

AMERICAN UNIVERSITY OF BEIRUT

A SYSTEMATIC REVIEW OF SOCIAL-EMOTIONAL
LEARNING (SEL) IMPLEMENTATION AND
EFFECTIVENESS IN K–12 SETTINGS (1990-2024)

by
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A thesis
submitted in partial fulfillment of the requirements
for the degree of Master of Arts
to the Department of Education
of the Faculty of Arts and Sciences
at the American University of Beirut

Beirut, Lebanon
April 2025

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ACKNOWLEDGEMENTS

First and foremost, I want to thank my advisor, Dr. Anies Al-Hroub, for his incredible support, guidance, and patience throughout this journey. His insight and encouragement have truly shaped my work, and I am so grateful for his wisdom and belief in me.

I am deeply grateful to my thesis committee members and the librarian for their invaluable insights and scholarly guidance. Their expertise and thoughtful feedback have significantly enhanced the depth and quality of my work.

Appreciation is extended to my professors in the education department and to my fellow graduate students; being part of such a wonderful group of peers made this journey all the more rewarding. Special thanks to Rana Al Hoss for her invaluable assistance and unwavering support throughout the research process.

To my amazing parents, Sonia and Nabil, thank you for your endless emotional support, love, and encouragement. Your belief in me has given me the strength to push through challenges, and I am so lucky to have you cheering me on.

I am incredibly thankful to my siblings, Jude and Yacoub, for their constant love and support throughout this journey. Your encouragement has been a steady source of comfort and strength, and your ability to always know when I needed a laugh or a listening ear made all the difference. I couldn't have made it without you both.

To my extended family, my aunts and uncles, thank you all for your continued support, encouragement, and love. I am so grateful to have you in my life. A special thank you to my cousin Cynthia, who has always been more like a big sister to me. Your unwavering support and love mean the world to me.

A heartfelt thank you to my aunt, Dr. Faten Nazzal, who has been my absolute rock. Her unwavering support, kindness, and wisdom have been invaluable every step of the way. Her thoughtful advice and constant encouragement were exactly what I needed to keep going. I'm beyond grateful to have her by my side.

A big thank you to all my friends for their patience and understanding, especially when my anxieties took over and I needed to step away for a bit to focus on this study. Your support has meant the world to me.

Last but certainly not least, to Joseph, my husband-to-be, thank you for being my biggest cheerleader, my sounding board, and the one who kept me grounded through it all. Your love, patience, and support have been my driving force, and I can't wait for the journey ahead of us.

ABSTRACT OF THE THESIS OF

Lynn Nabil Haddad

for

Master of Arts

Major: Education

Title: A Systematic Review of Social-Emotional Learning (SEL) Implementation and Effectiveness in K–12 Settings (1990-2024)

This thesis presents a systematic review exploring the effectiveness of SEL programs in enhancing academic performance and classroom behavior in school settings, with a particular focus on global research and its applicability to Lebanon. The review examined studies published between 1990 and 2024. However, following a rigorous selection process using PRISMA guidelines, eighteen studies were included in the final analysis. The selected studies were evaluated for methodological quality using the MMAT 2018 and CEC standards. Furthermore, this study systematically compares previous reviews on SEL to the objectives and research questions of the current study to establish the significance of conducting this study and highlight the unique contributions of this work. The findings consistently highlight the positive impact of SEL interventions on students' social-emotional competencies, classroom engagement, and behavior. Programs such as You, Me and the Little Monsters and MindUP significantly improved emotional regulation and peer connectedness, while SPARK Child Mentoring and Incredible Years Teacher Classroom Management enhanced communication and behavior management, particularly for students with behavioral challenges. Additionally, SEL programs contributed to a more positive school climate and increased student engagement, as demonstrated by Positive Action. However, some studies reported mixed outcomes, with unintended consequences such as increased psychosomatic complaints. While SEL interventions positively influenced student engagement and behavioral outcomes, their direct impact on academic performance remains debated. Programs like Second Step showed improvements in academic performance in high-need schools, whereas RULER reported enhanced engagement and behavior without significant academic gains. The review also identified key gaps, including the long-term sustainability of SEL benefits, the need for contextual adaptability, and methodological inconsistencies in program evaluation. Based on these findings, the study provides recommendations for integrating SEL programs into Lebanon's educational system, emphasizing teacher training, culturally responsive frameworks, and robust assessment methods. Future research should focus on longitudinal studies and standardized evaluation tools to better understand SEL's long-term effectiveness and optimize its implementation across diverse educational settings. Additionally, it should evaluate the practical implementation of SEL strategies in Lebanese schools, considering the socio-economic characteristics of students and the challenges within the national education system.

Keywords: Social Emotional Learning, SEL interventions, academic performance, classroom behavior, systematic review, PRISMA, MMAT.

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ABBREVIATIONS

3PI	Three Principles Inventory for Youth
ANOVA	Analysis of Variance
APA	American Psychological Association
ASCA	American School Counselor Association
ASE	Advocating Student-within-Environment
BASC	Behavior Assessment System for Children
CASEL	Collaborative for Academic, Social, and Emotional Learning
CBCL	Child Behavior Checklist
CEC	Council for Exceptional Children
CL	Cooperative Learning
CLASS	Classroom Assessment Scoring System
CRDP	Center for Educational Research and Development
CSC	Caring School Community
CSPAP	Comprehensive School Physical Activity Program
CSR	Collaborative Social Reasoning
CDP	Communication, Decision Making and Problem-Solving scale
DBR-SIS	Direct Behavior Rating – Single Item Scales
DERS-SF	Difficulties in Emotional Regulation Scale
EBD	Emotional Behavioral Disorder
ECEC	Early Childhood Education and Care
EF	Executive Function
EFA	Exploratory Factor Analysis
ELL	English Language Learner

EPOCH	Enthusiasm, Perseverance, Optimism, Connectedness, and Happiness
GLM	Generalized Linear Modeling
GPA	Grade Point Average
HBSC	Health Behaviour in School-aged Children
IEP	Individualized Education Program
IY-TCM	Incredible Years® Teacher Classroom Management
JBI	Joanna Briggs Institute
MBI	Mindfulness-Based Interventions
MBSEL	Mindful-based social and emotional learning
MBSR	Mindfulness-Based Stress Reduction
MEFS	Minnesota Executive Function Scale
MEHE	Ministry of Education and Higher Education
MMAT	Mixed Method Appraisal Tool
MTP	My Teaching Partner
NY	New York
ODRs	Office Discipline Referrals
PATH	Promoting Alternative THinking Strategies
PBIS	Positive Behavioral Interventions and Supports
PBRS	Prosocial Behavior Rating System
PD	Professional Development
PFC	Prefrontal Cortex
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PSS	Psychosocial Support
QITABI	Quality Instruction Towards Access and Basic Education Improvement

RC	Responsive Classroom
RCT	Randomized Control Trial
REDI	Research-Based, Developmentally Informed
REDI-P	Research-Based, Developmentally Informed-Parents
RULER	Recognizing, Understanding, Labeling, Expressing
SDQ	Strengths and Difficulties Questionnaire
SE	Social-Emotional
SEC	Social Emotional Competences
SEL	Social Emotional Learning
SELF	Social-Emotional Learning Foundations
SPARK	Speak to the Potential, Ability, and Resilience inside every Kid
SSBS	School Social Behavior Skills
SSIS	Social Skills Improvement System
SSRS	Social Skills Rating System
SSS	Student Success Skills
TAF	Thoughts-Actions-Feelings
TOCA-R	Teacher Observation of Classroom Adaptation–Revised
TRF	Teacher Report Form
USAID	United States Agency for International Development
USB	Universal School-Based
WHO	World Health Organization’s
YSR	Youth Self-Report

CHAPTER 1

INTRODUCTION

This systematic review study aims to explore the effectiveness of integrating social and emotional learning (SEL) programs in enhancing academic performance and classroom behavior in school settings, both globally and in Lebanon. The research primarily involved a systematic review that synthesized existing research on SEL interventions to assess their impact on K -12 students' academic achievement and classroom behavior. The review provided a comprehensive understanding of effective SEL practices worldwide. Implementing SEL in Lebanon is particularly important, as Lebanese students experience stress stemming from cultural and religious diversity, socioeconomic disparities, political instability, trauma and refugee displacement. This thesis proposed context-specific recommendations emphasizing that any SEL program introduced into the Lebanese educational system must be culturally responsive and trauma-informed to effectively address the unique challenges faced by Lebanese students. Recognizing these needs, Lebanon has already taken initial steps to embed SEL into schools and classrooms. Despite the absence of national policy guidelines, several initiatives have been undertaken. For instance, the Lebanon Social and Emotional Learning Framework, developed through collaborative efforts between the Lebanese Ministry of Education and Higher Education (MEHE) and USAID, provides a roadmap for integrating SEL into the Lebanese educational system. Another initiative is the QITABI Program, implemented by World Learning under an agreement with USAID, which focuses on promoting inclusive education and enhancing the quality of teaching and learning in Lebanon, including efforts to integrate SEL into classroom

instruction and teacher training. However, future research should focus on developing SEL programs specifically adapted to the Lebanese context and conducting empirical studies to validate their adaptability. While this thesis does not conduct an empirical validation of the recommendations for implementing SEL in Lebanon, it proposes a research framework for future studies to assess their applicability. The proposed framework involves conducting workshops, interviews, and surveys with school counselors and teachers in Lebanon in collaboration with members of the Ministry of Education and Higher Education (MEHE). This approach would facilitate the collection of valuable insights based on the expertise and experiences of key stakeholders in the Lebanese education system. Future research could also incorporate participants' recommendations regarding the feasibility and best practices for implementing SEL programs in Lebanon. Overall, this study offers a comprehensive understanding of the effectiveness of SEL interventions globally along with actionable recommendations for implementing SEL in Lebanon, and a framework for evaluating them. These findings serve as a foundation for future research on SEL implementation and evaluation within the Lebanese educational context.

Background

Social-emotional learning (SEL) interventions play a crucial role in promoting students' emotional well-being and addressing educational challenges. In the 21st century, education extends beyond mastering core subjects and requires schools to support students in developing their social-emotional competence (Ahmed et al., 2020). Evidence suggests that students' social-emotional skills, academic performance, behavioral issues, and mental well-being are closely interrelated. However, many educators continue to prioritize behavior management due to its direct impact on

reducing problematic behaviors and its potential to enhance academic outcomes. Students lacking social-emotional skills may struggle with learning and appropriate behavior unless they receive explicit instruction and practice opportunities. These skills, often referred to as academic enablers, enhance engagement and increase time devoted to academic tasks (Davies et al., 2019).

Educational leaders are increasingly emphasizing direct instruction in social-emotional skills, illustrated in Figure 1, as an alternative to behavior management strategies. These skills include recognizing and regulating emotions, expressing empathy, resolving conflicts, understanding social cues, cooperating with others, solving social problems, and considering multiple perspectives (Rivers et al., 2013). SEL is the process through which individuals acquire the knowledge, skills, and attitudes necessary to manage emotions and establish positive relationships. With growing recognition of its importance, SEL has become a key focus in education, helping students navigate a shifting world (Kasper & Massey, 2022). Numerous studies have highlighted the effectiveness of SEL interventions in fostering self-empowerment through culturally relevant approaches (Ceballos et al., 2021; Davies et al., 2019). However, there is significant variability in the implementation of school-based SEL programs, which has been linked to their outcomes for both teachers and students (Durlak, 2016).

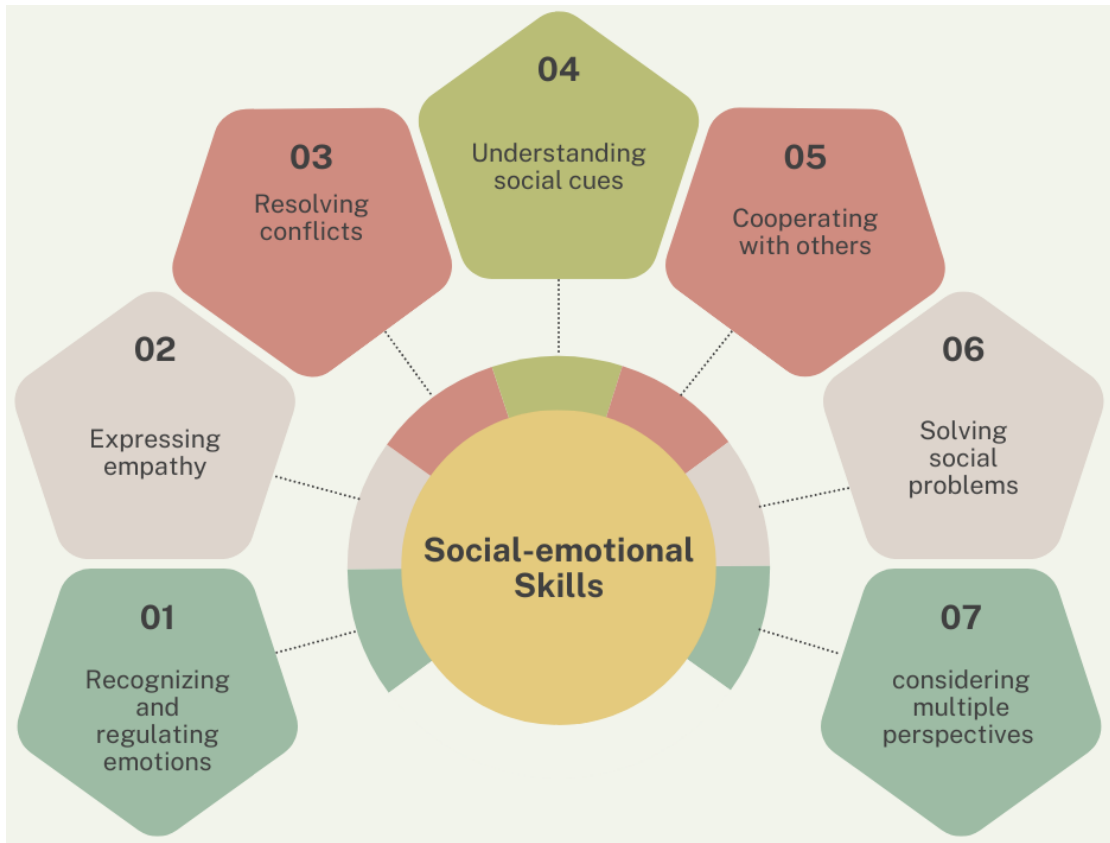


Figure 1: Social-Emotional Skills

The study involved a systematic review of previous research on SEL interventions in educational settings. This approach enabled the identification of patterns, trends, and gaps in the current knowledge base. A systematic analysis of existing literature ensured that conclusions were drawn from a robust foundation of evidence, providing valuable insights for educators, policymakers, and other stakeholders. By examining a wide range of studies, the review identified effective SEL interventions and best practices for implementation in school settings.

Research Aims and Questions

The primary aim of this study was to systematically assess the effectiveness of various social-emotional learning (SEL) programs and interventions implemented in K-

12 classroom settings. Specifically, the study examined their impact on key student outcomes, including classroom behavior and academic achievement. Through a comprehensive review of existing research, it sought to identify evidence-based SEL strategies that enhance students' educational experiences and overall well-being. Beyond evaluating effectiveness, the study aimed to bridge the gap between research and practice by developing practical recommendations for integrating SEL into Lebanese schools, with a particular focus on K-9 students. Although the systematic review encompassed K-12 studies, its recommendations primarily targeted K-9 students due to the critical role of early intervention in fostering social-emotional development, improving behavior, and enhancing academic success. In contrast, SEL programs for grades 10-12 typically focus on university preparedness and career-related skills, which fall outside the scope of this study. By synthesizing findings from empirical research, the study provided educators, policymakers, and curriculum developers with actionable tools and strategies for successful SEL implementation. To achieve these aims, the study addressed the following research questions:

1. What are the available studies that explored the effectiveness of SEL programs on students' academic and social-emotional skills?
2. What do we know about the types, themes, and content of SEL programs utilized in empirical research?
3. What do we know about the tools and procedures used to evaluate the effectiveness of SEL programs?
4. What are the qualities of empirical evidence for peer-reviewed studies on SEL programs, as assessed by the Council for Exceptional Children (CEC) and the Mixed Methods Appraisal Tool (MMAT)?

Rationale for the Study

The rationale behind this study lies in the increasing awareness of the importance of social-emotional learning (SEL) in schools and the need for a systematic review to assess its effectiveness. Rising concerns about academic underperformance, dropout rates, counseling challenges, and the prevalence of trauma among students highlight the urgency of identifying effective SEL strategies. Despite the expansion of SEL research, gaps and inconsistencies remain, necessitating a comprehensive review to provide educators, policymakers, and stakeholders with a clearer understanding of SEL interventions, particularly in classroom behavior and academic performance. By systematically reviewing SEL interventions and associated programs, this study contributes to a more evidence-based understanding of their effectiveness and limitations. This, in turn, supports efforts to integrate SEL interventions in school settings to improve students' emotional well-being and academic success.

A systematic review is particularly valuable in this context, as it reduces bias by evaluating existing studies based on established quality criteria. This approach enhances the understanding of best practices, intervention efficacy, and implementation strategies while also identifying areas requiring further investigation. By analyzing a broad spectrum of SEL research, this study offers unique insights into the impact of SEL interventions on student outcomes and overall well-being. To capture the evolution of SEL research and practice, this review examines studies published between 1990 and 2024. This timeframe encompasses key developments, shifts in educational paradigms, and emerging trends, ensuring the inclusion of both foundational research and the latest advancements in SEL. The incorporation of recent studies strengthens the study's

relevance by integrating the most up-to-date findings and best practices in SEL implementation.

Significance of the Study

The findings of this study provided a comprehensive, evidence-based assessment of the effectiveness of social-emotional learning (SEL) interventions and associated programs in enhancing academic achievement and improving classroom behavior. Thus, the study underscored the broader significance of SEL interventions in fostering a positive school climate, reducing behavioral challenges, and promoting students' overall well-being. By establishing a strong foundation for best practices, this systematic review supported long-term improvements in educational systems, ensuring that SEL was effectively integrated into both research and practice.

Beyond contributing to the academic literature, this study offered valuable practical implications for educators, policymakers, and curriculum developers. For educators, the findings highlighted best practices for integrating SEL into daily classroom activities and supporting teacher training programs that equipped instructors with the necessary tools to foster students' emotional and social development. For policymakers, the study provided evidence-based recommendations that could inform educational policies, ensuring that SEL was embedded within school frameworks and national curricula. For curriculum developers, the insights gained from this review aided in designing structured, developmentally appropriate SEL programs that aligned with educational goals and addressed students' evolving social-emotional needs.

Additionally, the study identified existing research gaps and highlighted areas requiring further exploration. By synthesizing multiple studies, it established a clearer understanding of unresolved questions in SEL research and suggested directions for

future studies, thereby contributing to the ongoing development and refinement of SEL interventions.

CHAPTER 2

REVIEW OF LITERATURE

Chapter Overview

This section provides insights gained from previous studies addressing Social-Emotional Learning (SEL) over the past three decades. The objective was to develop an understanding of the key components of SEL and the pivotal role of schoolteachers and counselors in its effective implementation. The review first covers an overview of systematic review and how it differs from a literature review. In addition, topics such as the definition of SEL, social-emotional skills, the role of counselors in schools, and the importance of SEL in school counseling will be covered. Additionally, various types of SEL programs and their integration into school models will be explored. Furthermore, the literature review will delve into students' social and emotional development, including the identification and assessment of deficiencies, as well as the factors necessitating SEL interventions. Moreover, it will address the influence of counselors' and teachers' social-emotional competence on student achievement, engagement, and behavior. The impact of SEL on students and classrooms, as reported in previous studies, will also be examined. Lastly, the section will discuss how these previous studies inform the current study and their connection to the research questions and study objectives.

Systematic Review

Systematic reviews are thorough research methods that consolidate evidence from various studies on a specific topic. Their primary purpose, according to Nunn and Chang (2020), is to comprehensively summarize existing evidence, helping evidence-

based practice in healthcare decisions, research priorities, and policymaking. They help identify research gaps, assess the current state of knowledge, and guide future studies, emphasizing methodological consistency and the importance of clear inclusion criteria, systematic search methods, and rigorous assessment of study quality for reliable results. Various types of systematic reviews exist, including meta-analyses, scoping reviews, umbrella reviews, and living systematic reviews, these represent distinct yet complementary approaches to synthesizing evidence in research, each with its own strengths and limitations. Meta-analysis, as described by Duveneck (2015) and elaborated by Cogaltay and Karadag (2015), offers a quantitative summary by pooling data from multiple independent studies, enhancing statistical power and precision. This approach is particularly valuable in fields with diverse findings or insufficient statistical power, offering a reliable assessment of effect sizes and identifying patterns and trends across studies. In contrast, scoping reviews, as discussed by Sharma and Goyal (2023), aim to map the breadth and complexity of the literature, identifying key concepts, common patterns, and gaps. They offer a comprehensive overview, especially in areas with a vast or heterogeneous body of research, and highlight areas for further inquiry, making them instrumental in advancing knowledge and refining research agendas. Umbrella reviews, as defined by Aromataris et al. (2014), provide an overview of systematic reviews and meta-analyses, consolidating evidence from multiple sources to offer a broader perspective. This approach allows for the identification of recurring patterns and gaps in the literature, helping researchers make informed decisions about future research priorities. Finally, living systematic reviews (Heron et al., 2023) represent an innovative approach, offering ongoing, real-time updates to ensure the review remains current in rapidly evolving fields. By continuously integrating new

evidence, LSRs enable researchers and policymakers to make timely, evidence-based decisions. While these methods offer powerful tools for synthesizing research, each approach presents challenges, such as resource constraints, methodological rigor, and ensuring the relevance and reliability of findings. Nonetheless, when employed appropriately, these review methodologies collectively enhance our understanding of complex topics, guiding future research and informed decision-making.

