baseline for the SEL curriculum with children. However, due to the delays caused by the pandemic, only 25% of educators had completed the PD by T2, nudging T3 to act more as a post-program assessment, when 69% had completed the PD.

Our initial design for T3 was set to have a reduced number of adult measures to allow more room for teacher-rated student measures, aiming to not increase the assessment burden on educators. This design remained unchanged. However, the shift in timing led to an incomplete picture of educator outcomes at T3. Due to the pandemic's effects, the PD completion was delayed, and the subsequent assessment at T3 included participants with varying lengths of time since completion of the PD. Thus, the disruptions led to a situation where the data collected at T3 provides a post-program assessment of educator outcomes but with a range of completion timelines, potentially adding a layer of complexity to the interpretation of these outcomes. While our design remained steadfast, the altered timing of the intervention's implementation due to external factors brought about a challenge in the nuanced interpretation of educator outcomes.

Second, the onset of the 2021-2022 academic year brought forth a new set of challenges that further impeded the timely implementation of EW's SEL curriculum with children. Amidst the Mexican Ministry of Public Education initiating the "National Strategy for a Safe Return to School," educators found themselves primarily occupied with the herculean task of re-engaging families and addressing the 13% decline in preschool enrollment (México Evalúa, 2022). The focus shifted towards facilitating the return of students to the classrooms, which inevitably sidetracked the planned SEL curriculum rollout. Moreover, the financial constraints, inadequate infrastructures, and the palpable yet unquantified academic setbacks stemming from the pandemic's disruptive tenure further strained the already limited resources of the schools.

The educators, while grappling with these multifaceted challenges, had their attention diverted from the SEL guidelines. This shift in focus, along with the ongoing adaptation to the SEP's COVID-19 mitigation measures, delayed the expected formal implementation of the SEL curriculum in the 2021-2022 school year to late October, instead of the initially planned early September. Such a delay also meant that some of the proposed SEL activities and planning for that academic year were either postponed or sidelined as these immediate practical challenges took precedence. These disruptions not only complicated our study's ability to assess the full expected impact of the SEL curriculum as it was originally intended to be implemented but may also have partially mitigated the effects that might have been observed in both educators and children had the study been conducted during a more “normal” time.

In terms of experimental design, our study relied predominantly on self-reported measures for educators and teacher-rated outcomes for students. The use of these types of measures, particularly when teachers are rating their own students, could result in social desirability biases and other threats to the validity of the assessment. The ambiguity in distinguishing whether the observed improvements in children's socioemotional competence can be attributed to the intervention of EW's professional development and SEL curriculum, or merely reflect a change in teachers' perceptions remains an unresolved aspect of our study. While this uncertainty prevails, it's important to note that prior research has illustrated a significant association between teachers' perceptions of children's academic and social-emotional skills and a variety of developmental outcomes (Caemmerer & Keith, 2015; Gershenson & Papageorge, 2018; D. E. Jones et al., 2015b). Therefore, interventions like

EW, which potentially facilitate positive shifts in educators' perceptions of children, can be viewed as impactful towards fostering children's positive development.

The limitation of using self-reported measures aligns with concerns raised in the fields of SEL and Contemplative Interventions about the need for high-quality, unbiased assessments (Davidson & Kaszniak, 2015; M. T. Greenberg, 2023). Thus, it is important that future research endeavors extend the evaluation of EW's impact by incorporating child-reported, observational, or task-based outcome assessments. Furthermore, the absence of an active control condition restricts the study's ability to make inferences about the relative efficacy of the EW program against other programs or control for nonspecific factors such as expectancy effects (Davidson & Kaszniak, 2015).

Secondly, the study faces potential conflict of interest issues as the lead author is also co-developer of the program under evaluation. This overlap may introduce both conscious and unconscious biases that could impact the interpretation and reporting of study results (M. T. Greenberg, 2023). Though our research meets the "What Works Clearinghouse" standards, the lack of independent replication may limit the study's generalizability and acceptance in the broader scientific community. One additional limitation of our study is the absence of preregistration for our experimental design. While we have endeavored to conduct our analyses with the utmost rigor and integrity, the lack of a preregistered plan means that our study doesn't meet the ideal standard for hypothesis testing, thereby limiting the strength of our conclusions (Nosek et al., 2018).