Literature reviews serve as valuable tools for researchers, offering structured insights into existing knowledge and highlighting research gaps for readers' interpretation and application (Wee & Banister, 2016). They involve thorough examination and synthesis of information, requiring extensive reading and data gathering, which are commonly utilized in teaching and research (Wee & Banister, 2016). These reviews vary in form, ranging from synthesizing previous knowledge to analyzing research methods or exploring theoretical frameworks and gaps in literature (Wee & Banister, 2016). Researchers select the review type and methodology based on the study purpose and research questions (Snyder, 2019). In contrast, systematic reviews differ from traditional narrative literature reviews by employing formal methods to assess intervention effects, enhancing result accuracy (Aromataris & Pearson, 2014). Unlike narrative reviews, systematic reviews prioritize data and evidence over concepts and theories, resulting in less biased conclusions. Detailed data extraction and analysis processes reduce subjectivity, particularly in assessing treatment effects (Aromataris & Pearson, 2014). While traditional reviews offer general knowledge or historical context, they may be criticized for their subjective and descriptive nature, lacking rigorous analysis. Consequently, systematic approaches have evolved, particularly in medicine and health fields, to enhance data collection,

assessment, and synthesis (Aromataris & Pearson, 2014). The main differences between the two types of reviews are summarized in Table 1.

Table 1: Differences Between Systematic and Conventional Literature Review

Research Element	Traditional Literature Review	Systematic Review
Research Questions	Covers either a broad or specific subject area, often driven by general interest or thematic exploration.	Focuses on precise, well-defined, and specific research inquiries, addressing a particular question or hypothesis.
Methodology	Involves a broad examination and synthesis of existing research findings, often lacking predefined criteria or systematic methods	Uses predefined criteria and rigorous, structured methods to systematically identify, select, and synthesize relevant studies.
Goal	Provides a general overview and synthesis of existing literature on a topic, offering an accessible summary.	Focuses on systematically gathering, evaluating, and synthesizing empirical evidence to answer a specific research question.
Results	Presents a broad overview of existing knowledge, potentially lacking depth in any one area.	Offers a rigorous and comprehensive synthesis of empirical evidence, providing more precise, valid, and unbiased conclusions.
Content	Includes a wider range of sources and perspectives, potentially with limited depth.	Involves structured and detailed analysis, based on carefully selected studies adhering to specific inclusion criteria.
Data	Data and information are gathered and summarized, with limited evaluation against predetermined criteria.	Data undergoes systematic examination, synthesis, and evaluation based on predetermined inclusion/exclusion criteria.

Annous (2022)

Various tools are used in systematic reviews to assess the quality and rigor of studies. For this study, PRISMA, CEC, and MMAT were used, each of which was selected for their relevance and applicability to the research methodology. Additionally, other well-established tools, such as The Campbell Collaboration and The Cochrane Collaboration, are frequently employed in social science and healthcare research, respectively, to conduct systematic reviews and meta-analyses. The Campbell Collaboration specializes in social science research and produces reviews of the effects of social interventions across various fields, including education, crime and justice, and social welfare (Boruch et al., 2002). The Cochrane Collaboration is primarily recognized for its healthcare systematic reviews, focusing on assessing the effectiveness of medical interventions, and its methods, known for their reliability and consistency, can also be applied to educational psychology and special education research (Akl et al., 2019). In this study, PRISMA was used as a reporting guideline to ensure completeness and transparency in the systematic review process. It provides a structured framework consisting of a checklist and flow diagram to help reviewers clearly communicate their methods and findings, facilitating the reproducibility and interpretation of results (Selcuk, 2019). CEC, on the other hand, provides resources, guidelines, and support for researchers working in special education. While it does not directly conduct systematic reviews, it offers expertise and standards that researchers may incorporate into their methodologies to ensure quality and relevance in the field of special education. CEC specializes in systematic reviews related to social interventions, including special education, and is known for its well-evidenced syntheses (Cumming et al., 2023). Finally, MMAT is a tool used to assess the quality of qualitative, quantitative, and mixed-methods research studies. This tool was employed in this study to evaluate the

methodological rigor of the selected articles, ensuring comprehensive and rigorous evaluation of studies across different research designs (Quan et al., 2019).

Social-Emotional Learning (SEL) and School Counseling

Social-emotional learning (SEL) has progressed in the education sector in recent years and is now receiving increased recognition as students adjust to a shifting world and, consequently, a new learning environment. It involves motivating students to pursue and achieve goals, problem-solving, and communicating proficiently. SEL is the process by which children, adolescents, and adults acquaint themselves with the skills needed for developing healthily and having healthy relationships, such as empathy, emotional intelligence, and goal setting (Kaspar & Massey, 2022). Moreover, according to Ahmed et al. (2020), social-emotional skills have garnered attention from educators, researchers, and policymakers, who recognize the vital objectives of education. This includes fostering students' capacity to learn and nurturing individuals with healthy self-esteem, self-control, empathy, social skills, and morality.

Recent research highlights the growing use of simulation-based learning to enhance teachers' social-emotional learning (SEL) competencies. Kasperski et al. (2025) conducted a systematic review of 68 studies, identifying five main simulation types: case studies, virtual simulations, immersive simulations, role-play, and clinical simulations. Their findings reveal inconsistencies in defining and categorizing these simulations, complicating efforts to assess their effectiveness. Among the identified simulation types, clinical simulations demonstrated the strongest focus on SEL development, particularly in fostering social awareness and relationship skills. While integrating multiple simulation types may enhance SEL training, concerns remain regarding potential learner fatigue and inconsistent implementation. The study also

highlights the emerging role of AI-driven simulations, which offer adaptive, interactive experiences for teacher candidates, though their full potential has yet to be realized. Kasperski et al. (2025) emphasize the need for standardized frameworks to optimize SEL-targeted simulations in teacher education. Clear definitions, structured implementation, and further comparative research are essential for refining best practices and ensuring effective SEL development in educators. On the other hand, Taha et al. (2025) examined the implementation of SEL programs in Malaysian primary schools, highlighting their role in fostering emotional intelligence, improving classroom behavior, and enhancing student engagement. Despite these benefits, challenges such as limited resources, large class sizes, and inadequate teacher training hinder effective execution. Integrating SEL into school curricula requires adequate funding, professional development, and strong leadership commitment to ensure sustainability. Structural barriers, including resource constraints and competing academic priorities, pose significant obstacles, while the complexity of measuring SEL outcomes underscores the need for reliable assessment tools. The study found that well-structured SEL programs enhance students' emotional intelligence, improving their ability to regulate emotions, express feelings, and understand others' perspectives, leading to reduced classroom conflicts and increased cooperation. Additionally, participation in SEL programs positively influences academic performance by fostering self-awareness, self-management, and responsible decision-making, resulting in higher motivation, improved classroom participation, and better academic outcomes. To optimize SEL effectiveness, schools must integrate evidence-based frameworks, prioritize teacher training, and allocate sufficient resources. Addressing structural challenges such as large class sizes and ensuring reliable assessment methods are critical for sustainability.

Taha et al. (2025) emphasize the need for systemic support to maximize the long-term benefits of SEL and suggest future research exploring its relationship with teacher well-being, stress, and psychological factors affecting both students and educators.

In addition, social-emotional competence encompasses the ability to interact effectively with others, manage and regulate cognitive processes, and control one's emotions and behavior. Students possessing these attributes are likely to be socially-emotionally balanced and achieve academic success in the classroom (Ahmed et al. 2020). For instance, according to Murano et al. (2020), students who demonstrate social-emotional competence may exhibit behaviors such as actively listening to peers, effectively resolving conflicts, demonstrating resilience in the face of challenges, and exhibiting empathy toward others' perspectives. In other words, social and emotional skills encompass both interpersonal and intrapersonal abilities, allowing students to comprehend and regulate their emotions, set and attain constructive objectives, demonstrate empathy toward others, foster and sustain positive connections, and make well-advised choices (Murano et al., 2020). Furthermore, Ahmed et al. (2020) characterized social-emotional competence as possessing specific abilities such as self-awareness (recognizing emotions and confidence), self-management (regulating impulses and coping with stress, seeking assistance), social awareness (empathy and demonstrating respect), relationship management (effective communication and fostering connections), and responsible decision-making (addressing problems, considering personal, social, and ethical responsibilities).

The development of life competencies, including empathy, emotional intelligence, and goal-setting, is given top priority in SEL (CASEL, 2020). In their review of the literature, Kaspar and Massey (2022) took notice of the claims made by

proponents of SEL. They noted that such skills have equivalent significance to academic knowledge. Moreover, McCormick et al. (2015) reported that initiating the development of social-emotional competencies, such as behavioral regulation, attentional skills, and problem-solving abilities, during the early stages of students' education is vital for shaping their academic outcomes. Durlak et al. (2022) adopted CASEL's (2020) definition of SEL. They described it as the process through which individuals acquire and utilize the knowledge, skills, and attitudes necessary to foster healthy self-identities. They indicated that these include the ability to regulate emotions and pursue personal and communal objectives. Furthermore, they stated that SEL involves demonstrating empathy towards others, cultivating and sustaining meaningful relationships, and making conscientious and compassionate choices. Essentially, and as stated in the literature, including social-emotional learning in the classroom improves academic performance while also developing well-rounded people who can successfully navigate the challenges of life with fortitude, empathy, and direction.

In practice, school counselors play a critical role in supporting students' academic and social-emotional learning, which highlights their importance as major stakeholders in establishing inclusive and supportive learning environments that promote the holistic development of all students. For example, they may provide individual counseling sessions to help students cope with personal challenges, facilitate group workshops on conflict resolution skills, collaborate with teachers to implement classroom interventions for students with behavioral difficulties, and coordinate community resources to support students' mental health and well-being. Goodman-Scott et al. (2015) recognized school counselors as licensed educators who play a pivotal role in promoting the academic success of all students through the implementation of

inclusive school counseling programs. They added that school counselors provide invaluable assistance to students in utilizing strategies for academic achievement, developing emotional management skills, enhancing interpersonal abilities, and preparing for postsecondary opportunities. Additionally, Goodman-Scott et al. (2015) regarded school counseling as a comprehensive program that addresses the academic, social, personal, and career development of all students. They indicated that the primary goal of counseling is to aid students in meeting developmental needs and reaching their full potential, equipping them with effective strategies for change while navigating specific or challenging life circumstances, positioning them as not only an educational tool but also a form of learning (Goodman-Scott et al., 2015).

On the other hand, Zuković and Slijepčević (2022) indicated that the effectiveness of counseling largely hinges on selecting an appropriate approach, with an emphasis on the benefits of employing indirect (person-centered), brief (solution-oriented), and transactional-analytical counseling methods. Furthermore, Warren and Gerler (2013) highlighted that professional school counselors have a significant role in creating and managing holistic school counseling programs. These comprehensive programs involve working closely with teachers to enhance student achievement (Warren & Gerler, 2013). Moreover, the latest edition of the American School Counselor Association (ASCA) National Model emphasizes the importance of collaboration and consultation between counselors and teachers to impact student success (ASCA, 2012). Generally, when counselors engage in collaborative consultation, it promotes equal partnerships and often leads to substantial improvements. School counselors who approach consultation with teachers collaboratively tend to succeed in enhancing educational prospects and promoting

student development (Warren & Gerler, 2013). Another assertion of school counselors' role, as pointed out by Johnson et al. (2023), is that their involvement provides long-term improvements in schools, even though it might take some time to see the results. They suggested that while counselors work on making things better in schools, they should also focus on helping kids become stronger inside. This means teaching them how to handle tough situations and do well even when things are hard. So, counselors have the important job of helping students become resilient and better able to deal with challenges (Johnson et al., 2023). Furthermore, Bowers et al. (2017) stressed in their study the importance of school counselors integrating social-emotional learning (SEL) principles into their leadership attitudes and actions. They highlighted that school counselors are well-suited to incorporate SEL values and practices within educational settings. Equipped with training that emphasizes responsiveness to the multifaceted needs of both students and adults, school counselors fulfill diverse roles that bring them into close contact with various stakeholders within and beyond school environments.

Drawing upon the insights of Van Velsor (2009), school counselors have historically played a pivotal role in enhancing students' social and emotional learning to improve academic achievement. However, their efforts often narrow down to a select group of students, and preventive social and emotional learning activities tend to take a backseat compared to primary educational services. This imbalance partly stems from stakeholders' limited grasp of the crucial connection between social-emotional competence and academic success. Nevertheless, counselors can bridge this gap by promoting preventive SEL programming, collaborating closely with stakeholders, and leading the development of SEL initiatives for all students. Making sure that social-emotional learning (SEL) becomes a regular part of education takes a lot of effort over

time. However, starting with small test projects can make this big task easier to handle. Successful schools typically initiate small-scale trials, meticulously evaluating them and committing to ongoing enhancement. Initially, counselors should establish achievable objectives, such as securing stakeholder support for SEL processes, coordinating existing prevention initiatives, and acknowledging incremental progress (Van Velsor, 2009).

School counselors play a pivotal role in nurturing students' holistic development. Now, the focus is on how social-emotional learning principles are integrated into the counseling framework to support students' emotional well-being, interpersonal skills, and academic success. Various researchers, including Johnson et al. (2023), have emphasized the role of school counselors as being responsible for nurturing student resilience and enhancing their internal capabilities. More and more research has looked into how Advocating Student-within-Environment (ASE) approaches to SEL can help students. These interventions aim to strengthen students' inner abilities so they can handle challenges better and do better in school. Furthermore, the interventions often focus on reflective practices such as fostering connectedness, developing self-regulation skills, and promoting social engagement, all of which empower individual agency (the student) to benefit the collective agency (the school system). To achieve these goals, counselors need to prioritize five key practices: curiosity, connectedness, compassion, co-regulation, and ultimately, contribution (Johnson et al., 2023).

Furthermore, Ceballo et al. (2021) emphasized the importance of school counselors validating students' initial responses to challenges, fostering an environment where all reactions are acknowledged without judgment. This approach promotes cognitive, emotional, social, and academic exploration, which is valuable both within

and outside the school setting. Their study highlights the responsibility of school counselors to implement proactive interventions aligned with the American School Counseling Association (ASCA) guidelines for student success. Integrating SEL into counseling curricula, as demonstrated, facilitates its seamless incorporation into school systems. Notably, the findings regarding students' self-reported feelings of connection align with core ASE theory principles, highlighting the pivotal role of counselors in fostering reciprocal growth between students and the adults guiding their development.

On the other hand, Lemberger-Truelove et al. (2021) highlighted that in line with previous intervention studies informed by ASE, their study demonstrates the capacity of school counselors to engage in practices that yield positive social, emotional, and academic outcomes for students. Interventions aimed at enhancing attentional, relational, and expressive skills not only correlate with improved performance on standardized tests, as evidenced in their study, but also have the potential to catalyze subsequent progress. Their findings underscore the multifaceted role of school counselors, who are tasked with supporting the holistic development of students as both educators and counselors. They emphasized that theoretical frameworks such as ASE offer a cohesive approach to school counseling practice, integrating the diverse responsibilities of counselors and contributing to the achievement of desirable student outcomes. They added that the content passed on to students through these interventions not only promotes positive learning behaviors but also extends to various facets of social and emotional development. Moreover, Lemberger et al. (2015) underscored in their research the significance of supporting the professional identity roles of school counselors, with implications for enhancing school counseling practice. The findings from their study related to the Student Success Skills

(SSS) offer valuable insights in this regard. For instance, executive functioning skills, including organization and task completion, play a crucial role, particularly for middle school students transitioning between multiple classes and teachers. Drawing from their analysis of prior research, they emphasized the importance of emotional control and feelings of connectedness in fostering supportive peer and adult relationships. School counseling practices that prioritize these aspects provide counselors with a unique opportunity to contribute meaningfully to the school community. Unlike classroom teachers who primarily focus on academic content delivery, school counselors are positioned as experts in imparting essential learning and social skills integral to the standard school curriculum (Lemberger et al., 2015).

All of these studies highlight the vital role that school counselors play in fostering social-emotional learning and all-around student development. They also highlight how crucial it is to include SEL in counseling practice in order to serve students and the school community.

Types of SEL Programs

Building upon the preceding discussion on the importance of social-emotional learning (SEL) in school counseling, this section explores various SEL programs. The section provides a comprehensive overview of various SEL programs, each offering unique approaches to enhancing students' social-emotional competencies. From universal interventions targeting all students to more targeted programs tailored to specific needs, these interventions highlight the multifaceted nature of SEL implementation within educational settings. By exploring the objectives, methodologies, and effectiveness of these programs, this section contributes to a deeper understanding of the role of SEL in promoting students' well-being and academic

success. These programs are important for nurturing students' social and emotional competencies. By examining different types of SEL interventions, this section aims to provide insights into the breadth and depth of strategies employed to promote SEL skills across different educational contexts. Taking into consideration the definition provided by Durlak et al. (2022) of SEL programs as being carefully structured curricula consisting of sequentially arranged units and educational activities. These programs aim to establish nurturing environments for both children and adults to encourage the gaining of knowledge, attitudes, and skills that are directly linked to social-emotional competencies (SECs), which are addressed deliberately and explicitly within SEL programs. Various organizational formats exist for SEL programs, such as standalone classroom instruction, integration of SEL with academic curricula, and comprehensive approaches implemented across entire schools.

To begin, McCormick et al. (2015) discuss universal SEL programs, which aim to enhance social-emotional skills among all students in a classroom. These programs often include schoolwide and family components, targeting multiple developmental contexts. Effective implementation typically involves providing teachers with professional development (PD) and training, with the expectation that they will incorporate these strategies into their classrooms. An example of a universal SEL program is the Responsive Classroom (RC) approach, which highlights the importance of the intervention model's precision in promoting children's academic outcomes. However, research on specific training, coaching, or PD necessary for enhancing precision and impacts remains limited. Additionally, data on the prevalence of SEL programs nationwide are scarce (McCormick et al., 2015). Stearn (2016) also studied the Responsive Classroom (RC) intervention model. RC is a widely used social-

emotional learning program managed by the Northeast Foundation for Children, established in 1982 (Stearn, 2016). It provides training to teachers, administrators, and parents in effective classroom behavior management. RC annually trains over 10,000 educators across Canada, the UK, India, and various US states. The program employs six teaching strategies, including morning meetings and guided discovery, and adheres to seven principles, emphasizing the importance of social and academic curricula, the interrelation of process and content in learning, and the collaborative efforts of educators and families (www.responsiveclassroom.org). In his critique of the program, Stearn (2016) argued that Responsive Classroom (RC) is not genuinely a social-emotional learning tool but rather a profit-oriented package designed to downplay emotions and oversimplify the complexities of children's and teachers' social realities. Therefore, it is important to know that not all programs might be useful for implementing SEL interventions, and the selection of a program shall be based on a thorough understanding of the program's effectiveness and applicability. As indicated by Stearns et al. (2016), the evaluation of SEL programs such as Responsive Classroom (RC) should prioritize qualitative and phenomenological methodologies. This approach will facilitate a deeper exploration of the experiences of students, teachers, and families involved in RC lessons, thereby contributing to a more comprehensive understanding of its impact (Stearn, 2016).

On the other hand, a proactive school-based initiative tailored for low-income elementary students at risk of academic and behavioral challenges is INSIGHTS, as outlined by McCormick et al. (2015). The INSIGHTS intervention encompasses programs for teachers, parents, and students, grounded in a comprehensive understanding of temperament. It aims to optimize the fit between a child's

temperament and their environment. Four temperament profiles, Cautious, Grumpy, Friendly, and Hard Worker, are utilized as models within the curriculum. The parent and teacher programs consist of three parts: recognizing and reframing child behaviors based on temperament, implementing temperament-based management strategies to improve behavior, and fostering social competence, particularly in challenging situations. Recognition and acceptance of a child's temperament are emphasized, with an emphasis on modifying adult responses to positively influence child behavior while maintaining appropriate boundaries (McCormick et al., 2015).

Another program studied by Ahmed et al. (2020) is RULER, which is a social and emotional learning intervention designed for students from kindergarten through intermediate/junior secondary levels. This program aims to enhance social and emotional abilities by teaching concepts related to emotions and introducing anchor tools to utilize emotions effectively in the classroom. The experimental approach adopts a "top-down" strategy, involving professional development training for school staff to improve their skills and knowledge in creating positive learning environments. Additionally, the program integrates student skill-building activities to help them manage and leverage emotions within the context of the standard curriculum. The RULER approach to social and emotional learning is based on the achievement model of emotional literacy, which suggests that emotional literacy is developed through various factors such as acquiring emotion-related knowledge and competencies, creating secure and supportive climates for experiencing emotions, providing opportunities for practicing emotional intelligence, and exposure to adults who model emotional intelligence (Ahmed et al., 2020).

To add, Doyle et al. (2023) examined the 4Rs Literacy curriculum, which focuses on Reading, Writing, Respect, and Resolution, in conjunction with MyTeachingPartner (MTP) as an SEL program. The 4Rs and MTP interventions were developed by merging two established programs. The 4Rs component integrates social-emotional development into language arts teaching in schools, with previous research demonstrating positive effects on students' social-emotional skills and academic performance. However, the original 4Rs coaching lacked structure and exhibited varied implementation fidelity across teachers. In contrast, MTP provides structured, one-on-one coaching aimed at improving classroom interactions and curriculum implementation through video-based support. The integration of these programs aims to enhance the implementation of the 4Rs by enriching classroom interactions. In their study, Doyle et al. (2023) aimed to isolate the effects of MTP coaching and provide insights into the use of teacher coaching models to support social-emotional learning implementation.

Another type of SEL is the Social-Emotional Learning Foundations (SELF) Intervention. As described by Daunic et al. (2023), SELF is a curriculum designed for children in Kindergarten through Grade 1 who are at early risk for behavior problems. This intervention aims to address both externalizing and internalizing behaviors, potentially preventing the need for specialized services for emotional and behavioral disorders (EBD). Through a carefully crafted set of materials and teaching methods, SELF lessons encourage the use of social-emotional language, self-talk, and critical thinking among students. These aspects are facilitated through teacher modeling and interactions, including both teacher-student and student-student exchanges, which are optimized within small-group instructional settings. Recognizing the significance of

social-emotional development in school adjustment, the SELF curriculum lays a foundation for positive school-related outcomes by fostering social-emotional language skills that support emotional and behavioral self-regulation (Daunic et al., 2023).

Additionally, Goodman-Scott et al. (2015) stress the crucial role of School-Wide Positive Behavioral Interventions and Supports (PBIS), a tiered support system in which school counselors play a pivotal role in implementation. PBIS operates across a three-tiered continuum, employing preventative, culturally responsive, evidence-based, and data-driven interventions rooted in applied behavior analysis principles. Their study illustrates the alignment between comprehensive school counseling programs and PBIS (Goodman-Scott et al., 2015). The primary goal of PBIS, as outlined by Goodman-Scott et al. (2015), is to cultivate a positive school climate, promote measurable and appropriate behavior among all stakeholders, reinforce desired behaviors, and view the school as an integrated system. School counselors, equipped with the necessary training and responsibilities, are well-suited to design school-wide interventions addressing student behaviors (Goodman-Scott et al., 2015). Their expertise makes them ideal collaborators for the PBIS school leadership team, facilitating the implementation of tailored interventions for individual students. The integration of school counseling and PBIS naturally aligns, yielding positive outcomes (Goodman-Scott et al., 2015). Also, research indicates that schools employing PBIS witness decreased levels of aggression and disruption among students, along with increased attendance, prosocial behavior, and emotional regulation. Furthermore, students are 33% less likely to receive office discipline referrals (ODRs), indicating the positive impact of PBIS implementation on school climate, evidenced by reduced incidences of teacher-perceived bullying and peer rejection. By leveraging various PBIS interventions and resources within their

comprehensive programs, school counselors can further enhance the efficacy of their initiatives (Goodman-Scott et al., 2015).

Moreover, Coelho et al. (2021) explored the fourth-grade Positive Attitude SEL program, an initiative aligned with the SEL framework proposed by CASEL (2012). This program is a manualized approach implemented in classrooms, integrated into the school curriculum, and designed as a multi-year project centered on SEL. The fourth-grade Positive Attitude SEL Program consists of 13 weekly 60-minute sessions facilitated by five trained educational psychologists under the supervision of teachers. It comprises four modules: self-awareness, self-management and social awareness, self-esteem, and responsible decision-making, each employing various interactive methods such as board games, roleplay, and storytelling to engage students in learning and practicing SEL skills.

Low and Ryzin (2023) investigated cooperative learning (CL), a software platform designed to facilitate student-centered active learning approaches, focusing on the development of social-emotional skills and fostering positive and supportive peer relations among middle and high school students. CL functions as a form of small-group instruction, structured to encourage collaborative work among students within defined lessons.

On the other hand, Malboeuf-Hurtubise et al. (2017) found that mindfulness-based interventions (MBIs), a type of SEL, effectively reduced the frequency of symptoms and problem behaviors often seen in elementary school children with learning disabilities. These interventions also hold promise for students with severe learning difficulties. Through exposure and detachment from unpleasant emotions, MBIs have the potential to enhance tolerance to anxious and depressive symptoms

associated with Learning Difficulties and low academic performance (Malboeuf-Hurtubise et al., 2017). Additionally, Ceballos et al. (2021) suggest that counselors prioritize the use of SEL and MBIs as intervention techniques to improve students' social, cognitive, and learning outcomes, particularly in Title 1 schools or in marginalized communities. Schools that have significant numbers of students from low-income backgrounds are classified as Title 1 schools (Ceballos et al., 2021).

Utilizing a range of theoretical frameworks, numerous SEL interventions target the enhancement of social and emotional competencies in preschool-aged children. Among the well-known interventions are Tools of the Mind, PATHS, I Can Problem Solve, and The Incredible Years (Murano et al. 2020). In the handbook 'Using Social Emotional Learning to Prevent School Violence: A Reference and Activity Guide' (Paolini, 2023), various SEL School-Wide Programs are outlined. These include Positive Behavior Intervention and Support, No Place For Hate, Olweus Anti Bullying/Violence Prevention Program, Steps to Respect, The 4 R's Program, Caring School Community (CSC), Character First, Lions Quest, Botvin Life Skills Training, and Responsive Services such as Classroom, Small Group, and Individual Counseling. The effectiveness of implementing these programs has been the subject of study by numerous researchers. This thesis work, particularly in the systematic review, will delve deeper into examining and reporting on the effectiveness of select programs as documented by researchers.

Integration of SEL into School Models

Building upon the importance of social-emotional learning (SEL) in school counseling outlined in the preceding section, this section discusses previous research related to the integration of SEL principles within broader school models. While the

role of school counselors in fostering SEL skills among students is crucial, it is equally essential to embed SEL practices into the entire educational system. The section delves into the integration of SEL principles within broader school models, emphasizing the importance of embedding SEL practices throughout the entire educational system. Through the exploration of various studies, the section highlights effective strategies for integrating SEL into classroom activities and aligning it with existing academic standards. Despite challenges such as resource allocation and teacher training, the research demonstrates the significant benefits of SEL interventions, including improved student performance and enhanced school climate.

In their article, Kaspar and Massey (2022) explored effective strategies for integrating SEL into elementary classrooms. They highlight that SEL fosters students' capacity to identify their emotions and empathize with others. Advocates of SEL argue that students equipped with these skills are likely to achieve greater success in their future endeavors. However, they emphasize that it is crucial for teachers to assess their comfort level with teaching social-emotional learning.

Given the changes in the educational systems as well as the students' behavioral changes as a result of their changing world, schools must acknowledge the importance of holistic education rather than solely prioritizing academic achievement (Durlak et al., 2011). They indicated that during the preparation of an SEL action plan, several significant challenges must be considered: allocating time for SEL instruction, securing funding in the budget for necessary resources and personnel, ensuring teachers are adequately trained to deliver the instruction, garnering support from stakeholders, and collecting data to assess its effectiveness. Moreover, Kaspar and Massey (2022) recognize the importance of this holistic education idea and emphasize the need to

integrate and smoothly align the SEL curriculum as part of the typical elementary school schedule. SEL can also be incorporated into academic lessons, such as collaborative activities, brief instructional sessions during literacy instruction, and integration within the Common Core State Standards speaking and listening criteria (Kaspar & Massey, 2022). Durlak et al. (2011) illustrate that the augmentation of core SEL skills and the enhancement of overall student outcomes are attainable through the integration of high-quality SEL instruction within a supportive and positive classroom environment.

Moreover, Sanders et al. (2023) explore the effective use of goal setting in classrooms to enhance SEL skills, particularly among elementary students, including those at risk of emotional and behavioral disorders. They advocate for tailored goal-setting strategies aimed at surpassing students' current performance levels in various domains. Goal setting, a well-established concept in special education, has shown promising outcomes, fostering both academic and behavioral progress over the years. It's considered a socially valid intervention, particularly beneficial for students with or at risk of Emotional Behavioral Disorder (EBD). Embedding SEL-related goal-setting practices into classroom routines offers cost-effective strategies that smoothly integrate with existing SEL curricula, fostering a positive classroom culture and empowering teachers to make data-driven instructional decisions for students' holistic growth (Sanders et al., 2023).

The merging of SEL and Mindfulness-Based Interventions (MBI) is gaining acceptance in educational settings, backed by research findings indicating positive impacts on student psychological well-being, social abilities, relationships, and academic achievements (Lemberger-Truelove et al., 2021). In their study, Lemberger-

Truelove et al (2021), reported that the intervention yielded a beneficial effect on students' academic performance; this was evident from their findings related to achievement tests in English, science, and social studies. Lastly, Kaspar and Massey (2022) stated that although cost is a significant consideration in curriculum selection, administrators may acknowledge that the effects of social-emotional learning can lead to a financial benefit by enhancing student performance, improving school climate, and boosting standardized test scores. Thus, acquiring an SEL curriculum can be viewed as a crucial investment in a school's achievement (Kaspar & Massey, 2022).

In a recent study, Skaar and Townsley (2025) explored the intersection of social and emotional learning (SEL) and standards-based grading (SBG), emphasizing their complementary nature in fostering student development. They identified how integrating SEL within SBG practices allows students to develop essential emotional and social competencies without requiring separate instructional time. The study highlights that while SEL instruction is often implemented through formal curricula, a more effective approach is embedding SEL principles within academic instruction through SBG. However, barriers such as insufficient teacher training in both SEL and grading practices remain a challenge, as current teacher certification requirements often lack explicit training in SBG. Skaar and Townsley (2025) suggest that enhancing teacher education in SEL and SBG could improve program sustainability, instructional fidelity, and student outcomes. Additionally, the study points out that teachers experience high levels of stress, and strengthening their SEL skills may not only support student well-being but also improve educators' professional quality of life. While research on SBG remains limited, preliminary findings suggest that it fosters a more affirming classroom climate and enhances student learning. However, further studies

are needed to examine how SBG implementation influences both student and teacher SEL skills. Skaar and Townsley (2025) propose that integrating SEL with grading practices could serve as a long-term strategy for reducing time constraints on teachers while supporting holistic student development.

Students' Social and Emotional Development

In this section, the identification and assessment of social and emotional deficiencies in students are explored as these are critical aspects of promoting their well-being and academic success. This section focuses primarily on the Teacher Report Form (TRF) as a commonly used tool for this purpose. Furthermore, it is important to note that a comprehensive understanding of students' emotional and behavioral needs requires the utilization of multiple assessment tools.

Emphasizing the critical role of emotional well-being in academic success, various assessment tools and strategies used to evaluate students' emotional and behavioral needs are reviewed. From the Teacher Report Form (TRF) to broader implications for early intervention, this section sheds light on the importance of addressing social and emotional challenges in educational settings. Students typically do not learn alone but rather in collaboration with their teachers, in the company of their peers, and with the encouragement of their families. Emotions can facilitate or impede children's academic engagement, work ethic, commitment, and ultimate school success. Because relationships and emotional processes affect how and what we learn, schools and families must effectively address these aspects of the educational process for the benefit of all students (Durlak et al. 2011). A key challenge, as indicated by Durlak et al. (2011) for 21st-century schools, involves serving culturally diverse students with varied abilities and motivations for learning. Unfortunately, many students lack social-

emotional competencies and become less connected to school as they progress from elementary to middle to high school, and this lack of connection negatively affects their academic performance, behavior, and health (Blum & Libbey, 2004).

One of the tools commonly used for assessing emotional and behavioral issues in youths aged 4 to 18, as described by Soltau et al. (2015), is the Teacher Report Form (TRF). Comprising 120 items, respondents rate each item on a scale of 0 (not true), 1 (somewhat or sometimes true), or 2 (very true or often true). The items cover eight syndrome scales: Withdrawn, Somatic complaints, Anxious/depressed, Social problems, Thought Problems, Attention Problems, Delinquent behavior, and Aggressive behavior. Three syndrome scales, Withdrawn, Somatic Complaints, and Anxious/Depressed, contribute to the broader factor termed Internalizing, while Externalizing is represented by the Delinquent Behavior and Aggressive Behavior scales. A Total problem score encompasses all eight syndrome scales along with additional items not specific to any scale.

Moreover, Whitted (2011) highlighted findings from a national study conducted by the Yale University Child Study Center, indicating a higher frequency of expulsions among preschool-aged children compared to those in Grades 1–12. Results revealed that 10.4% of prekindergarten teachers reported expelling at least one preschool student in the past year, with 19.9% expelling more than one. Expulsion rates varied by region, gender, and ethnic group. Boys were 4.5 times more likely to be expelled than girls, and African American students faced double the expulsion rate compared to students of European descent. These findings raise concerns, as early identification of behavioral problems during preschool years has significant short and long-term consequences, including increased risks of school dropout, offenses, and adult detention. Without early

intervention, such behaviors tend to become chronic, extending into childhood and adolescence. Therefore, effective prevention and intervention strategies are crucial to mitigate these challenges and prevent school failure among children.

This section explores the reasons behind the necessity for Social-Emotional Learning (SEL) among students, building on the exploration of identifying and assessing social and emotional deficiencies. It highlights how various factors, including the quality of learning environments and family dynamics, significantly impact students' emotional well-being and social development. Additionally, prevalent issues such as bullying and peer pressure in school environments necessitate SEL to empower students to address these challenges and develop resilience. The section also emphasizes the significance of the parent-child relationship and adverse family dynamics in shaping children's social-emotional development, stressing the critical role of early intervention. Students generally need SEL due to a variety of factors related to their developmental, environmental, and societal contexts. Some key factors that contribute to the need for SEL for students include: (1) the quality of the learning environment, both at home and in educational settings, which has an impact on a student's emotional well-being, (2) Family which plays a crucial role in a student's social and emotional development hence resulting in the need of SEL especially for students facing challenges or disruptions within their families, (3) Interactions with peers significantly influence students' social development and SEL helps them navigate peer relationships, fostering skills such as communication, empathy, and conflict resolution, (4) Bullying and Peer Pressure are prevalent challenges in school environments, hence SEL equips students with the skills to stand up against bullying, handle peer pressure, and develop resilience in the face of social challenges (Durlak et al. 2011, Gravesteyn et al., 2013). In brief,

addressing these factors through SEL programs implemented by school counselors contributes to the overall health and resilience of students as they go through childhood and adolescence.

Self-reported dysfunction in the parent-child relationship, along with observed atypical maternal behavior and child separation distress, were found to significantly correlate with decreased time spent in joint attention during play (Schechter et al., 2010). Moreover, maternal posttraumatic stress was associated with reduced maternal availability following separation stress. These findings highlight the importance of clinicians attentively assessing and acknowledging parents' expressions of disruptions in their relationship with their young children. Left unaddressed, such dysfunction in the parent-child relationship may hinder learning and social-emotional development in children. In addition, Campbell and Ewing (1990) highlighted that early childhood often presents challenges such as overactivity, inattention, impulsivity, disciplinary problems, and aggression towards peers. While not all challenging children remain problematic, evidence suggests that these externalizing problems may persist in a significant portion of youngsters identified as problematic in preschool age. The researchers emphasized the importance of identifying factors associated with the continuation or improvement of these issues over time. In their study, Campbell and Ewing (1990) indicated that childhood problems were often linked to adverse family factors such as maternal depression, marital discord, harsh parenting practices, and strained parent-child relationships. Ongoing family stresses, including relationship difficulties and maternal depression, were predictive of persistent issues in children. Additionally, children with stable behavior problems tended to reside in families marked by higher rates of marital discord, single parenthood, strained family relationships, and maternal distress. These

findings suggest that family stresses may contribute to or perpetuate initial behavioral challenges, ultimately impacting children's social-emotional development (Campbell and Ewing, 1990).

Influence of Counselors/Teachers' SE Competence on Student Achievement, Engagement, and Behavior

In this section, the critical role of educators' social-emotional competence in shaping student achievement, engagement, and behavior is explored. The studies highlight how teachers with higher SECs are better equipped to engage students effectively, leading to improved academic performance and a more positive classroom atmosphere. Moreover, consistent social and emotional support from teachers is closely associated with higher levels of student satisfaction with the learning environment. The influence of educators' social-emotional competence on student achievement, engagement, and behavior is a critical area of study in education. Research by Sathasivam and Abdul Rahima (2021) demonstrates the profound impact of teachers' level of social-emotional competencies (SECs) on student performance and engagement, particularly through the application of Assessment for Learning strategies. Their findings underscore the importance of social-emotional learning (SEL) competencies in fostering a positive classroom environment conducive to academic success. Additionally, Abry et al. (2017) highlight the role of SEL interventions in enhancing teacher-student interactions and subsequently improving social behavior and academic outcomes. Similarly, Turanli (2009) emphasizes the significance of teachers' social-emotional behaviors in shaping student satisfaction with the classroom environment, emphasizing the crucial link between social-emotional support and student perceptions of their learning environment.

Sathasivam and Abdul Rahima (2021) compared the effect of teachers' level of social-emotional competencies (SECs) on their students' performance and engagement based on their application of Assessment for Learning strategies. They found that the teacher with a high level of SEC engaged her students better in the classroom which in turn contributed to a higher academic performance. Their findings highlight the significant impact of SEL competencies on student success. Therefore, their study indicates that the teacher with higher SEC was able to create a classroom with more social and emotional learning attributes. Improving social-emotional attributes by applying SEL interventions was shown to improve teacher-student interaction, which in turn, improved social behavior and academic performance (Abry et al., 2017). Turanli (2009) concluded that as teachers' overall social-emotional behaviors were practiced more frequently in the classroom, students tended to be more satisfied with the environment. Furthermore, they showed that the satisfaction levels of students were closely linked to the social-emotional support provided by their teachers. In their study, they concluded that when teachers offer social and emotional support consistently to their students, the students report higher satisfaction with the classroom atmosphere, while those who report lower satisfaction tend to experience these supportive behaviors less often.

Impact of SEL on Students and Classroom

Literature on the practical outcomes of Social-Emotional Learning (SEL) interventions that bridge theoretical discussions from previous sections with empirical evidence are reviewed in this section. It explores how SEL programs influence students' academic performance, behavior, and socio-emotional well-being, while also considering the role of educators and counselors in fostering SEL competencies.

Moreover, this section extends the discourse on the role of school counselors and educators, elucidating how their social-emotional competence intersects with student outcomes. Through a synthesis of research findings, it highlights ways in which educators' and counselors' abilities foster SEL competencies that contribute to student achievement, engagement, and overall classroom dynamics. Shriver and Weissberg (2020) reviewed existing literature that critiques SEL. They found that despite varying arguments from proponents and critics, comprehensive SEL programs yield a wide range of short- and long-term academic and behavioral advantages for K-12 students if effectively implemented. These benefits extend to SEL programs both within and outside traditional school settings, indicating the versatility and effectiveness of such interventions in promoting student well-being and success.

According to Murano et al. (2020), SEL interventions have demonstrated positive immediate outcomes, including improvements in students' social and emotional skills. Furthermore, these interventions have yielded beneficial longer-term effects, such as increased academic achievement, decreased problematic behavior, and higher rates of school graduation. On the other hand, Ceballos et al. (2021) showed that the integration of SEL and Mindfulness-Based Interventions (MBI) within Title 1 school programs has proven instrumental in enhancing students' ability to navigate their environments effectively, thereby fostering social growth. Through this integration, students are assisted in developing their resources and learning techniques that enable them to interact with their environment in a proactive manner rather than just responding to events as they arise. Specifically, it enhances their emotional awareness, fosters forgiveness toward others, and mitigates anxiety levels. As reported by Ceballos et al. (2021), the primary impact of this integration manifests in students' cognitive behavior

rather than their academic achievement. Furthermore, Murano et al. (2020) when interventions are introduced during preschool years they also demonstrate enhanced results in cognitive, social, and economic aspects that persist throughout student's lives, as well as significant returns on investment. These results indicate that interventions tailored for preschool-aged students might offer particular advantages because of the distinctive developmental nature of the preschool period (Murano et al., 2020).

In addition, the integration of the 4Rs Literacy curriculum (focusing on Reading, Writing, Respect, and Resolution) with MyTeachingPartner (MTP) proved to be a successful approach in enhancing students' social-emotional and academic development, as reported by Doyle et al. (2023). This intervention, based on teachers' observations, resulted in significant reductions in hostile attributions and the use of aggressive negotiation tactics, while also leading to improved attendance rates and academic skills (Doyle et al. 2023). Furthermore, Morris et al. (2013) found that applying the Foundation of Learning Program improves both the social behavior and academic achievement of students. This program was shown to enhance the capacity of educators to manage student's behavioral issues and cultivate a supportive emotional atmosphere within their classroom settings. Similarly, according to Luo et al. (2020), SEL interventions have been shown to improve the social and emotional skills of preschoolers and reduce challenging behaviors. However, their study suggests that the effectiveness of these interventions may depend on the person delivering them. Their analysis indicates that interventions administered by non-classroom teachers, such as family members or counselors, have a greater impact on reducing challenging behaviors compared to those delivered by classroom teachers.

Ahmed et al. (2020) support previous studies indicating that social and emotional skills are essential for holistic human development, encompassing social interactions, fostering effective teacher-student relationships, and resilience in navigating social and emotional challenges. Furthermore, beyond its impact on students' holistic development, SEL plays a pivotal role in shaping the school climate and atmosphere. Studies have shown that SEL initiatives enhance student engagement within the educational setting and contribute to a reduction in high-risk behaviors (Kaspar & Massey, 2022). The INSIGHTS SEL program, evaluated by McCormick et al. (2015), has also shown enhanced emotional support within first-grade classrooms, subsequently leading to improvements in students' math achievement. This finding builds on previous work demonstrating the impacts of SEL programs on emotionally supportive teaching practices, such as safety, warmth, sensitivity, and regard for teacher practices. Additionally, the study done by Coelho et al. (2021) on the fourth-grade Positive Attitude SEL program showed that the program was effective in promoting positive Social-emotional (SE) competencies during the transition to middle school. However, they highlighted that the program's impact is affected by classroom size, particularly on social awareness. Additionally, their study emphasized the importance of considering school climate attributes; they highlighted the positive influence of student-student and teacher-student relationships on self-esteem development. They also noted that the timing of the intervention, particularly during the middle school transition, emphasizes the need to focus on reestablishing positive connections amidst significant changes in peer and teacher dynamics. Low and Ryzin (2023) found that technology-supported cooperative learning (CL) not only enhanced students' social-emotional skills but also encouraged positive peer relations and prosocial behavior among middle and

high school students. These outcomes are often uncommon in traditional SEL programs. Utilizing technology in instruction offers several advantages, such as ensuring consistent implementation and monitoring, and allowing teachers to maintain their existing curricula. By embracing technology-based solutions, Low and Ryzin (2023) align with the contemporary trend of adapting evidence-based practices for training and intervention through technology. Lastly, in a study comparing students before and after implementing the SELF curriculum for kindergarten-first-grade students, positive effects were found in self-regulation, social-emotional learning, vocabulary, and overall behavior (Daunic et al., 2023).