In assessing educators' outcomes, we had the advantage of reliable data concerning the fidelity of implementation of EW's professional development, encompassing aspects such as dosage, adherence, and quality of implementation (Klimes-Dougan et al., 2009). This data enabled a more nuanced understanding of how the professional development program was executed and its subsequent impacts on educators. However, this level of insight was not mirrored in our examination of children's outcomes. The data pertaining to the implementation of the children's SEL curriculum was considerably limited, mainly being end-of-year self-reported information from teachers. For instance, we faced challenges in confidently ascertaining whether educators utilized the "Siconautas" or the "10 agreements" curriculum, or both, and reliable information regarding dosage, adherence, and quality of implementation was not collected. This scenario renders our analysis on children's outcomes akin to a "black box" approach, where the intricate dynamics within remain largely unexplored.

Furthermore, the limited data at our disposal restricts our ability to unravel the various contributing factors influencing children's outcomes. The current dataset does not allow us to dissect the different impacts stemming from educators' socioemotional competence and well-being, the implementation of the children's curriculum, or other additional factors such as the tier of implementation. This limitation not only underscores the complexity of the intervention's impact on children but also highlights a significant area for future research. Advancing in this line of inquiry would necessitate a more thorough data collection approach regarding the implementation of the children's SEL curriculum, which in turn, could unveil the mechanisms through which the intervention shapes children's

socioemotional competencies. The nuanced understanding gained from such an exploration could be instrumental in optimizing the program for better outcomes and broader impacts.

Lastly, while our study offers valuable insights through its focus on effect sizes, it could have been further enriched by incorporating an implementation science lens (M. Greenberg et al., 2005). Such an approach would offer a more comprehensive understanding of the study's real-world applicability and potential for scalability in policy and educational settings. Moreover, well-established programs like the Incredible Years and the Promoting Alternative Thinking Strategies (PATHS) curriculum have demonstrated the importance of strong implementation frameworks in ensuring their effectiveness and sustainability (Moir, 2018). Therefore, considering implementation factors could not only enhance the immediate relevance of our study but also provide insights into its long-term efficacy and durability.

While the study offers insights into the potential benefits and scalability of the EW program, these limitations suggest cautious interpretation of the results and point to areas for improvement in future research. With these limitations explicitly acknowledged, future studies can aim to build upon these gaps, perhaps by including an active control condition, partnering with independent researchers, and incorporating more diverse and less biased assessment methods.

### **Suggestions for future research**

Building upon the existing research, the present study marks a first stride in the assessment of EW on educators and student outcomes. However, this endeavor also illuminates the

path for further research pursuits to attain a more comprehensive understanding of EW's impact across diverse educational landscapes. Here are some directions for future exploration, inspired by the insights garnered from the current study:

Regarding the present study, several questions remain that could provide further insights into the mechanisms and impacts of the Educating for Well-being program. In terms of mechanisms, one area of interest would be understanding if changes in educators' self-efficacy and psychological distress are mediated by improvements in self-awareness, emotion regulation, or pro-sociality. Additionally, it would be worth exploring whether the improvements in students' socioemotional competencies are mediated by the educator-level effects of the program. Lastly, investigating the mediating effect of different contemplative practices on educator outcomes, both in terms of the type and amount of practice, could help understand if certain practices are more effective in influencing specific outcomes. Regarding longer-term impacts, examining the program's effect on educators' labor and health-related outcomes such as absenteeism, turnover, and sick leave could be valuable. Also, investigating the early academic outcomes of students who transitioned to the first grade of elementary school post-program, by comparing the grades of those from the intervention and waitlist conditions, could shed light on the extended impact of the program on school readiness and academic achievement.

Looking ahead, an important area of exploration lies in delving deeper into how EW may foster improvements in classroom interactions, which in turn, could potentially enhance student academic and behavioral outcomes as hypothesized in the prosocial classroom model (Jennings & Greenberg, 2009). Previous studies have illuminated the link between

enhanced classroom emotional supportiveness and organization, and improved student-teacher relationships, alongside better student academic and behavioral outcomes. It would be instrumental for future research to scrutinize student outcomes in relation to the observed enhancements in teacher and classroom outcomes within the EW framework.

Evaluating the cost-effectiveness of EW emerges as another crucial facet for further examination. By conducting cost-benefit analyses, a more tangible value proposition of EW could be articulated, aiding in garnering support from school leaders and policymakers. Furthermore, extending the evaluative lens to discern the program's impact on educators' physical health could offer additional insights. Incorporating physiological measures such as cortisol levels, blood pressure, and immune function assessments in future studies might unveil the broader health implications of EW. An investigation into educators' health care utilization, possibly through an examination of insurance records, could also provide valuable data. Discovering a positive correlation between EW participation and reduced health care costs could significantly bolster the appeal of EW to educational leaders and policymakers, showcasing not only an educational but also a health and economic incentive for broader adoption of the program. Additionally, exploring the impact of EW on educator turnover and absenteeism might present a clearer picture of the program's broader benefits, potentially highlighting its role in enhancing educator retention and overall school functioning.

The current format of Educating for Well-being (EW) has demonstrated effectiveness within the Mexican educational context. The program, delivered as an 80-hour professional development course spanning six months, has been validated and accredited by the Unidad



de Sistema para la Carrera de las Maestras y los Maestros (USICAMM) and now officially recognized as a 120-hour federal professional development diploma. This federal accreditation not only underscores the program's credibility but also serves as a significant incentive for educator participation. However, as we contemplate improving EW and expanding beyond the Mexican borders, it's crucial to explore how variations in the program's intensity and duration may impact educator and student outcomes in different educational landscapes. By delving into this aspect, there's an opportunity to find a balance that maintains the efficacy of the program while potentially reducing the time and intensity demands, making it more feasible for broader adoption.

To effectively streamline the EW program, identifying its active ingredients is paramount. A rigorous investigation into what elements of EW are driving the observed positive outcomes will pave the way for the development of a more succinct yet efficacious intervention model. Upon isolating the active ingredients, efforts can be directed towards devising shorter versions of EW that retain the desired efficacy, crucial for enhancing the accessibility and adherence to the program, especially in educational settings with constrained resources. In addition, the hybrid delivery model of EW, encompassing synchronous and asynchronous sessions, opens avenues for investigating how modifications in program structure could potentially enhance its feasibility for broader adoption, without compromising its efficacy.

Reducing the initial intervention duration could also open avenues for ongoing professional development. Continuous active skill-building and community learning engagements could serve to sustain and build upon the initial gains from the EW program, fostering a culture of

lifelong learning and growth among educators. An uncharted yet potentially impactful research avenue is the exploration in the development of expertise in educators' socio-emotional competencies. Delving into this realm may unveil innovative strategies for nurturing and assessing SEC expertise, thus propelling SEL forward in a significant way.

Should a reduction in time and intensity while maintaining positive outcomes be achievable, the likelihood of schools adopting EW as an ongoing comprehensive SEL program could markedly increase. This not only has implications for the scalability of EW beyond the Mexican borders, but also for establishing a robust, sustainable framework for fostering socio-emotional competencies within the educational ecosystem. In this context, exploring the influence of varying geographic locales, grade levels, and racial diversity on the effectiveness of EW is crucial as each of these factors brings a unique set of dynamics that could potentially moderate the outcomes of the intervention. A more nuanced understanding of these moderating variables will significantly contribute to the adaptability and effectiveness of EW across a broader spectrum of educational settings.

Finally, the Leadership Training component within EW's Theory of Change presents an intriguing avenue for further exploration and research. The proposition that a carefully selected cohort of educational stakeholders, when empowered with systemic leadership training, could spearhead significant improvements in state- and school-wide SEL outcomes is compelling. This cohort is envisioned to play a pivotal role in fostering local capacity, orchestrating systemic SEL planning and implementation, offering sustained support to educators and schools, enhancing student learning and well-being, and facilitating crucial contextual adaptations to meet the unique needs of diverse communities.

Such adaptations could be instrumental in advancing equity, quality, and ensuring cultural and linguistic relevance, thereby contributing to the long-term sustainability of the intervention.

Although the current study did not implement nor evaluate the Leadership Course component of EW, the potential implications of this facet of the program are vast. Future research endeavors could meticulously examine the impact of this leadership training on the scalability, sustainability, and adaptability of the intervention's effects and benefits.

Investigating how the infusion of leadership training influences the ripple effect of positive outcomes across the educational ecosystem, and whether it amplifies the intervention's ability to narrow the inequality gap and enhance educational quality, would be of immense value. Furthermore, examining how the leadership training component facilitates the embedding of the intervention within the educational fabric, ensuring its relevance and resonance within varied cultural and linguistic contexts, could provide crucial insights.

Such inquiry could significantly enrich the narrative around the Educating for Well-being program, offering a more holistic understanding of its potential to foster a more equitable, resilient, and inclusive educational landscape in Mexico and beyond. This exploration could also unveil actionable insights for policy and practice, aiding the meticulous crafting of strategies aimed at elevating the impact and reach of SEL interventions within the complex, real-world educational settings.

## **Conclusion**

Overall, our findings replicate and extend previous work by showing not only improvements in educator well-being but also significant positive changes in their students' social and

emotional competencies. Our results suggest that a well-structured SEL intervention could serve as a useful tool for enhancing the well-being of educators and students, contributing to the broader educational psychology literature and potentially providing some insights for policy and practice in early childhood education, especially within a Mexican context.