Alignment between the Reviewed Literature and Research Aims and Questions

In general, the literature review demonstrates how previous studies align with and inform the research questions posed in this study. Through a thorough review of the literature, it is evident that social-emotional learning (SEL) programs implemented within school settings play a pivotal role in nurturing students' social and emotional development. Furthermore, the literature consistently highlights the critical role of educators in implementing these interventions, thereby underscoring the importance of establishing robust support structures. By examining previous studies on the involvement of school counselors and teachers, the validity of the proposed research questions is reinforced. The implementation of SEL interventions by these key educational stakeholders has garnered significant attention in contemporary educational research. Recognizing the importance of fostering students' social and emotional development within the school environment, numerous studies have investigated the impact of SEL programs on various dimensions of student well-being and academic success. This review synthesizes findings from both qualitative systematic reviews and

empirical studies to explore the contributions of SEL interventions facilitated by school counselors and teachers to students' social-emotional development, academic progress, and overall well-being. The significance of a school-centered SEL program for both academic advancement and emotional health has been consistently underscored in the literature. For instance, Doyle et al. (2023) conducted quasi-experimental research evaluating the impact of SEL interventions facilitated by school counselors and teachers. Their findings demonstrate the potential of a research-informed teacher coaching model aimed at promoting effective and high-quality SEL integration within the school environment. This study reinforces the pivotal role of educators in the successful implementation of SEL initiatives. Furthermore, Luo et al. (2020) conducted a meta-analysis synthesizing prior research on SEL interventions. Their analysis emphasized the need for comprehensive, system-level initiatives that encompass policy support, professional development, and technical assistance to ensure the effective implementation of universal SEL programs. These findings collectively affirm the research focus and substantiate the relevance of the study's aims and questions.

CHAPTER 3

CRITICAL REVIEW OF PREVIOUS SEL SYSTEMATIC REVIEWS AND COMPARISON TO THE CURRENT STUDY

Various researchers have conducted systematic reviews on Social-Emotional Learning (SEL). These reviews varied in terms of their methodology, focus, target population, and other factors. This report briefly describes previous articles on SEL systematic reviews and concludes with a section comparing these with the proposed research, “Exploring and Evaluating Social-Emotional Learning Interventions in School Classrooms (K-12) - A Two Study Approach.” The first study of the proposed research involves a systematic review.

List of Previous Systematic Reviews on SEL in the Past Decade

A search for articles on various databases available at the American University of Beirut Libraries and on Google Scholar was conducted with the term/keyword Social-emotional Learning Systematic Reviews for the last 10 years (i.e. since 2014). The search revealed 28 articles as summarized in Table 2.

Table 2: List of SEL Systematic Review Articles since Year 2014

S.N.	Title	Author	Year
1	Does social and emotional learning intervention influence physiological and biological indicators: PreK-12	Claire Blewitt, Heather Morris, Yihan Sun, Michelle Gooley, Hannah Kirk, Heidi Bergmeier, and Helen Skouteris	2024
2	Physical activity interventions to increase children's social and emotional learning: A systematic review and meta-analysis based on the	Jongho Moon, Collin A. Webster, Kelly Lynn Mulvey, Ali Brian, David F. Stodden, Cate A. Egan, Taemin Ha, Christopher B. Merica, and Michael W. Beets	2024

S.N.	Title	Author	Year
	comprehensive school physical activity programme framework		
3	Using Virtual Reality Interventions to Promote Social and Emotional Learning for Children and Adolescents: A Systematic Review and Meta-Analysis	Feng Zhang, Yan Zhang, Gege Li and Heng Luo	2024
4	Effectiveness of universal school-based social-emotional learning programs in promoting social-emotional skills, attitudes towards self and others, positive social behaviors, and improving emotional and conduct problems among Japanese children: a meta-analytic review	Yu Takizawa, Matthew Bambling, Yuki Matsumoto, Yuma Ishimoto, and Sisira Edirippulige	2023
5	The state of evidence for social and emotional learning A contemporary meta-analysis of universal school-based SEL interventions	Christina Cipriano, Michael J. Strambler, Lauren H. Naples, Cheyeon Ha, Megan Kirk, Miranda Wood, Kaveri Sehgal, Almut K. Zieher, Abigail Eveleigh, Michael McCarthy, Melissa Funaro, Annett Ponnock, Jason C. Chow, and Joseph Durlak	2023
6	Bibliotherapy: A Systematic Research Review with Social Emotional Learning Applications	Melinda E. Langeberg	2023
7	Evidence for Social and Emotional Learning in Schools REPORT	Mark Greenberg	2023
8	What We Know, and What We Need to Find Out About Universal, School-Based Social and Emotional Learning Programs for Children and Adolescents: A Review of Meta-Analyses and Directions for Future Research	Joseph A. Durlak, Joseph L. Mahoney, and Alaina E. Boyle	2022

S.N.	Title	Author	Year
9	Classroom-Wide School Interventions for Preschoolers Social-Emotional Learning: A Systematic Review of Evidence-Based Programs	Catrinel A. Ștefan, Ingrid Dănilă, and Delia Cristescu	2022
10	Social and emotional learning in primary schools: A review of the current state of evidence	Michael Wigelsworth, Lily Verity, Carla Mason, Pamela Qualter and Neil Humphrey	2022
11	Students With Disabilities in Social and Emotional Learning Interventions: A Systematic Review	Samantha G. Daley, and Michael F. McCarthy	2021
12	Impacts of social and emotional learning interventions for teachers on teachers' outcomes_A systematic review with meta-analysis	Sofia Oliveira, Magda Sofia Roberto, Nádia Salgado Pereira, Alexandra Marques-Pinto and Ana Margarida Veiga-Simão	2021
13	Social and Emotional Learning in Preschool Settings A Systematic Map of Systematic Reviews	Dariush Djamnezhad, Nadia Koltcheva, Alma Dizdarevic, Amila Mujezinovic, Carla Peixoto, Vera Coelho, Mart Achten, Erika Kolumbán, Francisco Machado, and Björn Hofvander	2021
14	Social and emotional learning in the Ibero-American context_a systematic review	Francisco-Domingo Fernández-Martín, José-María Romero-Rodríguez, José-Antonio Marín-Marín, and Gerardo Gómez-García	2021
15	Social-Emotional Learning Interventions for Students With Special Educational Needs: A Systematic Literature Review	Sepideh Hassani and Susanne Schwab	2021
16	Systemic Social and Emotional Learning: Promoting Educational Success for all preschool to high school students	Joseph L. Mahoney, Roger P. Weissberg, Mark T. Greenberg, Linda Dusenbury, Robert J. Jagers, Karen Niemi, Melissa Schlinger, Justina Schlund, Timothy P. Shriver, Karen VanAusdal, and Nicholas Yoder	2021

S.N.	Title	Author	Year
17	A Meta-Analytic Review of Preschool Social and Emotional Learning Interventions	Dana Murano, Jeremy E. Sawyer, and Anastasiya A. Lipnevich	2020
18	Systematic Review and Meta-Analysis of Classroom-Wide Social–Emotional Interventions for Preschool Children	Li Luo, Brian Reichow, Patricia Snyder, Jennifer Harrington, and Joy Polignano	2020
19	Do Curriculum-Based Social and Emotional Learning Programs in Early Childhood Education and Care Strengthen Teacher Outcomes? A Systematic Literature Review	Claire Blewitt, Amanda O’Connor, Heather Morris, Aya Mousa, Heidi Bergmeier, Andrea Nolan, Kylie Jackson, Helen Barrett, and Helen Skouteris	2020
20	Social-emotional learning for children with learning disabilities: a systematic review	Imogen Hagarty & Gavin Morgan	2020
21	A systematic review of targeted social and emotional learning interventions in early childhood education and care settings	Claire Blewitt, Amanda O’Connor, Heather Morris, Tamara May, Aya Mousa, Heidi Bergmeier, Andrea Nolan, Kylie Jackson, Helen Barrett & Helen Skouteris	2019
22	A systematic review of state-level social–emotional learning standards: Implications for practice and research	Katie Eklund, Kayla D. Kilpatrick, Stephen P. Kilgus, and Aqdas Haider	2018
23	Effective universal school-based social and emotional learning programs for improving academic achievement: A systematic review and meta-analysis of 50 years of research	Roisin P. Corcoran, Alan C.K. Cheungc, Elizabeth Kimd, and Chen Xiee	2018
24	Do universal social and emotional learning programs for secondary school students enhance the competencies they address? A systematic review	Marion C. E. van de Sande, Minne Fekkes, Paul L. Kocken, René F. W. Diekstra, Ria Reis, and Carolien Gravesteijn	2018

S.N.	Title	Author	Year
25	An update on social and emotional learning outcome research	Joseph L. Mahoney, Joseph A. Durlak and Roger P. Weissberg	2018
26	Social and Emotional Learning Associated With Universal Curriculum-Based Interventions in Early Childhood Education and Care Centers: A Systematic Review and Meta-analysis	Claire Blewitt, Matthew Fuller-Tyszkiewicz, Andrea Nolan, Heidi Bergmeier, David Vicary, Terry Huang, Paul McCabe, Tracey McKay, and Helen Skouteris	2018
27	Goal-Setting Interventions for Students with Behavior Problems A Systematic Review	Allison L. Bruhn, Sara C. McDaniel, Josephine Fernando and Leonard Troughton	2016
28	The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions	Joseph A. Durlak, Allison B. Dymnicki, Rebecca D. Taylor, Roger P. Weissberg and Kriston B. Schellinger	2011

Critical Analysis of Previous Systematic Reviews on SEL

A comprehensive review and critical analysis of recent studies focusing on systematic reviews of social-emotional learning (SEL) interventions was conducted with the objective of comparing previous findings to the aims and research questions of the current study. The main findings of these studies are summarized herein.

Blewitt et al. (2024) reviewed fourteen studies with the objective of assessing the changes in physiological and biological indicators when students participate in SEL, as opposed to measuring performance tasks and gathering perspectives from students, teachers, and caregivers through questionnaires. This represents an alternative method to evaluate the impact of SEL. In their systematic review, they found that SEL initiatives correlate with favorable changes in brain function, cortisol levels, and the autonomic nervous system, indicating reduced stress and enhanced understanding of the mechanisms behind SEL effectiveness. Moon et al. (2024) and Zhang et al. (2024)

explored the intersection of SEL with physical activity and virtual reality (VR), respectively in their systematic reviews. While Moon et al. highlighted the potential of the Comprehensive School Physical Activity Program (CSPAP) in fostering SEL competencies, the study lacked longitudinal follow-up, leaving questions about the durability of these effects. Similarly, Zhang et al. (2024) found VR-based interventions are moderately effective in enhancing SEL skills, particularly for children with Autism Spectrum Disorder (ASD). However, the cost and accessibility of VR technology raise concerns about equity, particularly for low-resource schools that may lack the infrastructure for such interventions.

Several systematic reviews employing meta-analyses of the findings of previous studies, in particular the studies by Takizawa et al. (2023) and Cipriano et al. (2023), confirmed SEL's positive impact across various domains, such as school climate, peer relationships, and emotional well-being. However, Takizawa et al. (2023) noted that improvements were modest and often short-lived, suggesting a need for tailored strategies to sustain long-term benefits, especially for older students. Cipriano et al. (2023) underscored the significance of covering all CASEL competencies for effectiveness, yet did not sufficiently address implementation challenges, particularly the variability in educator training and institutional support. The SEL's cost-effectiveness and broad applicability were confirmed in the systematic reviews conducted by Greenberg (2023) and Durlak et al. (2022). However, their emphasis on economic returns risks reducing SEL to a financial calculus rather than recognizing its intrinsic educational value. Moreover, Durlak et al. (2022) pointed to inconsistencies in implementation fidelity, highlighting a broader issue across SEL research, mainly the challenge of translating controlled study conditions into real-world educational

environments. Studies focusing on early childhood education, such as those by Ştefan et al. (2022), Wigelsworth et al. (2022), and Murano et al. (2020), underscored the need for culturally responsive and developmentally appropriate SEL interventions. Ştefan et al. (2022) found significant cross-country variability in preschool SEL programs, calling into question the generalizability of findings from Western-centric research. Similarly, Wigelsworth et al. (2022) criticized the inconsistent quality of evidence in primary school SEL research, advocating for more robust, complex trial designs to isolate effective program components.

Other studies, such as those by Daley and McCarthy (2021) and Oliveira et al. (2021), examined SEL interventions for specific populations, including students with disabilities and teachers. Daley and McCarthy (2021) emphasized the necessity of inclusive, tailored approaches but identified a gap in research on how SEL can be effectively adapted for diverse learning needs. Oliveira et al. (2021) reported positive impacts of SEL on teacher well-being, yet their findings were based on small sample sizes, necessitating larger, more diverse studies to draw definitive conclusions. A persistent challenge in SEL research is the lack of rigorous measurement tools. Studies like Blewitt et al. (2020) and Hagarty and Morgan (2020) highlighted difficulties in assessing emotional skills, particularly among younger children and those with learning disabilities. The broader question of SEL's role within educational policy and curriculum design was addressed by Mahoney et al. (2021) and Eklund et al. (2018). Mahoney et al. argued for systemic SEL integration across schools, districts, and communities but did not fully explore the political and logistical barriers to such a framework. Eklund et al. found widespread adoption of CASEL-aligned competencies

in preschool standards but highlighted inconsistencies in how these standards are implemented across states, suggesting a need for more cohesive policy guidelines.

These studies collectively highlight the multifaceted impact of SEL interventions, emphasizing the importance of early, developmentally appropriate, and well-implemented programs. They also call for more rigorous research to optimize SEL practices and ensure long-term benefits across various educational settings and age groups.

The current study – Objectives and Rationale

The proposed research titled, “Exploring and Evaluating Social-emotional Learning Interventions in School Classrooms (K-12) - A Systematic Review”, is aimed at exploring the effectiveness of integrating social and emotional learning programs within school educational settings globally and in Lebanon. This study entails a systematic review focused on synthesizing existing research on social-emotional learning (SEL) interventions. This review aims to provide a comprehensive understanding of effective SEL practices globally. Additionally, the study aimed to develop recommendations for implementing SEL in the Lebanese educational system based on the findings of the systematic review.

Similarities and differences with previous systematic reviews

Numerous reviews exist on social-emotional learning (SEL) or programs with comparable aims. However, to evaluate their relevance to the current research, specific criteria are considered. These include assessing whether the reviews are outdated, lack adequate focus on the relevant area, consider the age group of the sampled students, or incorporate studies with less rigorous methodologies. Previous systematic reviews focused on social-emotional skills, reducing violence, bullying, and problem behaviors,

however, these reviews varied in scope, programs evaluated, etc. Table 2 lists all reviewed systematic review studies and compares the currently proposed research based on common factors to identify studies that have a similar approach and that are expected to overlap in the outcome to the current studies. A justification for the decision of similarity is also provided in Table 3.

Table 3: Similarity Assessment of SEL Systematic Review Studies to Current Proposed Research

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
1	Does social and emotional learning intervention influence physiological and biological indicators: PreK-12 <i>Blewitt et al. (2024)</i>	1999 - 2023 (14 studies)	USA, Argentina, Chile, Thailand, Portugal, Canada	No	Measure of effectiveness is different as it measures physiological and biological indicators
2	Physical activity interventions to increase children's social and emotional learning: A systematic review and meta-analysis based on the comprehensive school physical activity programme framework <i>Moon et al. (2024)</i>	2012 - 2020 (32 studies Qualitative & 26 Quantitative)	Mexico, USA, Austria, Belgium, Demark, England, Greece, Italy, Serbia, Spain, Hong Kong, Singapore, Australia, Brazil	No	Study focuses on Physical activity and its relation to social-emotional competencies
3	Using Virtual Reality Interventions to Promote Social and Emotional Learning for Children and Adolescents: A Systematic Review and Meta-Analysis <i>Zhang et al. (2024)</i>	2013 - 2023 (32 studies)	USA, China, Hong Kong, Taiwan	No	The study focuses on VR as an alternative tool to teach SEL

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
4	Effectiveness of universal school-based social-emotional learning programs in promoting social-emotional skills, attitudes towards self and others, positive social behaviors, and improving emotional and conduct problems among Japanese children: a meta-analytic review <i>Takizawa et al. (2023)</i>	2000 - 2022 (84 studies)	Japan	No	The review addresses SEL for Japanese students, and findings cannot be generalized for global application
5	The state of evidence for social and emotional learning A contemporary meta-analysis of universal school-based SEL interventions <i>Cipriano et al. (2023)</i>	2008 - 2020 (424 studies)	53 countries	Yes	The study addresses similar issues as the current proposed research, however it addresses specific SEL programs and interventions
6	Bibliotherapy: A Systematic Research Review with Social Emotional Learning Applications <i>Langeberg (2023)</i>	1936 - 2018 (10 studies)	Not available	No	The review relates bibliotherapy to SEL applications
7	Evidence for Social and Emotional Learning in Schools REPORT <i>Greenberg (2023)</i>	2011 - 2022 (12 studies)	USA	Yes	The document is a report and not a systematic review, but it includes a review of many meta-analysis on SEL

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
8	What We Know, and What We Need to Find Out About Universal, School-Based Social and Emotional Learning Programs for Children and Adolescents: A Review of Meta-Analyses and Directions for Future Research <i>Durlak et al. (2023)</i>	2011 - 2019 (12 studies)	USA, Europe	Yes	Study addresses similar issues as the current proposed research, it addresses Universal, School-Based Social and Emotional Learning Programs
9	Classroom-Wide School Interventions for Preschoolers Social-Emotional Learning: A Systematic Review of Evidence-Based Programs <i>Ştefan et al. (2022)</i>	1980 - 2010 (81 studies)	USA, 1 in Turkey	Yes	Study addresses similar issues as the current proposed research, however it focuses on preschool students
10	Social and emotional learning in primary schools: A review of the current state of evidence <i>Wigelsworth et al. (2022)</i>	2000 - 2018 (33 studies)	USA, Canada, Germany, United Kingdom, Netherlands, Australia, New Zealand, Norway, Belgium	Yes	Study addresses similar issues as the current proposed research, however it highlights deficiencies in available data
11	Students With Disabilities in Social and Emotional Learning Interventions: A Systematic Review <i>Daley and McCarthy (2021)</i>	1997 - 2018 (19 studies)	USA	No	Review focuses on students with learning disabilities

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
12	Impacts of social and emotional learning interventions for teachers on teachers' outcomes_A systematic review with meta-analysis <i>Oliveira et al. (2021)</i>	1005 - 2020 (43 studies)	Asia, Europe, North America	No	Review focuses on SEL for teachers
13	Social and Emotional Learning in Preschool Settings A Systematic Map of Systematic Reviews <i>Djamnezhad et al. (2021)</i>	1982 - 2017 (2 studies) /	USA	No	The review maps existing systematic reviews that address SEL. it highlights means to improve research
14	Social and emotional learning in the Ibero-American context: A systematic review <i>Fernández-Martín et al. (2021)</i>	2010 - 2020 (22 studies)	Portugal, Spain, Brazil, Chile	No	Review focuses on the Ibero-American Context
15	Social-Emotional Learning Interventions for Students with Special Educational Needs: A Systematic Literature Review <i>Hassani and Schwab (2021)</i>	1995 - 2019 (11 studies)	USA, United Kingdom, Portugal	No	Review focuses on students with Special Educational Needs
16	Systemic Social and Emotional Learning: Promoting Educational Success for all preschool to high school students <i>Mahoney et al. (2021)</i>	1977 - 2020 (Number of studies not reported) /	Countries not reported	No	Study addresses similar issues as the current proposed research, however it aims at establishing equitable learning environments wherein all students can receive social-emotional skills

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
17	A Meta-Analytic Review of Preschool Social and Emotional Learning Interventions <i>Murano et al. (2020)</i>	2001 - 2017 (33 studies on universal interventions 15 studies on targeted interventions)	USA	Yes	Study addresses similar issues as the current proposed research, however it focuses on preschool students
18	Systematic Review and Meta-Analysis of Classroom-Wide Social–Emotional Interventions for Preschool Children <i>Luo et al. (2020)</i>	1998 - 2017 (33 studies)	USA, Romania, Spain, Turkey, United Kingdom, Norway, Jamaica, Australia	Yes	Study addresses similar issues as the current proposed research, however it focuses on preschool students
19	Do Curriculum-Based Social and Emotional Learning Programs in Early Childhood Education and Care Strengthen Teacher Outcomes? A Systematic Literature Review <i>Blewitt et al. (2020)</i>	1999 - 2019 (15 studies)	USA, Turkey	No	Review focuses on impact of SEL on teachers' outcome
20	Social-emotional learning for children with learning disabilities: a systematic review <i>Hagarty and Morgan (2020)</i>	2011 - 2017 (12 studies)	Not available	No	Review focuses on students with learning disabilities

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
21	A systematic review of targeted social and emotional learning interventions in early childhood education and care settings <i>Blewitt et al. (2019)</i>	1999 - 2019 (19 studies)	USA, Astralia, China, Canada, Belgium	No	Review focuses on specific interventions to be implemented in early childhood education and care settings
22	A systematic review of state-level social-emotional learning standards: Implications for practice and research <i>Eklund et al. (2018)</i>	Not applicable (Number of studies not reported) /	USA	No	The study evaluates standards implemented in various USA states
23	Effective universal school-based social and emotional learning programs for improving academic achievement: A systematic review and meta-analysis of 50 years of research <i>Corcoran et al. (2018)</i>	1998 - 2015 (40 studies)	USA	Yes	Study addresses similar issues as the current proposed research
24	Do universal social and emotional learning programs for secondary school students enhance the competencies they address? A systematic review <i>van de Sande et al. (2018)</i>	2004 - 2017 (40 studies)	USA, Spain, Netherlands, Taiwan, Australia, Canada	No	Review focuses on different social-emotional competencies

S.N.	Study Title / Author	Years Covered / Number of Studies	Countries Represented	Similar Yes/No	Justification
25	An update on social and emotional learning outcome research <i>Mahoney et al. (2018)</i>	2011 - 2017 (4 studies)	USA	No	Article reviews current status on findings rather than a systematic review
26	Social and Emotional Learning Associated With Universal Curriculum-Based Interventions in Early Childhood Education and Care Centers: A Systematic Review and Meta-analysis <i>Blewitt et al. (2018)</i>	1995 - 2017 (63 studies)	Africa, Australia, Middle East, North America, South America	No	Review focuses on specific interventions to be implemented in early childhood education and care settings
27	Goal-Setting Interventions for Students with Behavior Problems A Systematic Review <i>Bruhn et al. (2016)</i>	1998 - 2015 (40 studies)	USA	No	Review focuses on specific intervention, namely goal setting
28	The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions <i>Durlak et al. (2011)</i>	1955 - 2007 (213 studies)	USA, Other Countries	Yes	Review focuses on similar issues; however, findings are superseded by recent systematic review studies

As illustrated in Table 3, nine (9) studies are identified to be somehow similar to the current proposed research. The factors that are considered in assessing the similarities and differences are summarized in Table 4.