The Covid-19 pandemic has presented unprecedented challenges to educational systems worldwide, with the closure of schools and other restrictive measures resulting in a disparate and adverse impact on children and educators. These disruptions have unveiled and exacerbated existing challenges within the educational landscape –from educators' stress and burnout, and the inadequacy of quality professional development, to the hurdles faced by children living in poverty in achieving early social and emotional milestones– and have particularly accentuated educational and economic inequities, with the disparities being especially pronounced for children from low socio-economic backgrounds. The enduring repercussions of these educational setbacks are anticipated to carry a significant economic toll if remedial measures are not deployed (Werner et al., 2023).

In our study, through the Educating for Well-being intervention, we explored a tangible pathway to mitigate some of these challenges by focusing on enhancing educators' SEC and well-being. By fostering improvements in educators' self-awareness, emotion regulation, pro-sociality, self-efficacy, and mitigating psychological distress, we are not only addressing the immediate concerns related to educator well-being but also creating a ripple effect that positively impacts students and the broader educational system. This adds to the existing body of research which underscores the influence of educator quality, SEC and

well-being on student outcomes (P. A. Jennings & Greenberg, 2009; Mahfouz et al., 2019; Rivkin et al., 2005).

Although the unique stressors associated with the global pandemic are somewhat transient, the necessity for improving mental health and well-being among educators remains an enduring concern (Schonert-Reichl, 2019). Even before the pandemic, elevated levels of educator stress were a significant concern (Kyriacou, 2001; Mitani, 2018), and many of the conditions contributing to this stress remain. In Mexico, where stress and burnout levels among educators were already high pre-pandemic, and where the pandemic has exacerbated the demands on educators without providing adequate support, interventions like Educating for Well-being are not merely beneficial but essential (Mexicanos primero, 2023). Looking ahead, educators and school system employees will continue to grapple with their everyday stressors, alongside the emerging challenges from this volatile, uncertain, complex, and ambiguous world (Horney et al., 2010). Hence, supporting educators in developing the social and emotional competencies to navigate these challenges is crucial, not to mention imparting these competencies to future generations of children (Hadar et al., 2020).

By improving children and educators' SEC and well-being, we are fostering a more conducive learning environment that not only enhances instructional quality but also potentially narrows the inequality gap exacerbated by the pandemic (Werner & Woessmann, 2023). This approach resonates with the broader objective of not merely navigating the challenges posed by the pandemic, but also tackling the enduring challenges within the educational landscape in Mexico. It dovetails with UN's Fourth Sustainable Development Goal (UN DESA, 2023) which advocates for inclusive and equitable quality

education and the promotion of lifelong learning opportunities for all, ultimately contributing towards fostering a more equitable and resilient educational system equipped to address ongoing and future challenges. The long-term economic and societal gains of SEL interventions like EW are likely to far outweigh the costs (Belfield et al., 2015), thereby making a compelling case for immediate and sustained action. Through a concerted effort to enhance educators' SEC and well-being, we can significantly contribute towards a more equitable and resilient educational framework in Mexico and worldwide, capable of withstanding current and future challenges.

### **Partnerships**

The present study was made possible by the collaborative partnership between a research institution, an NGO, and a government agency, with each partner contributing their unique strengths and expertise to ensure its success. The researcher team, based at the University of Wisconsin-Madison's Center for Healthy Minds (CHM), provided theoretical expertise and scientific rigor, as well as a platform for sharing findings with an international audience. AtentaMente<sup>18</sup>, an NGO based in Mexico with years of experience providing socioemotional training to public and private sector workers, ensured that the intervention was implemented smoothly, closely monitoring and following up with participants as needed to promote program completion and data collection goals. As a result, attrition was

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<sup>18</sup> Leandro Chernicoff has a conflict-of-interest management plan in place with the University of Wisconsin-Madison to ensure that his involvement in the development of Educating for Well-being does not compromise research endeavors.

a minor concern and, due to the amount of monitoring data that was collected and processed, the research team was able to explore the relationship between program intensity and participant outcomes. Finally, co-implementing Educating for Well-being with the Ministry of Education of Sinaloa provided a real-world laboratory in which to evaluate the intervention, increasing the scope of the study and the generalizability of its findings. Finally, much like the academic platform provided by CHM, the involvement of a government agency makes it more likely that the study's results will be used for policy-making decisions and opens the door to scaling up adoption of the intervention at the state and potentially federal level.

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

During the preparation of this work the author used *ChatGPT-4* (OpenAI, 2023) in order to translate written text from Spanish to English and to edit and rewrite text written in English with the intention to improve readability and clarity. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

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