Table 4: Evaluation criteria and characteristics of current/proposed study

Factor/criteria	Current study characteristics
1. Scope of review and objectives	Review all studies that address the effectiveness of SEL interventions to improve behavior in the classroom and academic achievement for K-12 students
2. Target population / Age group	K-12 students, not specific to students with learning disabilities, psychological disorders, special needs or gifted students
3. Types of Systematic Review to be considered in the review	This study will systematically review any of the two types, namely either Narrative systematic review or meta-analysis
4. Social-emotional impacts	Impacts shall measure improvement in behavior in the classroom and academic achievement
5. Geographic extent	Addresses SEL interventions' effectiveness in any country, worldwide
6. SEL programs	All programs that apply to K-12 students that target skills necessary to improve behavior in the classroom and academic achievement.
7. Social-emotional skills	Skills that improve behavior in the classroom and academic achievement
8. Study publication Year	Between 1990 and 2024

Table 5 summarizes similarities and differences between these studies and the proposed current study.

Table 5: Similarities and Differences between SEL Systematic Review Studies and the current proposed research

S. N.	Title / Author (Year) /Years covered by study	Similarities	Differences
5	The state of evidence for social and emotional learning A contemporary meta-analysis of universal school-based SEL interventions <i>Cipriano et al. (2023) / 2008 - 2020</i>	Same target population (K-12) Addresses the same type of systematic review	Focus only on experimental and quasi-experimental studies, whereas the current study focuses on all types of study design. Focus on interpersonal and intrapersonal skills, self-management and communication
7	Evidence for Social and Emotional Learning in Schools REPORT <i>Greenberg (2023) / 2011 - 2022</i>	Overlap in target population (K-12) Addresses meta-analysis	The scope of review and objectives are different from the current study, this report is intended to evaluate empirical data from various meta-analysis research on the findings on PreK–12 school-based SEL and to provide future steps for this area of research
8	What We Know, and What We Need to Find Out About Universal, School-Based Social and Emotional Learning Programs for Children and Adolescents: A Review of Meta-Analyses and Directions for Future Research, <i>Durlak et al. (2023)/ 2011 - 2019</i>	Overlap in target population (K-12) Addresses meta-analysis Same scope and objectives Covered many countries	Findings highlight variability in findings and need for further research, whereas the current study aims at providing recommendations for implementing SEL interventions in all formats (classroom instruction, integration with curricula and schoolwide).

S. N.	Title / Author (Year) /Years covered by study	Similarities	Differences
9	Classroom-Wide School Interventions for Preschoolers' Social-Emotional Learning: A Systematic Review of Evidence-Based Programs <i>Ştefan et al. (2022) / 1980 - 2010</i>	Scope and objectives are similar	Limited to preschool students Addresses classroom-based interventions based on Journal of Clinical Child and Adolescent Psychology (JCAPP)
10	Social and emotional learning in primary schools: A review of the current state of evidence <i>Wigelsworth et al. (2022) / 2000 - 2018</i>	Reviews current state of evidence on the effectiveness of SEL interventions	Limited to primary school students Provides a general assessment of research on SEL without any specific recommendations on the effectiveness of SEL interventions and programs
17	A Meta-Analytic Review of Preschool Social and Emotional Learning Interventions <i>Murano et al. (2020) / 2001 - 2017</i>	Similar types of studies (meta-analysis) to be reviewed Evaluates the effects of universal and targeted social and emotional learning (SEL) interventions on the cultivation of social and emotional skills and the mitigation of problematic behaviors	Limited to preschool students
18	Systematic Review and Meta-Analysis of Classroom-Wide Social–Emotional Interventions for Preschool Children; <i>Luo et al. (2020) / 1998 - 2017</i>	Similar types of studies (systematic review and meta-analysis) to be reviewed Scope of assessment is similar	Limited to preschool students

S. N.	Title / Author (Year) /Years covered by study	Similarities	Differences
23	Effective universal school-based social and emotional learning programs for improving academic achievement: A systematic review and meta-analysis of 50 years of research; <i>Corcoran et al. (2018) / 1998 - 2015</i>	Overlap in target population (K-12)	The scope of assessment is different, as the study focuses on improvement in reading, mathematics and science only
28	The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions; <i>Durlak et al. (2011) / 1955 - 2007</i>	Same target population (K-12) Scope and objectives are similar, mainly overlap	Addresses multiple outcomes, including social and emotional skills, attitudes, positive social behavior, conduct problems, emotional distress, and academic performance, whereas the current study will focus on behavior in the classroom and academic achievement Conducted in 2011, hence studies done between 2011 and 2024 are not covered

Key Findings and Implications

This chapter provides a comprehensive analysis of existing systematic reviews on social-emotional learning (SEL) and SEL programs, highlighting nine systematic review studies with similar objectives (Cipriano et al., 2023; Corcoran et al., 2018; Durlak et al. 2023; Durlak et al., 2011; Luo et al., 2020; Murano et al., 2020; Ştefan et al., 2022; Wigelsworth et al., 2022). The previous studies were evaluated based on specific criteria to ensure that the proposed systematic review does not duplicate previously available data.

The focus of these systematic reviews differs from that of this proposed research. Cipriano et al. (2023) focused on SEL interventions that enhance intrapersonal and interpersonal skills, such as self-management and communication. In contrast, the systematic review by Durlak et al. (2023) aimed to evaluate the range and consistency of outcomes across meta-analyses and the impact of various moderators on program results. Their review indicated that SEL programs consistently improved SEL skills, attitudes, prosocial behaviors, and academic performance and reduced conduct problems and emotional distress. However, they found little agreement on the conditions and mechanisms that make these programs most effective.

Three studies (Ştefan et al., 2022; Murano et al., 2020; and Luo et al., 2020) systematically reviewed the impact of SEL interventions on specific target populations, namely preschool students. Wigelsworth et al. (2022) also addressed the impact of SEL interventions, but their target population was primary school students (ages 6-11). Corcoran et al. (2018) had objectives similar to this proposed research, namely the impact of SEL interventions on academic performance, but they focused specifically on improvements in English, mathematics, and science. Durlak et al. (2011) conducted a

systematic review with many similarities to the objectives of this research, but since it was conducted in 2011, this study serves as an update, considering studies conducted between 2011 and 2024.

As summarized above and illustrated in Table 4, the proposed research, which involves a systematic review of the effectiveness of SEL interventions for K-12 students, presents several unique contributions to the existing body of systematic reviews. This research will review all studies addressing the effectiveness of SEL interventions in improving classroom behavior and academic achievement for K-12 students. Unlike some reviews, it will not focus on specific types of students, such as those with learning disabilities, psychological disorders, special needs, or gifted students. This study will include all studies conducted between 1990 and 2024 that address the effectiveness of SEL interventions and programs applicable to K-12 students worldwide. Additionally, the study will emphasize research that measures the impact of SEL interventions on improving classroom behavior and academic achievement. Lastly, this research would seek to enhance the understanding of social and emotional learning (SEL) interventions by systematically reviewing existing studies. One of the key strengths of the study would be its focus on identifying specific types of SEL interventions that positively influence classroom behavior and academic achievement for K-12 students. By pinpointing which interventions yield the most effective outcomes, the study would aim to offer targeted recommendations for educators and policymakers, ensuring that these interventions are both relevant and impactful in diverse educational contexts. Another significant merit of the study would be its international scope. By encompassing studies conducted in various countries, the systematic review would explore the effectiveness of SEL programs across different

cultural and educational systems. Such a global perspective would be critical in identifying universal elements of successful interventions, as well as understanding how cultural nuances and local contexts influence their success. Moreover, the study would assess the impact of SEL interventions on classroom behavior and academic achievements, considering the specific needs and grade levels of students. This would allow for a nuanced understanding of how SEL programs could be tailored to various educational environments. Additionally, the study would provide practical recommendations for implementing SEL interventions in diverse formats. These would include integrating SEL into classroom instruction, embedding it within existing curricula, and establishing schoolwide programs. While similar systematic reviews have contributed to the field, they have primarily focused on specific target populations, such as preschool or primary school students. This study, however, would offer broader applicability, addressing the full range of K-12 students and the unique challenges each grade level faces. The recommendations would serve as a guide for educators and administrators seeking to adopt and integrate effective SEL practices in their schools, thus supporting the development of both students' academic and social-emotional skills.

In conclusion, this chapter outlined the pivotal role of the proposed systematic review in advancing the understanding of SEL interventions, particularly in relation to improving classroom behavior and academic performance. By focusing on the types of interventions, their effectiveness across different countries, and offering actionable recommendations, the study would provide valuable insights that could inform future SEL research and practices.

CHAPTER 4

METHODOLOGY

Overview

As stated in Chapter 1, this study seeks to provide a comprehensive assessment of social and emotional learning (SEL) practices worldwide, with a focus on their impact on classroom behavior and academic performance in K -12 students. To achieve this, a systematic review was conducted to synthesize findings from existing empirical research. This chapter outlines the methodological approach adopted for the study, including the selection of relevant literature, data extraction, synthesis of findings, and the assessment of methodological quality.

The research questions guiding this study were previously stated in Chapter 1. Here, they are revisited to provide context for the methodological choices. The review examines the various types, themes, and content of SEL programs explored in empirical research, shedding light on their implementation and focus areas. It also investigates the tools and procedures used to evaluate SEL programs, assessing how their effectiveness has been measured across different studies. Additionally, the study synthesizes findings on the impact of SEL programs on students' academic performance and classroom behavior, providing insights into their overall effectiveness. Finally, to ensure a rigorous evaluation of the available literature, the quality of empirical evidence is appraised using established frameworks, specifically the guidelines set by the Council for Exceptional Children (CEC) and the Mixed Methods Appraisal Tool (MMAT).

By systematically addressing these components, this study ensures a transparent and structured approach to analyzing existing research, offering a comprehensive understanding of SEL program effectiveness based on empirical evidence.

Systematic Review Approach

This study employs a traditional systematic review to address the research questions and provide a comprehensive synthesis of empirical findings on social and emotional learning (SEL) programs. Given the range of methodologies available for evidence synthesis, a systematic review was selected as the most appropriate approach due to its structured and rigorous process for assessing primary research studies. Unlike scoping reviews, which broadly map the literature, or umbrella reviews, which compile findings from existing systematic reviews, a traditional systematic review offers a detailed evaluation of empirical studies, ensuring methodological rigor through predefined inclusion criteria, systematic search strategies, and critical appraisal of study quality.

While meta-analysis quantitatively synthesizes statistical results from multiple studies, this review integrates both qualitative and quantitative insights to develop a comprehensive understanding of SEL program effectiveness. This method enables a detailed examination of key themes, intervention strategies, evaluation tools, and outcomes associated with SEL programs while maintaining transparency and replicability. The appraisal of study quality was conducted using established frameworks, including the Council for Exceptional Children (CEC) guidelines and the Mixed Methods Appraisal Tool (MMAT), which are elaborated in subsequent sections.

The systematic review process involved a structured and methodical assessment of the existing literature to evaluate the effectiveness of SEL programs in enhancing student behavior and academic performance. It employed explicit and reproducible procedures to identify, select, critically appraise, and synthesize relevant studies. The subsequent sections provide a detailed account of the article selection process and the synthesis of findings from the reviewed studies. Figure 2 illustrates the systematic review process.

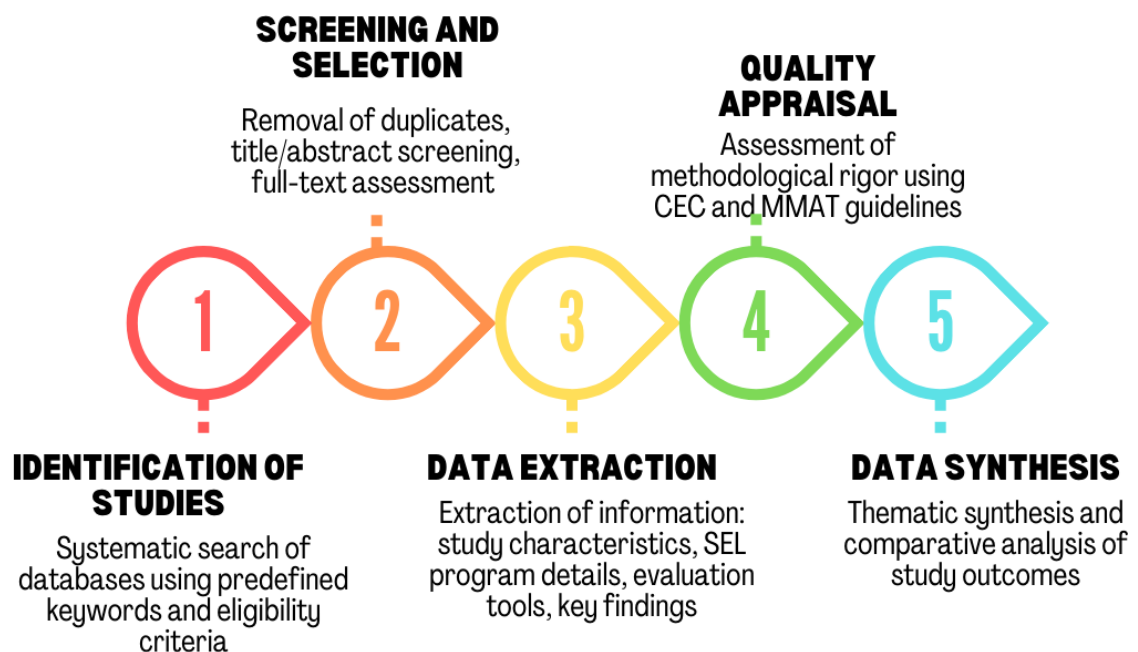


Figure 2: Systematic Review Process

Selection of Relevant Studies

The selection of the articles was aligned with the guidelines provided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist. The PRISMA approach involved following specific steps in the search and

selection of the articles that will be systematically reviewed. The steps adopted in this approach are illustrated in Figure 3.

This approach offered an evidence-based framework for systematically searching, identifying, selecting, screening, and synthesizing abstracts and full-text peer-reviewed articles in systematic reviews (Guzmán et al., 2021; Moher et al., 2009). This methodology was designed for application in reviews incorporating both quantitative and qualitative data (Page et al., 2021). Additionally, PRISMA is an international initiative led by experts to improve the documentation and transparency of review methods in published papers, addressing a common issue (Page et al., 2021).

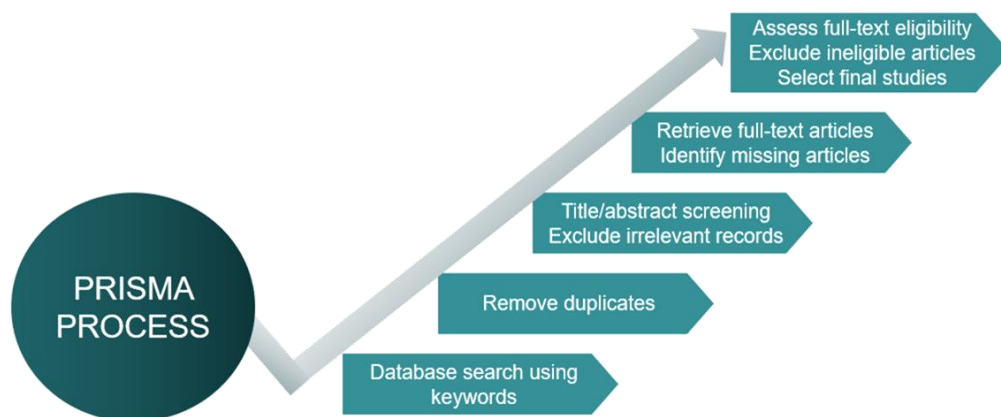


Figure 3: PRISMA Process

The first step involved selecting studies from various databases. The databases reviewed in this study included APA PsycINFO, Education Research Complete, ERIC, International Encyclopedia of Education, JSTOR, Scopus, and Web of Science. In each of these databases, a thorough search for relevant articles was conducted using specific keywords. Following the approach outlined by Castillo et al. (2022), the search focused on key parameters relevant to the study scope and research questions, as summarized in

Table 6. Categories and parameters were defined to guide the selection of keywords. This was followed by the preparation of a comprehensive list of keywords and sub-keywords to ensure thorough coverage. The derived keywords are summarized in Table 7.

Table 6: Overview of the systematic review search parameters

Category	Parameter	Description
SEL Administrators	Personnel	Counselors and teachers involved in the implementation of SEL intervention
Social-emotional skills	Competencies Deficiencies	Reporting on the level of social-emotional skills among students that constitute the target population for SEL interventions
SEL Interventions /SEL Programs	Effectiveness Emotion and Social Development Academic achievements Types of programs	Effectiveness of applied programs and interventions on student behavior, social and emotional competencies, and academic achievements

Table 7: List of Keywords – Selected and Agreed on by Two Experts in Educational Psychology

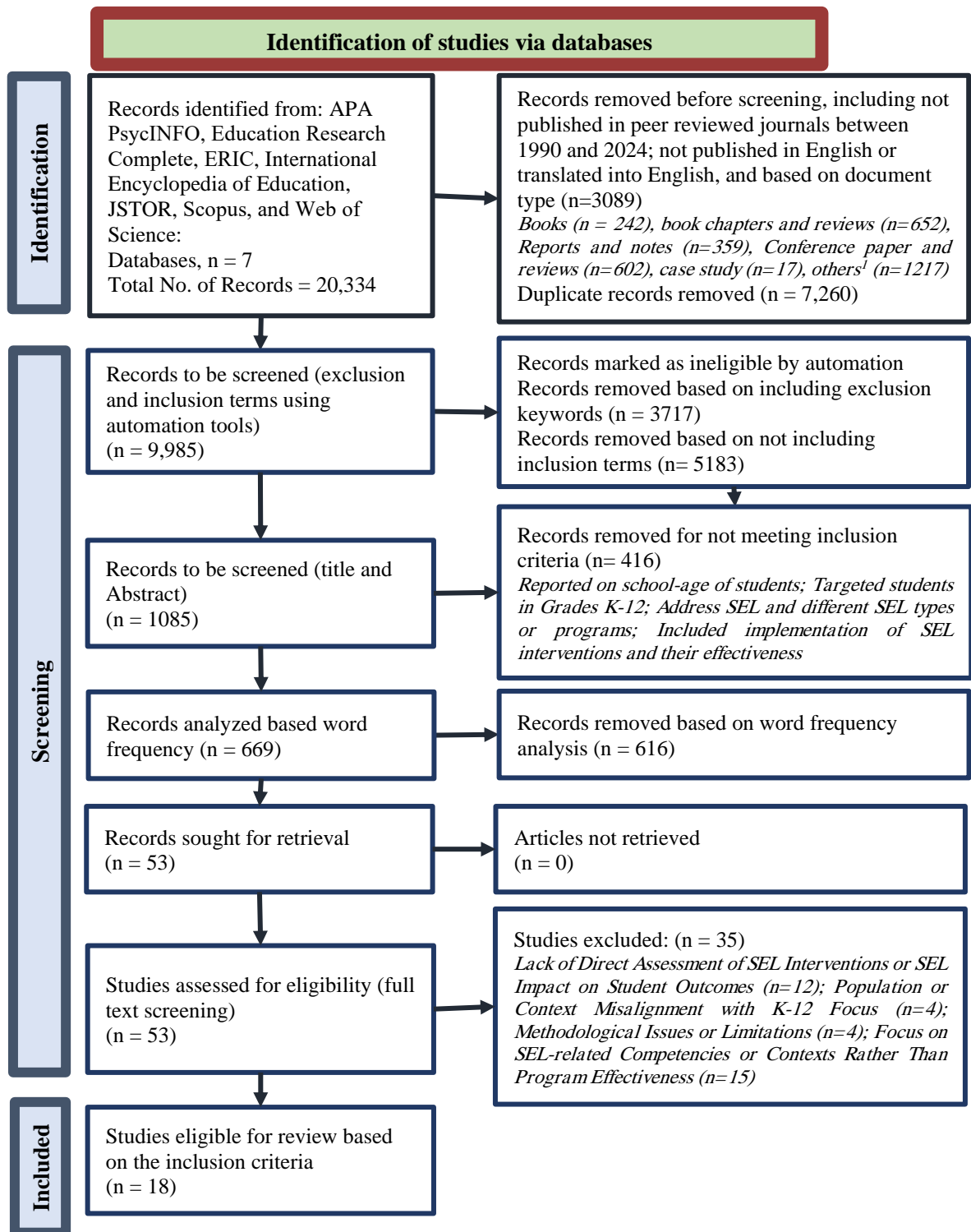
Concept	Keywords / Terms
Social Emotional Learning	“Emotion recognition” or “Emotional Development” or “Psycho-social development” or “Social learning” or “Social problems in education” or “Emotional development” or “Emotional response” or “Social development” or “Student development”
Social-Emotional Skills	“Social skills training” or “Behavior modification” or “Affective education” or “Social skills education” or “Anti-social behavior” or “Social cognition” or “Applied behavior

Concept	Keywords / Terms
School Counseling	analysis” or “Social–emotional competence” or “Social behavior” or “Social skills” or “social-emotional deficiencies” “School counselor” or “Educational programs” or “Child guidance” or “Educational Therapy” or “Mental health services” or “School based intervention” or “School counselor” or “Educational counseling” or “Counseling in Elementary Education” or “Counseling in Middle Education” or “Counseling in Secondary Education” or “Elementary school counselors” or “interventions” or “Treatment” or “School based intervention” or “Group Intervention” or “School guidance” or “therapy” or “Counselor teacher cooperation” or “Counselor role”
Teacher–student interactions	“Teacher-student interactions” or “Classroom discipline” or “Student engagement”
Responsive Classroom approach	“Responsive Classroom approach” or “Classroom environment” or “Classroom management”
Academic achievement	“Academic achievement” or “Academic Support” or “Achievement Gap” or “Academic Motivation”

The second step involved removing articles that were not eligible for the systematic review, mainly those that were not published in peer-reviewed journals between 1990 and 2024 and that were not published in English or translated into English. Following this step, the screening of the articles based on prespecified eligibility criteria was done. These criteria define the operational characteristics of the studies included or excluded. Initially, the abstracts of the articles were checked against the eligibility criteria as a first screening process. The full text of the articles that passed this first screening was further reviewed against the same set of eligibility criteria in a second screening process. The inclusion criteria focused on empirical studies that assessed the outcomes of SEL interventions in schools and counseling settings. The eligibility criteria for the selection of articles, in general, were:

1. Published between 1990 and 2024.
2. Published in English or translated into English.
3. Articles published in peer-reviewed journals.
4. Reported on school-aged students or targeted students in Grades K-12
5. Address SEL and different SEL types or programs
6. Included implementation of SEL interventions and their effectiveness.

The selection of articles for the systematic review as per the PRISMA process is illustrated in Figure 4.



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. DOI: 10.1136/bmj.n71 For more information, visit: <http://www.prisma-statement.org/>

¹ Document types excluded are: Article in press, Literary Criticism, Opinion Papers, Collected Works – General, Column/Opinion, Comment/Reply, Directory, Editorial, Erratum, Guides (Classroom, Teacher, General, & Non-Classroom), Information Analyses, Interview, Literary Criticism, Retracted, Review-Software & Other, Short survey, Speeches/Meeting Papers

Figure 4: PRISMA Diagram

Data Extraction and Synthesis Process

In conducting the systematic review, several factors were considered, including rationale, objectives, search strategy, critical appraisal (risk of bias), synthesis & analysis, limitations, as well as guidelines and checklists, following the approach adopted by Gutierrez-Bucheli et al. (2022). Data extraction was conducted based on relevant study parameters necessary to address the research questions. These parameters included:

1. Study identification details, such as the primary author's name, publication year, and country of origin.
2. Methodology employed (e.g., research design).
3. Demographic characteristics of the study population, including age, grade level, and gender distribution.
4. School categorization (public or private institutions).
5. Implementation strategies of Social and Emotional Learning (SEL), including placement within a specific setting (e.g., center, classroom, schoolwide) or administration by a counselor.
6. Evaluation of SEL intervention effectiveness, including measurement tools used and corresponding outcomes.

The extracted data were compiled into a structured database, typically using an Excel spreadsheet, to facilitate analysis and synthesis. Consistent with the approach of Zawacki-Richter et al. (2020), the systematic review synthesized the extracted data by integrating findings across individual studies. Patterns in the data were identified, and textual elements were linked to answer the research questions. This process involved exploring various data combinations to generate new synthesized interpretations.

Findings from individual studies were analyzed in relation to one another, identifying both converging and contradictory results. This approach facilitated the identification of common themes while allowing for the examination of inconsistencies.

The Mixed Method Appraisal Tool (MMAT)

The quality of the selected studies was evaluated using the Mixed Methods Appraisal Tool (MMAT). Systematic reviews that combine qualitative and quantitative evidence present challenges in assessing study quality. To address this, the Mixed Methods Appraisal Tool (MMAT) was developed as a critical appraisal tool specifically designed for evaluating studies in systematic mixed-methods reviews. Initially created in 2006 following a literature review on systematic reviews integrating qualitative and quantitative research, the MMAT underwent pilot and interrater reliability testing. A major revision was introduced in 2018, incorporating insights from usefulness testing, an extensive review of critical appraisal tools, and a modified e-Delphi study involving methodological experts to refine its core criteria (Hong et al., 2018; de Oliveira et al., 2021). What distinguishes the MMAT is its ability to assess different research methodologies, qualitative, quantitative, and mixed methods, using a unified framework. Focusing on essential methodological criteria, it ensures a streamlined yet comprehensive evaluation process. The MMAT includes five core quality criteria for each of the five study design categories:

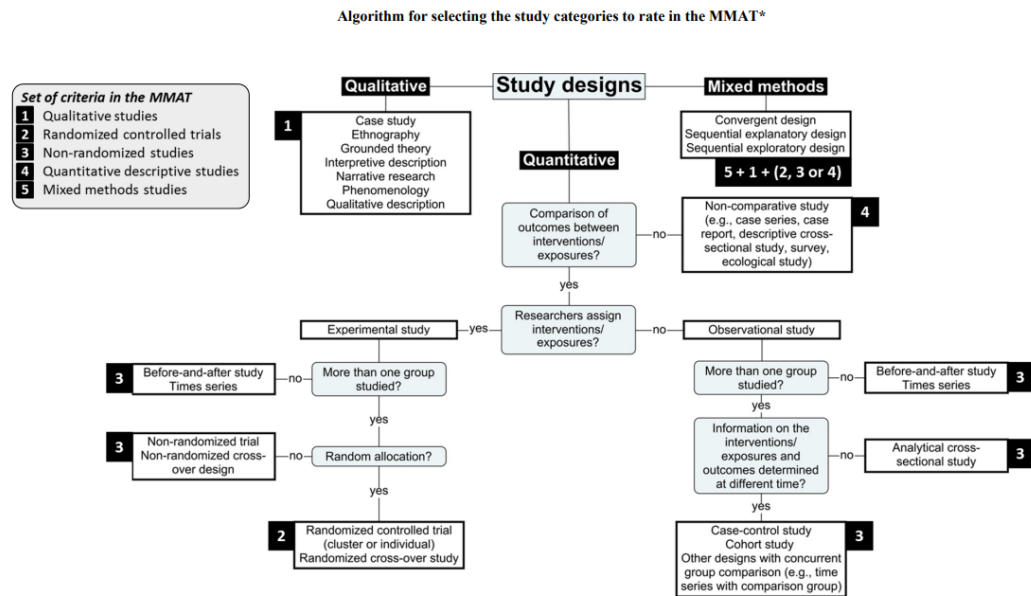
1. **Qualitative Studies:** Assesses the appropriateness of qualitative methods, relevance of data sources, ethical considerations, and significance of findings.
2. **Quantitative Randomized Controlled Trials (RCTs):** Evaluates the adequacy of the randomization process, suitability of study groups, and handling of withdrawals and dropouts.

3. **Quantitative Non-randomized Studies:** Examines sample representativeness, intervention measurement, and appropriateness of statistical analyses.
4. **Quantitative Descriptive Studies:** Focuses on sample representativeness and the objectivity and reliability of outcome measurements.
5. **Mixed Methods Studies:** Evaluates the integration of qualitative and quantitative components, methodological coherence, and the significance of integration in interpreting results.

Each section of the MMAT consists of five standardized questions that require a 'yes,' 'no,' or 'can't tell' response, facilitating an efficient yet thorough assessment of complex studies (Hong et al., 2018). The structured approach of the MMAT enables reviewers to systematically appraise studies across diverse research designs while maintaining consistency. The validity and reliability of the MMAT have been rigorously evaluated. The 2018 revision improved clarity and relevance by integrating feedback from methodologists and researchers. Validity is reinforced by its ability to systematically assess multiple study types, while reliability testing confirms that it can be applied consistently by reviewers with a foundational understanding of research methodologies. To ensure uniform application, the MMAT manual provides detailed training and guidelines (Hong et al., 2018).

To assist researchers in selecting the appropriate study category for evaluation, Figure 5 presents a structured decision tree that guides the classification of studies using MMAT 2018 guidelines. This algorithm provides specific criteria to determine the appropriate study design, ensuring an accurate and systematic appraisal process. By limiting the assessment to core methodological criteria, the MMAT enhances efficiency

without compromising quality, making it a distinctive tool in the field of systematic reviews.



*Adapted from National Institute for Health Care Excellence. (2012). *Methods for the development of nice public health guidance*. London: National Institute for Health and Care Excellence; and Scottish Intercollegiate Guidelines Network. (2017). *Algorithm for classifying study design for questions of effectiveness*. Retrieved December 1, 2017, from http://www.sign.ac.uk/assets/study_design.pdf.

Figure 5: Algorithm for Categorizing Studies in MMAT 2018 Assessment

Council for Exceptional Children’s (CEC) standards

The evaluation of selected studies was conducted using the Council for Exceptional Children (CEC) standards for evidence-based practices in special education. These standards provide a framework for assessing the methodological quality of research and categorizing the evidence base of interventions based on their impact on student outcomes. CEC’s approach applies only to studies that examine the effects of well-defined practices or programs on student performance, excluding those that focus solely on changes in instructor or parent behavior. The standards also require that reviews specify targeted outcome areas, learner populations, and, in some cases, settings or interventionists. While studies do not need to be published in peer-reviewed

journals, they must be publicly accessible. The CEC framework relies on two primary research methodologies: group comparison studies (e.g., randomized controlled trials, quasi-experimental designs) and single-subject research. These designs allow for reasonable causal inferences, whereas correlational and qualitative studies are excluded due to their limitations in establishing causality.

To ensure methodological rigor, studies must meet predefined quality indicators, addressing key aspects such as research design, participant selection, intervention implementation, and outcome measurement. Studies are considered methodologically sound if they meet all relevant quality indicators, reducing potential threats to validity. Reviewers may apply informed judgment when explicit reporting is lacking but sufficient supporting evidence is present. Based on the number, methodological quality, and outcomes of reviewed studies, practices are categorized into five classifications: evidence-based practices, potentially evidence-based practices, mixed effects, insufficient evidence, or negative effects. Evidence-based practices require support from multiple methodologically sound studies demonstrating positive effects, while potentially evidence-based practices meet a lower threshold of supporting studies. Practices with inconsistent results or insufficient research are classified accordingly, and those with a predominance of negative outcomes are categorized as having negative effects. This rigorous evaluation process ensured that only high-quality studies were included in the review, providing a reliable basis for assessing the effectiveness of interventions in special education.

Figure 6 illustrates the CEC-based evaluation process for studies. It consists of eight steps, each assessing a specific criterion, including context and setting, participants, intervention agent, description of practices, implementation fidelity,

internal validity, dependent variables, and data analysis. The process results in an overall quality rating of the study as High, Medium, or Low.

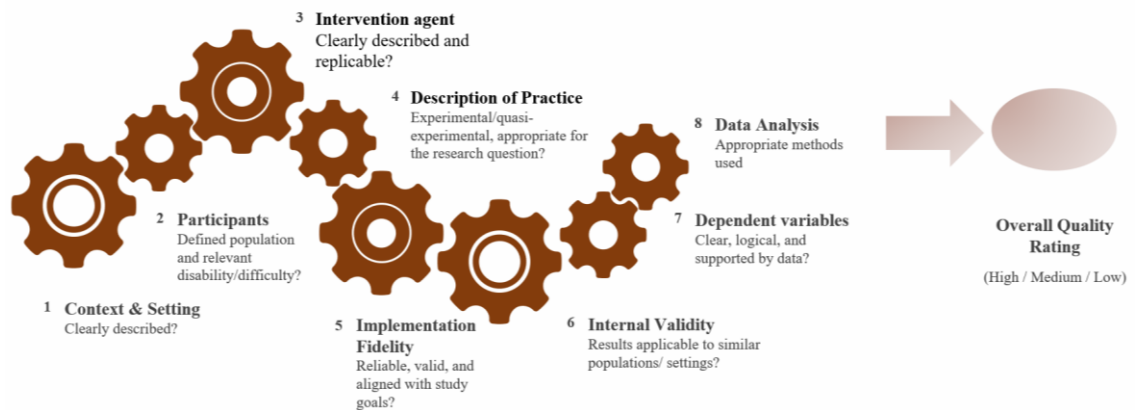


Figure 6: CEC-Based Evaluation Process

Rationale for Using Both CEC and MMAT to Assess Study Quality

As described in the previous sections, this study employed two complementary tools to assess the quality of included studies: the Council for Exceptional Children (CEC) Quality Indicators and the Mixed Methods Appraisal Tool (MMAT). Both tools emphasize the importance of clearly reported interventions, strong study design, and reliable outcome measures. However, they differ in focus and applicability. The CEC Quality Indicators are primarily suited for evaluating quantitative intervention studies, particularly in educational and special education settings. The tool emphasizes practice relevance, including how clearly an intervention is described, how well it is implemented, and whether it can be replicated in real-world contexts. However, it is less applicable to qualitative or mixed-methods research, as it does not address methodological nuances such as data triangulation or qualitative validity. In contrast, the MMAT was developed to assess the methodological quality of a wide range of

research designs, including qualitative, quantitative (randomized, non-randomized, and descriptive), and mixed-methods studies. MMAT is particularly valuable for identifying issues related to study design, such as the control of confounders, appropriateness of sampling strategies, and use of statistical analysis or qualitative validation methods. For example, a study may receive a high rating using the CEC tool due to its clarity and practical application, but a lower MMAT score if it lacks methodological rigor, such as weak randomization or insufficient control of biases.

Using both the CEC and MMAT tools provides a holistic evaluation of the selected studies. The CEC tool supports the identification of contextual and practical strengths, focusing on whether interventions are well-articulated, feasible, and replicable. The MMAT, meanwhile, adds depth by examining design-specific methodological quality across various types of studies, including those that incorporate qualitative elements. Importantly, MMAT offers a more refined and detailed assessment of qualitative and mixed-methods studies, which are increasingly used in the field of social and emotional learning (SEL). By applying both tools, this review creates a comprehensive quality profile for each included study, balancing practical relevance with methodological rigor. This combined approach strengthens the interpretation of the evidence and increases the reliability of the conclusions drawn about the effectiveness and applicability of SEL interventions, both globally and in the Lebanese context.

Figure 7 illustrates the convergences and divergences between the CEC and MMAT tools.

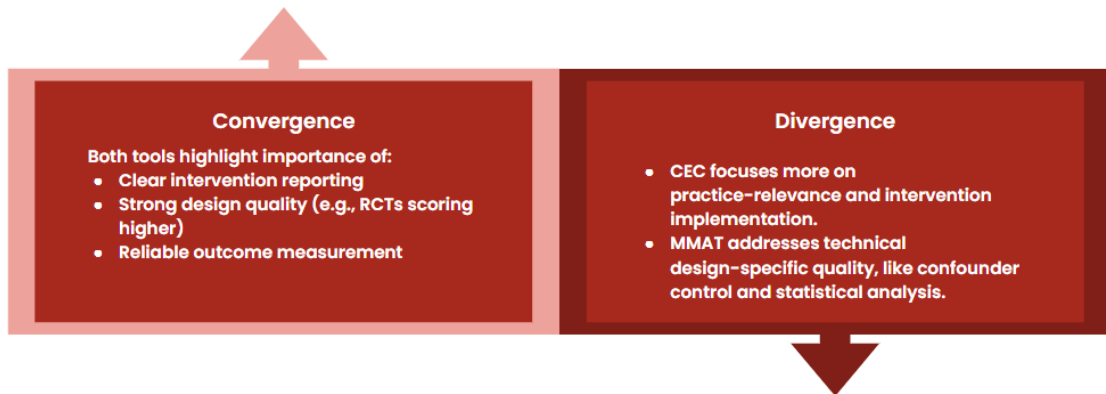


Figure 7: Convergences and Divergences between CEC and MMAT Tools

Methodology for Developing SEL Implementation Recommendations in Lebanese Educational System

The development of recommendations for implementing Social and Emotional Learning (SEL) in the Lebanese educational system was grounded in the systematic review of empirical studies on SEL interventions for K-12 students. This review facilitated a structured and comprehensive synthesis of existing research, enabling the identification of successful practices, key challenges, and contextual factors influencing the effectiveness of SEL programs. Employing a rigorous methodological approach ensured that the proposed recommendations were evidence-based, contextually relevant, and aligned with international best practices in SEL implementation. This methodology follows a multi-step process designed to ensure that the proposed SEL interventions are pedagogically sound, developmentally appropriate, and tailored to the unique characteristics of the Lebanese educational landscape. The key steps are outlined in Figure 8. As illustrated in Figure 8, the process of adapting social-emotional learning (SEL) programs to the Lebanese context involves several key steps. First, it begins with identifying SEL programs that are culturally and linguistically appropriate, considering existing curriculum frameworks and school structures, as well as societal attitudes

toward SEL integration. The next step focuses on determining the necessary teacher support and capacity building, which includes organizing targeted training workshops and providing instructional resources and implementation guides. Identifying effective implementation strategies follows, where approaches such as direct classroom instruction, curriculum integration, and schoolwide implementation are considered. Finally, actionable recommendations are formulated, identifying the most suitable SEL programs, the optimal modes of implementation, and practical procedures for ensuring effective execution in the local educational setting. By employing this structured methodology, the proposed recommendations are expected to be both evidence-based and contextually relevant, ensuring alignment with the developmental needs of K-9 students. Ultimately, the effective integration of SEL in Lebanese schools aims to foster improved classroom behavior, enhance student well-being, and support academic achievement. Furthermore, a framework was developed to validate the recommendations for application in Lebanon. The proposed framework combines qualitative and quantitative research techniques to ensure a comprehensive and well-rounded validation process. In this regard, the methodology for developing this framework addresses data collection, survey methodology, interview methodology, and workshop methodology, which will be covered in more detail in Chapter 7.



Figure 8: Methodological Steps for Developing Recommendations

CHAPTER 5

FINDINGS

This chapter is organized to address the key aspects of the study in a coherent and structured manner, with each section responding to one of the study's research questions. To address the research question, “What do we know about the tools and procedures used to evaluate the effectiveness of SEL programs?”, the chapter begins by exploring the types, themes, and content of SEL programs used in empirical research, particularly in the reviewed studies. The next section provides a synthesized summary of the available studies on the effectiveness of social-emotional learning (SEL) programs, focusing on their impact on students' academic and social-emotional development. This section addresses the question, “What are the available studies that explored the effectiveness of SEL programs on students' academic and social-emotional skills?”. Additionally, the tools and procedures employed to assess the effectiveness of these programs, along with the methodologies used to measure outcomes and evaluate program success, are elaborated in a subsequent section in an attempt to answer the research question, “What do we know about the tools and procedures used to evaluate the effectiveness of SEL programs?”. Finally, the findings related to the evaluation of the quality of reviewed studies on SEL programs, using the Council for Exceptional Children (CEC) standards and the Mixed Methods Appraisal Tool (MMAT), are covered in the last section of the chapter, addressing the fourth research question, “What are the qualities of empirical evidence for peer-reviewed studies on SEL programs, as assessed by the Council for Exceptional Children (CEC) and the Mixed Methods

Appraisal Tool (MMAT)?". This structure ensures that each research question is thoroughly explored, providing a clear roadmap to the findings and their implications.

Eighteen studies were selected for the systematic review. The distribution of the selected studies by year of publication is illustrated in Figure 9. As shown, all selected articles were published between 2009 and 2024. Notably, 44% of the studies (8 out of 18) were published within the past five years (2020–2024), highlighting the review’s emphasis on incorporating recent research on SEL programs. Additionally, 10 of the 18 selected studies were published between 2010 and 2019, ensuring that the review reflects not only current findings but also integrates earlier research, thereby providing a comprehensive and well-rounded analysis of the field.

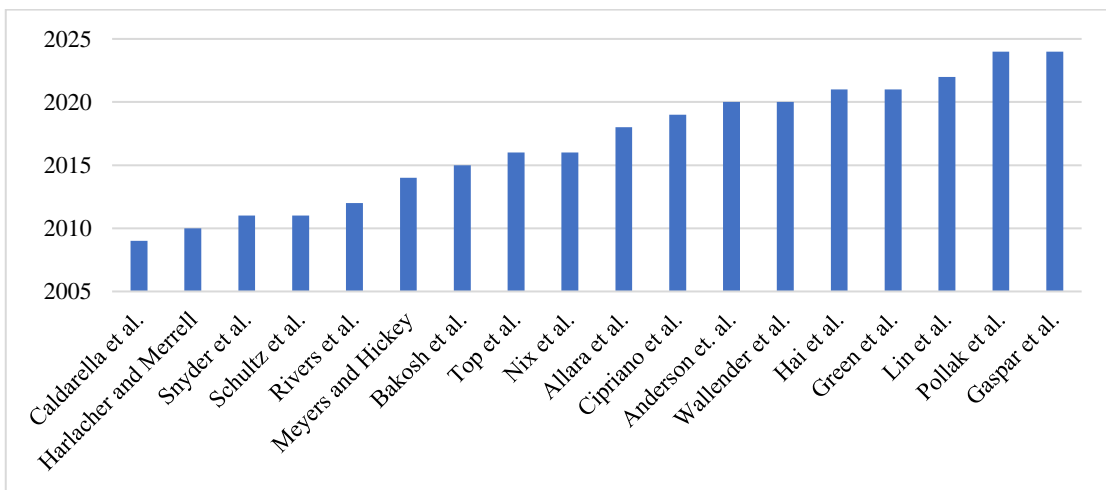


Figure 9: Distribution of Selected Studies by Year of Publication (2009–2024)

The main objectives of the reviewed studies are summarized in Table 8, while Table 9 and Table 10 present a summary of the extracted data from all the studies. The following subsections will outline common findings on the effectiveness of SEL

programs, followed by a critical analysis of study results, highlighting both positive outcomes and challenges in SEL program implementation.

Table 8: Main Objectives of the Selected Studies

S.N.	Author / Year	Study Title	Objectives
1	Pollak et al. (2024)	Promoting Peer Connectedness Through Social-Emotional Learning	<ul style="list-style-type: none"> – Evaluate the effectiveness of a school-based SEL program in improving social-emotional skills, peer connectedness, happiness, and classroom climate. – Assess the impact of social-emotional skills on peer connectedness and classroom climate. – Investigate the relationship between peer connectedness and happiness. – Compare the intervention's effectiveness across different implementation progress groups.
2	Hai et al. (2021)	Impact of MindUP on Elementary School Students' Classroom Behaviors	<ul style="list-style-type: none"> – Examine the effectiveness of the MindUP SEL program in improving classroom behaviors of elementary school students. – Assess changes in positive classroom behaviors (active and passive on-task behaviors). – Evaluate reductions in negative classroom behaviors (disruptive and non-disruptive off-task behaviors). – Analyze unexpected effects of the intervention on active on-task behaviors.
3	Green et al. (2021)	Evaluation of the SPARK Child Mentoring Program	<ul style="list-style-type: none"> – Investigate the effectiveness of the SPARK Child Mentoring Program in enhancing resilience and social-emotional competencies. – Assess the impact of the program on communication, decision-making, problem-solving skills, emotional regulation, and resilience. – Determine the benefits of SEL programs for children from economically disadvantaged minority backgrounds. – Explore the long-term preventive effects of the intervention.

S.N.	Author / Year	Study Title	Objectives
4	Allara et al. (2019)	A School-Based Program to Promote Well-Being in Preadolescents	<ul style="list-style-type: none"> – Evaluate the impact of the "Diario della Salute" program on subjective well-being, aggressive behavior, and health behavior in adolescents. – Assess whether providing social and emotional skills improves students' well-being and ability to manage developmental challenges. – Analyze unintended effects of the program, including increased psychosomatic complaints.
5	Gaspar et al. (2023)	Implementation of an Evidence-Based SEL Program for Teachers	<ul style="list-style-type: none"> – Assess the effectiveness of the Incredible Years® Teacher Classroom Management (IY-TCM) program in enhancing children's social-emotional skills and reducing problem behaviors. – Evaluate the impact of the program on social-cognitive problem-solving skills. – Analyze factors influencing intervention efficacy, including child and parental characteristics. – Provide guidelines for scaling up and sustaining SEL program effects in real-world settings.
6	Snyder et al. (2012)	Improving Elementary School Quality Through the Use of a Social-Emotional and Character Development Program	<ul style="list-style-type: none"> – Evaluate the impact of the Positive Action program on school safety and quality. – Assess teacher, parent, and student perceptions of school safety and well-being. – Examine program effects on student involvement, satisfaction, and school climate. – Compare intervention and control schools based on changes in school quality indicators.
7	Top et al. (2016)	Effects of Second Step Curriculum on Behavioral and Academic Outcomes in 5th and 8th Grade Students	<ul style="list-style-type: none"> – Investigate the effects of the Second Step program on problem behaviors, prosocial behaviors, and academic achievement. – Assess the longitudinal impact of the program on behavioral and academic outcomes.

S.N.	Author / Year	Study Title	Objectives
8	Lin et al. (2022)	Shaping Classroom Social Experiences Through Collaborative Small-Group Discussions	<ul style="list-style-type: none"> – Compare the differences in student outcomes between intervention and control groups. – Examine the implications of the program for improving school climate and student engagement. – Examine the effects of collaborative small-group discussions on students' social experiences. – Assess the impact of the Collaborative Social Reasoning (CSR) approach on social acceptance, aggression, and classroom participation. – Compare CSR with other instructional methods (Read-Aloud and Regular Instruction). – Explore student and teacher perspectives on the program's effectiveness in fostering social relationships.
9	Anderson et al. (2020)	Teacher Fidelity to Conscious Discipline and Children's Executive Function Skills	<ul style="list-style-type: none"> – Investigate the impact of the Conscious Discipline model on children's social-emotional learning and executive function skills. – Assess the influence of teacher fidelity to the program on student outcomes. – Examine the relationship between social-emotional learning abilities and interpersonal skills, self-awareness, self-management, and decision-making. – Provide theoretical and practical support for SEL in early childhood education.
10	Wallender et al. (2020)	Effects of an Explicit Curriculum on Social-Emotional Competency in Elementary and Middle School Students	<ul style="list-style-type: none"> – Evaluate the effectiveness of the Second Step SEL curriculum in enhancing self-regulation, self-awareness, and problem-solving skills. – Measure changes in student self-perception using self-assessments before and after program implementation. – Analyze differences in SEL outcomes between elementary and middle school students.

S.N.	Author / Year	Study Title	Objectives
11	Nix et al. (2016)	The Randomized Controlled Trial of Head Start REDI Sustained Effects on Developmental Trajectories of Social–Emotional Functioning	<ul style="list-style-type: none"> – Assess the reliability of self-report measures in evaluating SEL competencies in younger students. – Assess the sustained effects of the Head Start REDI intervention on children’s social-emotional development. – Examine how the intervention impacts children’s school readiness and emotional competence over time. – Analyze whether the program influences long-term behavioral and academic outcomes.
12	Schultz et al. (2011)	A Preschool Pilot Study of Connecting with Others Lessons for Teaching Social and Emotional Competence	<ul style="list-style-type: none"> – Examine the effects of a preschool social-emotional skills curriculum on children's behavior. – Assess whether the program improves peer interactions, self-regulation, and prosocial behavior. – Determine the feasibility of implementing SEL curricula in early childhood settings.
13	Caldarella et al. (2009)	Promoting Social and Emotional Learning in Second Grade Students: A Study of the Strong Start Curriculum	<ul style="list-style-type: none"> – Evaluate the effects of the "Strong Start" SEL curriculum on second-grade students' social-emotional competence. – Assess improvements in students' emotional regulation, self-awareness, and classroom behavior. – Examine teacher-reported changes in student engagement and interactions.
14	Meyers & Hickey (2014)	Multilevel Prospective Dynamics in School-Based Social and Emotional Learning Programs	<ul style="list-style-type: none"> – Review evidence on the multilevel and cross-level dynamics within school-based SEL interventions. – Analyze how SEL program implementation varies at the individual, classroom, and school levels. – Assess the effectiveness of different intervention models for sustaining long-term SEL benefits.
15	Bakosh et al. (2016)	Maximizing Mindful Learning: Mindful Awareness Intervention	<ul style="list-style-type: none"> – Test the feasibility and effectiveness of an audio-guided mindful awareness training program.

S.N.	Author / Year	Study Title	Objectives
		Improves Elementary School Students' Quarterly Grades	<ul style="list-style-type: none"> – Assess whether mindfulness interventions improve elementary students' academic performance. – Examine potential cognitive and emotional benefits of mindfulness training for young learners.
16	Rivers et al. (2013)	Improving the Social and Emotional Climate of Classrooms: A Clustered Randomized Controlled Trial Testing the RULER Approach	<ul style="list-style-type: none"> – Investigate the impact of the RULER approach on classroom climate and social interactions. – Assess improvements in students' emotional literacy, peer relationships, and engagement. – Compare classroom outcomes between RULER and traditional instructional methods.
17	Cipriano et al. (2019)	Exploring Changes in Student Engagement Through the RULER Approach: An Examination of Students at Risk of Academic Failure	<ul style="list-style-type: none"> – Examine whether the RULER approach enhances engagement and behavioral outcomes for at-risk students. – Analyze the program's impact on emotional regulation, motivation, and academic persistence.
18	Harlacher & Merrell (2010)	Social and Emotional Learning as a Universal Level of Student Support: Evaluating the Follow-up Effect of Strong Kids on Social and Emotional Outcomes	<ul style="list-style-type: none"> – Evaluate the initial and follow-up effects of the Strong Kids SEL curriculum. – Assess long-term changes in students' social-emotional competencies.

Table 9: Extracted Data from Selected Studies – Part 1

S. N.	Author / Year	School Category, Type and Settings	Students' Age or Grade	SEL Implementation Strategy	SEL Program
1	Pollak et al. (2024)	Private Two types: - grammar school - comprehensive school Two settings: - 96 were rural schools - 185 were urban schools	9 to 12 years old.	Schoolwide	You, Me and the Little Monsters /
2	Hai et al. (2021)	Public, Comprehensive School	Grade 5	Classroom Instruction	MindUP - Version gr 3-5 /
3	Green et al. (2021)	Public, Comprehensive School, Title 1 school (Elementary school)	Grades 4 and 5	Schoolwide	SPARK
4	Allara et al. (2019)	Not specified whether Public or Private, Comprehensive School; Various settings - Schools from socioeconomically and demographically diverse Italian regions	12 to 13 years old.	Schoolwide	Diario della Salute [My Health Diary]
5	Gaspar et al. (2023)	Not specified; Not indicated, Not applicable	2 to 10 years old	Schoolwide	Incredible Years® Teacher Classroom Management (IY-TCM),
6	Snyder et al. (2012)	Public; Elementary schools; racially/ethnically diverse schools	K-6	Schoolwide	Positive Action; /
7	Top et al. (2016)	Not specified; Comprehensive; open-enrollment charter school system in Texas	Grade 5 to 8	Schoolwide	Second Step; measured /
8	Lin et al. (2022)	Public; Middle/intermediate schools	Grade 5	Classroom Instruction	Collaborative Social Reasoning (CSR).

S. N.	Author / Year	School Category, Type and Settings	Students' Age or Grade	SEL Implementation Strategy	SEL Program
9	Anderson et al. (2020)	Not specified		Classroom Instruction	Conscious Discipline
10	Wallender et al. (2020)	Public elementary and middle school; rural		Classroom Instruction	Second Step
11	Nix et al. (2016)	Not specified whether public or private; elementary schools	4-year-old / K	Integration with existing curricula	Head Start Research-based, Developmentally Informed (REDI);
12	Schultz et al. (2011)	Private, pre-school	3 to 5 years old	Classroom Instruction	Connecting with Others
13	Caldarella et al. (2009)	Not specified whether public or private, comprehensive schools; suburban elementary school		Classroom Instruction	Strong Start: A Social and Emotional Learning Curriculum;
14	Meyers and Hickey (2014)	Not applicable	Not applicable	Not applicable	Multiple Programs Reviewed
15	Bakosh et al. (2016)	Public elementary schools in Suburbs of Chicago	Grade 3	Classroom Instruction	Mindful-based social and emotional learning (MBSEL)
16	Rivers et al. (2013)	Private, Catholic Schools of Brooklyn and Queens	Grades 5 and 6	Classroom Instruction	RULER,
17	Cipriano et al. (2019)	Private Catholic Schools	Grade 5	Classroom Instruction	RULER
18	Harlacher and Merrell (2010)	Not specified whether public or private; elementary school in the Pacific Northwest	Grades 3 and 4	Classroom Instruction	Strong Kids: A Social and Emotional Learning Curriculum,

Table 10: Extracted Data from Selected Studies – Part 2

S. N.	Author / Year	Parameter Measured relevant to research questions	Tools used to measure effectiveness
1	Pollak et al. (2024)	Behavior in the Classroom	1. The Peer Connectedness subscale of the EPOCH Measure of Adolescent Wellbeing. 2. The Self-Report Checklist for Social and Learning Behavior 3. The Classroom Responsibility Climate Questionnaire
2	Hai et al. (2021)	Behavior in the Classroom	Direct Behavior Rating – Single Item Scales (DBR-SIS).
3	Green et al. (2021)	Measured both Classroom behavior and Academic performance	Communication, Decision-Making, and Problem-Solving (CDP-Child) scale, developed by the SPARK program staff.
4	Allara et al. (2019)	Behavior, in general	12-item version of the Physical and Verbal Aggression Scale

S. N.	Author / Year	Parameter Measured relevant to research questions	Tools used to measure effectiveness
5	Gaspar et al. (2023)	Measured both Classroom behavior and Academic performance	1. Strengths and Difficulties Questionnaire (SDQ). 2. PKBS-2 and SSBS-2. 3 Wally Problem Solving Test
6	Snyder et al. (2012)	Academic Performance	The School Quality Survey (SQS)
7	Top et al. (2016)	Measured both, Classroom behavior and Academic performance	1. School Behaviors: Teachers observed and recorded students' problem and prosocial behaviors using the Discipline Point System (DPS) and the Prosocial Behavior Rating System (PBRS). 2. Grade Point Averages (GPAs).
8	Lin et al. (2022)	Measured Behavior, in general	1. Traditional initiation–response–evaluation (IRE) pattern 2. Peer social acceptance ratings, 3. Peer nominations 4. Social competence survey, 5. Post-intervention student and teacher interviews
9	Anderson et. al. (2020)	Measured both, Classroom behavior and Academic performance	1. Minnesota Executive Function Scale (MEFS) 2. Bracken Basic Concept Scale-Third Edition: Receptive (BBCS-3:R)
10	Wallender et al. (2020)	Academic Performance	Pre/post-test survey based on the CASEL framework
11	Nix et al. (2016)	Measured both, Classroom behavior and Academic performance	1. Social Competence Scale 2. Teacher Observation of Classroom Adaptation—Revised (TOCA-R) 3. Student–Teacher Relationship Scale 4. Child Behavior Scale
12	Schultz et al. (2011)	Measured Behavior, in general	1. Behavior Assessment System for Children, 2nd Edition (BASC-2) 2. Connecting with Others Rating Scale

S. N.	Author / Year	Parameter Measured relevant to research questions	Tools used to measure effectiveness
13	Caldarella et al. (2009)	Behavior in the Classroom	1. School Social Behavior Skills (SSBS) 2. Social Skills Rating System (SSRS)
14	Meyers and Hickey (2014)	Not applicable	Not applicable
15	Bakosh et al. (2016)	Measured both Classroom behavior and Academic performance	1. Quarterly grades 2. Daily behavior logs documenting incidents
16	Rivers et al. (2013)	Behavior in the Classroom	1. Classroom Assessment Scoring System (CLASS). 2. Teacher Surveys: Classroom Supportiveness Scale, Emotion-Focused Interaction Scale, and Cooperative Learning Strategies Scale 3 Student Surveys: Affiliation with Teacher Scale and the Classroom Supportiveness Scale
17	Cipriano et al. (2019)	Academic Performance	1. Engagement vs. Disaffection Scale (student self-report) 2. Grade Point Average (GPA), 3. Teacher-reported conduct composite
18	Harlacher and Merrell (2010)	Measured both, Classroom behavior and Academic performance	1. SK Knowledge Test 2. <i>Shortened Coping Scale</i> 3 <i>Social-Emotional Assets and Resiliency Scales-Child Self-Report</i> Social Functioning 4. Peer Relations Subscale of School Social Behavior Scales (SSBS-2)

Evaluation of SEL Program Utilized in Empirical Research

The studies reviewed in this systematic review encompass a wide range of social-emotional learning (SEL) programs implemented across various educational contexts, revealing diversity in program types, thematic foci, and content delivery strategies. These interventions aim to enhance multiple aspects of students' social and emotional competencies, including general behavior and classroom behavior, with a particular focus on peer relationships, self-regulation, and emotional clarity. This analysis addresses one of the study's research questions by examining the types, themes, and content of SEL programs utilized in empirical research. Table 11 presents a selection of social and emotional learning (SEL) programs used in empirical research, highlighting various aspects of each program, including the target group, developer, main goals, structure, and key competencies or content areas addressed by each program. While many programs demonstrate positive effects, variations in effectiveness are observed depending on the program type, implementation fidelity, and the specific outcomes measured. Most programs yield improvements in student behavior, with some also showing academic benefits.

Table 11: SEL Programs Utilized in Empirical Research

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
You, Me and the Little Monsters	9–12-year-old students (transition from primary to secondary school)	Ludwig Boltzmann Society (Vienna), Karl Landsteiner University of Health Sciences (Krems), University College of Teacher Education (Lower Austria)	Enhance classroom climate and promote peer connectedness	8 sessions, participatory development involving students and teachers	<ul style="list-style-type: none"> – Emotion vocabulary and recognition (Emotion monsters) – Emotion intensity and regulation – Empathy and classroom rules – Prosocial behavior and support strategies – Communication and conflict resolution – Perspective-taking in conflict resolution – Bullying awareness and bystander intervention
MindUP	Pre-K to 8th grade students	The Goldie Hawn Foundation	Enhance self-regulation, academic performance, social skills, classroom behavior, and resilience	15 lessons based on neuroscience, positive psychology, mindful awareness, and SEL; available in multiple languages	<ul style="list-style-type: none"> – Mindful awareness practices – Optimistic classroom atmosphere – Evidence-based and manualized curriculum – Extension of concepts beyond classroom – Improvements in emotional regulation, empathy, stress reduction, executive

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
					functions, and social-emotional competence
SPARK (Speak to the Potential, Ability, and Resilience inside every Kid)	Elementary students (ages 8–10); professional development also available for educators	SPARK Program Developers (via sparkcurriculum.org)	Enhance emotional well-being, resilience, and executive functioning; foster sustainable mental well-being	Based on principles of Mind, Thought, and Consciousness; insights-driven approach developed over 10 years	<ul style="list-style-type: none"> – Self-awareness and emotional regulation – Resilience building – Social awareness and communication skills – Problem-solving and decision-making skills – Recognition of innate psychological strengths – Fostering creativity and potential
My Health Diary (Diario della Salute)	Preadolescents (~ages 12–13; second-year lower secondary school)	Piedmont Region and ASL CN2 Alba-Bra, Italy	Promote healthy habits and well-being through health literacy education	10 weekly sessions (2 hours each); mix of teacher-delivered sessions and small group work	<ul style="list-style-type: none"> – Physical health (nutrition, hygiene, physical activity) – Emotional and relational well-being – Communication skills – Self-awareness and self-efficacy – Healthy lifestyle promotion
Incredible Years® Teacher Classroom Management (IY-TCM)	Teachers of children aged 3–8 years	Carolyn Webster-Stratton	Improve classroom management, foster positive teacher-student relationships, and	Six full-day workshops (or adapted formats), led by certified group leaders, with role-playing,	<ul style="list-style-type: none"> – Teacher-student bond strengthening – Proactive teaching and effective discipline – Social-emotional coaching and academic persistence

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
			enhance socio-emotional learning	discussion, and reflection	<ul style="list-style-type: none"> – Social skills and problem-solving – Individualized behavior plans for challenging behaviors – Building teacher support networks
Positive Action (PA)	PreK–12 students (focus on elementary students in trial)	Positive Action, Inc. (founded in 1977)	Promote positive behavior, academic achievement, and SEL by reinforcing the Thoughts-Actions-Feelings (TAF) Circle	140 lessons per grade per year (15–20 minutes each); school-wide climate and family/community involvement components	<ul style="list-style-type: none"> – Positive self-concept development – Healthy behaviors and intellectual perseverance – Self-management and goal-setting – Communication and interpersonal skills – Integrity and honesty – Lifelong self-improvement – Empathy and perspective-taking – Emotion management and self-regulation – Problem-solving and decision-making – Social competence and relationship skills
Second Step	Preschool to high school students	Committee for Children (based on official program materials)	Foster social competence, empathy, self-regulation, perspective-taking, problem-solving, and emotion management; prevent aggression	Digital, subscription-based model; offers three age-appropriate curricula: - Second Step® Elementary - Second Step® Middle School - Second Step® High School	<ul style="list-style-type: none"> – Empathy and perspective-taking – Emotion management and self-regulation – Problem-solving and decision-making – Social competence and relationship skills

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
			and promote positive behavior		<ul style="list-style-type: none"> – Reducing impulsive behaviors, aggression, and violence – Professional development for educators to sustain SEL practices across school culture
Collaborative Social Reasoning (CSR)	Elementary to high school students	CSR Lab (based on official program materials)	Enhance social reasoning, argumentation, perspective-taking, and interpersonal skills; foster collaborative decision-making and relational equity	Classroom-based discussions using multi-faceted texts; integrated into English Language Arts or Social Studies curricula; small-group structured activities	<ul style="list-style-type: none"> – Social reasoning and argumentation – Perspective-taking and empathy – Communication and collaboration skills – Conflict resolution and decision-making – Leadership and self-management – Respect for diverse viewpoints and relational equity
Conscious Discipline	Children, educators, caregivers, and parents	Dr. Becky Bailey	Build emotional regulation, resilience, self-control, and social-emotional skills through a trauma-informed,	Adult-first model; focuses on self-regulation for adults before teaching children; includes online courses, in-person workshops, and	<ul style="list-style-type: none"> – Emotional regulation and resilience – Self-awareness and self-control – Trauma-informed practices – Conflict resolution and problem-solving

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
			brain-based approach	Conscious Discipline Institutes	<ul style="list-style-type: none"> – Emotional modeling and safe, connected environments – Social-emotional learning for academic and behavioral success
Strong Start and Strong Kids	Preschool through Grade 12	Dr. Kenneth W. Merrell and the Oregon Resiliency Project	Enhance students' social-emotional competencies to improve cognitive, affective, and social functioning	Structured into two programs: Strong Start (PreK-Grade 2) and Strong Kids (Grades 3-12); includes 10 lessons for Strong Start and more advanced lessons for Strong Kids	<ul style="list-style-type: none"> – Emotional awareness and expression – Stress management and resilience – Empathy and interpersonal communication – Problem-solving and conflict resolution – Goal setting and anger management – Preventing anxiety, depression, and behavioral problems
Head Start Research-based, Developmentally Informed (REDI)	Preschool children, especially from disadvantaged backgrounds	Head Start REDI team	Enhance social-emotional and language/emergent literacy skills, focusing on school readiness	Integrated into existing Head Start programs, includes social-emotional and literacy curricula	<ul style="list-style-type: none"> – Social-emotional skills (friendship, emotional understanding, self-control, problem-solving) – Language development (vocabulary, phonology, syntax, print awareness)

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
					<ul style="list-style-type: none"> – Parental involvement and home reinforcement – Teacher training and ongoing support
Connecting with Others	K-12 students, with emphasis on students with disabilities	Unspecified	Enhance social skills, emotional awareness, and conflict resolution	Divided into four volumes based on age group: K-2, 3-5, 6-8, 9-12	<ul style="list-style-type: none"> – Self-awareness, socialization, problem-solving, communication, empathy, and conflict resolution – Cognitive behavioral modification, transactional analysis, responsible assertion – Parental involvement through newsletters with reinforcement activities
Mindfulness-Based Social Emotional Learning (MBSEL)	K-12 students, educators	Unspecified	Integrate mindfulness practice with SEL to enhance emotional regulation, learning, and resilience	Daily 5-10 minute guided mindfulness sessions	<ul style="list-style-type: none"> – Self-awareness, emotional regulation, resilience, stress management – Breathing techniques, body awareness, emotional self-regulation – Holistic approach combining mindfulness and traditional SEL skills

Program Name	Target Group	Developed By	Main Goals	Program Structure	Key Competencies/Content Areas
RULER (Recognizing, Understanding, Labeling, Expressing, and Regulating)	K-8 students, educators, families	Yale Center for Emotional Intelligence	Foster emotional intelligence to improve academic and social outcomes	Multi-year, skill-building curriculum	<ul style="list-style-type: none"> – Recognizing emotions in oneself and others – Understanding the causes and consequences of emotions – Labeling emotions with a nuanced vocabulary – Expressing emotions in accordance with social norms – Regulating emotions using helpful strategies

Table 12 summarizes the different types of SEL programs explored in the reviewed studies. These programs can be categorized into one of four types: Mindfulness-Based Programs, Structured SEL Curricula, Teacher-Centered Programs, and Emotion-Focused Approaches. Programs such as MindUP studied by Hai et al. (2021) and Mindfulness-Based Social and Emotional Learning (MBSEL) studied by Bakosh et al. (2016) fall under the Mindfulness-Based Programs category. This type of SEL program focuses on fostering emotional regulation and stress management, while also enhancing self-awareness, mindfulness, and executive function. The second category, Structured SEL Curricula, includes programs such as Second Step explored by Top et al. (2016) and Conscious Discipline studied by Anderson et al. (2020). These programs emphasize developing skills such as empathy, conflict resolution, and impulse control. They are typically delivered through structured lessons, including teacher-led discussions and activities. The Incredible Years® Teacher Classroom Management (IY-TCM) program explored by Gaspar et al. (2023) is classified as a Teacher-Centered Program. This type focuses on equipping educators with strategies to promote emotional regulation and positive classroom behavior through teacher training and management techniques. On the other hand, Emotion-Focused Approaches emphasize recognizing, understanding, labeling, expressing, and regulating emotions. These approaches aim to improve both academic engagement and the emotional climate of the classroom. The RULER program, studied by Rivers et al. (2013) and Cipriano et al. (2019), is an example of an Emotion-Focused Approach. Lastly, the Peer Interaction and Dialogic Programs, such as the Collaborative Social Reasoning (CSR) program studied by Lin et al. (2022), highlight the role of peer collaboration and dialogic

activities in promoting social acceptance and reducing aggression through structured peer discussions.

Table 12: Types of SEL Programs Explored in the Reviewed Studies

Program Type	Examples	Focus Areas
Mindfulness-Based Programs	MindUP (Hai et al., 2021), Mindfulness-Based SEL (MBSEL) (Bakosh et al., 2016)	Emotional regulation, stress management, self-awareness, executive function
Structured SEL Curricula	Second Step (Top et al., 2016), Conscious Discipline (Anderson et al., 2020)	Empathy, conflict resolution, impulse control
Teacher-Centered Programs	Incredible Years® Teacher Classroom Management (IY-TCM) (Gaspar et al., 2023)	Teacher strategies for emotional regulation and classroom management
Emotion-Focused Approaches	RULER (Rivers et al., 2013 and Cipriano et al., 2019)	Recognizing, understanding, labeling, expressing, and regulating emotions
Peer Interaction Programs	Collaborative Social Reasoning (CSR) (Lin et al., 2022)	Peer collaboration, social acceptance, aggression reduction

The reviewed studies highlight several key themes explored through various SEL programs, demonstrating their diverse approaches to supporting students' emotional, social, and academic development. Programs such as MindUP (Hai et al., 2021) and Incredible Years® Teacher Classroom Management (Gaspar et al., 2023) share the common theme of addressing emotional regulation and self-control. These studies focus on enhancing emotional regulation, helping students manage their emotions during stressful situations, and improving impulse control. The second theme addressed in the reviewed studies is social skills development. Programs falling under this theme include Second Step (Top et al., 2016) and Conscious Discipline (Anderson

et al., 2020). These programs aim to improve social interactions by fostering conflict resolution, empathy, and positive communication skills. Additionally, the RULER program, studied by Rivers et al. (2013) and Cipriano et al. (2019), along with the Collaborative Social Reasoning (CSR) program, studied by Lin et al. (2022), fall under the general theme of peer and teacher relationships. These programs emphasize the significance of positive teacher-student and peer relationships in creating an emotional and academic climate that encourages growth. Moreover, programs like SPARK (Green et al., 2021) and MindUP (Hai et al., 2021) fall under the general theme of “Resilience and Coping Strategies.” These programs focus on building resilience and equipping students with coping strategies for managing challenges and adversity, which is particularly beneficial in disadvantaged contexts. Lastly, programs such as Head Start REDI (Nix et al., 2016) and Strong Start (Caldarella et al., 2009) integrate SEL with academic curricula, aiming to enhance both emotional competence and academic performance simultaneously. Although the studies address distinct themes, they collectively employ varied approaches to assess the overall effectiveness of SEL interventions. Across different thematic focuses, the findings consistently highlight the significant potential of SEL programs to foster holistic student development across emotional, social, and academic domains. The identified themes, along with their key points and examples of programs that can achieve their objectives, are illustrated in Figure 10.

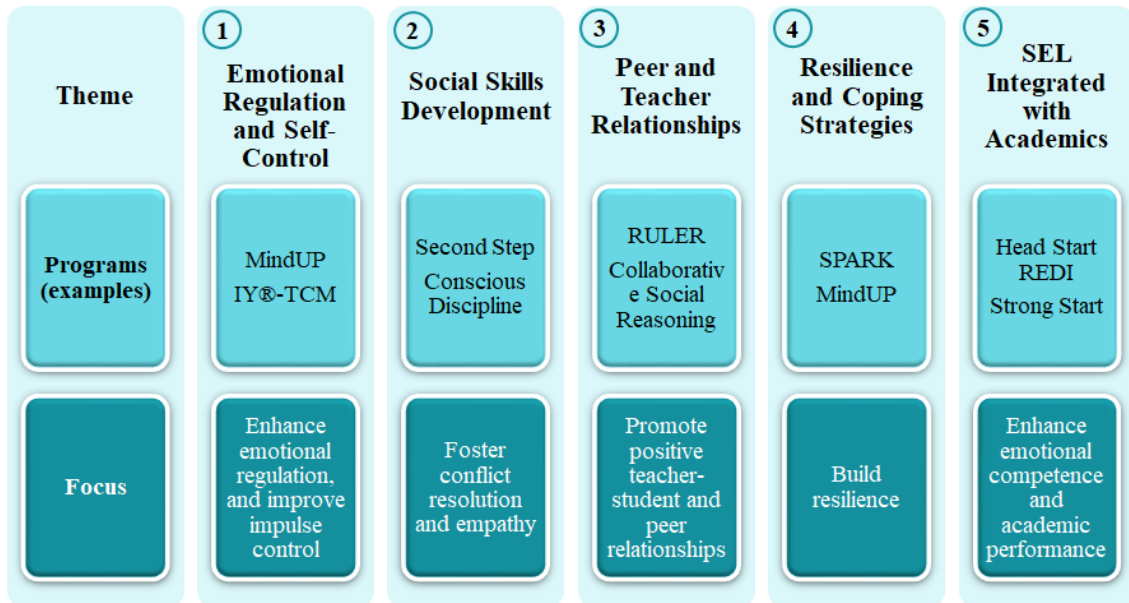


Figure 10: Themes, Programs and Focus

Several important considerations for the effective implementation of SEL programs, emphasizing key components that influence the success of these interventions were identified. The design and implementation approaches identified in the reviewed studies are outlined in the following discussion. Most of the reviewed SEL programs fall under a general approach referred to as “Skill-Building Modules.” These modules focus on developing specific social-emotional skills, such as communication, decision-making, problem-solving, and self-awareness. These skills are taught through structured activities, including role-playing, mindfulness exercises, and peer feedback. Another module identified in the systematic review is the “Teacher Training and Support” module. One example of an SEL program that falls under this module is the Incredible Years® Teacher Classroom Management (Gaspar et al., 2023). This program emphasizes the critical role of educators in SEL and provides teachers with training to model positive behaviors, manage classroom dynamics, and support students' emotional development. A third identified module is “Peer Interaction Activities,” which involve

structured peer interactions where students engage in discussions and collaborative problem-solving. An example of an SEL program that utilizes this approach is Collaborative Social Reasoning (CSR), investigated by Lin et al. (2022). This program includes activities that promote social competence, reduce aggression, and foster social acceptance among peers. Additionally, the use of tools to evaluate the program's effectiveness in improving emotional regulation and behavior is categorized under the general approach of "Behavioral and Emotional Assessments." This approach involves utilizing tools such as the Strengths and Difficulties Questionnaire (SDQ), as applied by Gaspar et al. (2023), or other program-specific assessments to measure students' emotional and behavioral outcomes both before and after the intervention. Lastly, the "Long-Term Social and Emotional Impact" approach is identified in some studies. Programs such as Head Start REDI, studied by Nix et al. (2016), and Mindfulness-Based Social and Emotional Learning (MBSEL), investigated by Bakosh et al. (2016), focus on achieving long-term outcomes, aiming for sustained improvements in students' social, emotional, and academic development over time.

SEL Effectiveness on Students' Academic Performance and Classroom Behavior

The effectiveness of Social-Emotional Learning (SEL) programs along with their impact on both personal development and educational outcomes is explored in the reviewed studies conducted across various international contexts. These studies span diverse educational systems, including those in North America, Europe, Asia, and Australia, and examine a wide range of SEL programs tailored to different cultural and educational settings. The SEL programs investigated in the reviewed studies typically aim to enhance students' emotional intelligence, reduce behavioral problems, improve academic engagement, and contribute to a positive school climate. The growing body of

research demonstrates the significant impact that SEL programs can have in diverse educational environments with outcomes indicating improvements in academic achievement, behavior, mental health, and interpersonal relationships. The examined studies consistently highlight the positive impact of social-emotional learning (SEL) interventions, particularly in enhancing students' social-emotional competencies, classroom engagement, and behavior. Table 13 provides an overview of the SEL programs, their outcomes, target groups, strengths, and limitations based on the studies analyzed.

Table 13: Overview of SEL Programs, Key Findings, Outcomes, Target Groups, Strengths, and Limitations

SEL Program (Author)	Key Findings	Outcomes	Target Group	Strengths	Limitations
You, Me and the Little Monsters (Pollak et al., 2024)	Improved peer connectedness, emotional regulation, and social-emotional skills.	Enhanced emotional competencies.	General student population, with more benefits for boys.	Long-term improvement in social skills and student happiness.	Improvements in classroom climate and behavior over time.
MindUP (Hai et al., 2021)	Improved passive on-task behaviors, delayed effects on attention regulation.	Improved emotional regulation and on-task behavior.	General student population.	Long-term benefits, particularly for attention regulation.	Active behaviors decreased.
SPARK Child Mentoring Program (Green et al., 2021)	Improved emotional regulation, communication, problem-solving, and resilience.	Positive impacts on emotional regulation and communication.	Disadvantaged students.	Significant improvements in emotional competencies and resilience.	No mention of academic outcomes.
Incredible Years® Teacher Classroom Management (IY-TCM) (Gaspar et al., 2023)	Improved communication and behavior regulation.	Positive impact on students with behavioral challenges.	Students with behavioral challenges.	Enhanced classroom behavior when implemented by teachers.	Limited assessment process.

SEL Program (Author)	Key Findings	Outcomes	Target Group	Strengths	Limitations
Positive Action (PA) (Snyder et al., 2012)	Improved school climate, safety, and student well- being.	Enhanced school environment.	General student population.	Positive effects on school climate and learning environment.	No academic outcome results mentioned.
Diario della Salute (My Health Diary) (Allara et al., 2019)	Improved emotional competence, unintended negative outcomes like increased psychosomatic complaints.	Mixed results in emotional competence.	General student population.	Emotional competence improved.	Unintended negative outcomes (e.g., psychosomatic complaints).
Second Step (Top et al., 2016)	Reduced problem behaviors, improved academic performance in high-need schools.	Decrease in problem behaviors, and improved academic outcomes.	High-need schools.	Improved academic performance and behavior.	No mention of long-term effects.
RULER (Rivers et al., 2013; Cipriano et al., 2019)	Improved classroom emotional climate and teacher-student interactions.	Improved emotional climate and engagement.	At-risk students.	Enhanced student engagement and conduct.	No significant academic improvements.
Conscious Discipline (Anderson et al., 2020)	Positive influence on classroom quality and executive function skills.	Improved classroom quality and executive function skills.	General student population.	Positive impact on classroom behavior and executive functions.	No impact on academic skills.

SEL Program (Author)	Key Findings	Outcomes	Target Group	Strengths	Limitations
REDI (Head Start) (Nix et al., 2016)	Improved social competence, aggression reduction, and teacher-student relationships.	Long-term improvements in social-emotional development.	Head Start children.	Long-term positive outcomes in social competence.	No identification of effective program components.
MBSEL (Bakosh et al., 2016)	Improved academic performance and classroom behavior.	Positive impact on behavior and performance.	General student population.	Scalable and teacher-independent program.	Small effect size and lack of long-term data.
Strong Kids (Harlacher and Merrell, 2010)	Improved SEL knowledge and skills, sustained benefits.	Increased SEL competencies.	General student population, especially at-risk students.	Sustained SEL skills improvement.	Limited sample size and measurement concerns.

Notably, the You, Me and the Little Monsters program (Pollak et al., 2024) and the MindUP program (Hai et al., 2021) demonstrated significant improvements in peer connectedness, emotional regulation, and overall social-emotional skills. These findings support the notion that SEL interventions contribute positively to the social-emotional development of students. Similarly, the SPARK Child Mentoring Program (Green et al., 2021) and the Incredible Years® Teacher Classroom Management (IY-TCM) program (Gaspar et al., 2023) were particularly effective in improving emotional regulation, communication, and behavior, especially among students with behavioral challenges. These programs, when implemented by teachers, can potentially enhance classroom behavior, offering long-term benefits in student conduct. In terms of school climate, the Positive Action program (Snyder et al., 2012) was linked to enhanced school climate, safety, and student well-being, which in turn fostered a more positive learning environment. However, Diario della Salute (My Health Diary), as evaluated by Allara et al. (2019), revealed mixed results, with improvements in emotional competence but also unintended negative outcomes, such as an increase in psychosomatic complaints, indicating that careful implementation is critical to the success of SEL interventions.

Other studies further underscore the positive influence of SEL programs, although some limitations were noted. For example, Pollak et al. (2024) reported that SEL programs not only contributed to the maintenance of social skills and student happiness but also showed that boys benefited more than girls. However, improvements in classroom climate and behavior were observed over time, suggesting delayed effects. Similarly, Hai et al. (2021) found that the MindUP program was effective in improving passive on-task behaviors, with delayed effects indicating potential long-term benefits in attention regulation. Green et al. (2021) demonstrated that the SPARK program

improved communication, problem-solving, emotional regulation, and resilience, with particularly positive impacts on disadvantaged students. Gaspar et al. (2023) highlighted the success of universal SEL programs in enhancing socio-emotional competencies, particularly for students with challenging behaviors, despite noting limitations in the assessment process. Snyder et al. (2012) found that implementing the SEL program Positive Action (PA) significantly enhanced school quality, especially in underperforming schools, with long-term positive effects on both academic and behavioral outcomes. However, Top et al. (2016) identified that the Second Step program reduced problem behaviors and improved academic performance, particularly in schools with higher needs, suggesting that SEL programs may be particularly beneficial in these contexts.

Further evidence from Lin et al. (2022) showed that students in a collaborative SEL program experienced improved peer social acceptance and reduced aggression, although no significant increase in social competence was reported through self-report surveys. Anderson et al. (2020) noted that teacher fidelity to the Conscious Discipline program positively influenced classroom quality and executive function skills, but did not show a relationship with academic skills. Wallender et al. (2020), on the other hand, observed no significant growth in SEL skills post-implementation, suggesting that informal SEL strategies may be as effective as formal curricula, although further research is necessary to refine assessment methods. While many studies emphasize the importance of SEL in fostering emotional and social growth, they also caution about measurement challenges and the need for sustained implementation.

Several studies have reported long-term benefits of SEL interventions. Nix et al. (2016) demonstrated that children in the Head Start REDI program experienced

improvements in social competence, aggression reduction, and teacher-student relationships, contributing to sustained positive outcomes throughout elementary school. However, the study did not identify which specific components of the intervention were most effective. Schultz et al. (2011) found that social skills lessons improved social behaviors and reduced emotional distress, though the study's small sample size and lack of a control group limited its conclusiveness. Caldarella et al. (2009) reported that a pro-social behavior curriculum was especially beneficial for at-risk students, but it did not significantly address externalizing behaviors like aggression. Meyers and Hickey (2014) called for further research into the broader effects of SEL, noting that while SEL interventions could enhance school climate and peer interactions, challenges remained in measuring systemic impacts.

In a more practical context, Bakosh et al. (2016) found that the Mindful-based Social and Emotional Learning (MBSEL) program led to improvements in academic performance and classroom behavior, with the added advantage of being easily scalable and teacher-independent. However, the small effect size and lack of long-term data warranted further investigation. Rivers et al. (2013) examined the RULER program, which improved the classroom emotional climate and teacher-student interactions, although its long-term effects and impact on student perceptions were inconclusive. Cipriano et al. (2019) found that RULER improved student engagement and conduct, particularly for at-risk students, though no significant academic improvements were observed. Harlacher and Merrell (2010) showed that the Strong Kids curriculum improved SEL knowledge and skills, with sustained benefits, but their study was limited by a small, homogenous sample and concerns about measurement tool reliability.

Collectively, these studies support the effectiveness of SEL programs in promoting emotional and social development, particularly among at-risk populations, while emphasizing the need for more rigorous research to understand long-term effects and the mechanisms of impact.

A range of research designs was employed across the studies, each providing distinct insights into the effectiveness of social-emotional learning (SEL) interventions. Green et al. (2021) and Nix et al. (2016) utilized randomized controlled trials (RCTs), offering robust causal evidence for SEL program impacts. However, concerns about sample homogeneity and the limited settings of these studies raised questions regarding the generalizability of their findings. For example, Green et al. (2021) conducted research in Title 1 public elementary schools with grades 4 and 5, measuring both classroom behavior and academic performance through the SPARK program. Likewise, Nix et al. (2016) implemented the Head Start REDI program in preschool settings, integrating SEL with existing curricula and assessing both classroom behavior and academic performance. Despite the strong evidence provided by RCTs, their findings may not be universally applicable to more diverse educational settings.

In contrast, Allara et al. (2019) and Schultz et al. (2011) applied quasi-experimental designs, offering practical insights but lacking randomization, thereby limiting definitive causal inferences. Allara et al. (2019) examined a schoolwide "My Health Diary" program for 12 to 13-year-old students across socioeconomically and demographically diverse schools in Italy, measuring behavioral outcomes. Meanwhile, Schultz et al. (2011) evaluated the Connecting with Others program in private preschool settings, assessing general classroom behavior. Although random assignment was

absent in these studies, they provided valuable insights into SEL applications in real-world settings, highlighting both implementation challenges and successes.

Other investigations, including those by Hai et al. (2021) and Harlacher & Merrell (2010), utilized smaller sample sizes or case-based designs, allowing for in-depth exploration of specific contexts but limiting the generalizability of their findings. Hai et al. (2021) assessed the MindUP program (grades 3-5) in public comprehensive schools, measuring classroom behavior, while Harlacher & Merrell (2010) examined the Strong Kids program in elementary schools, evaluating both classroom behavior and academic performance. These studies underscored the importance of consistent and high-quality program delivery as a critical factor for success. Notably, Nix et al. (2016) emphasized that high fidelity in program delivery yielded positive outcomes. Similarly, Cipriano et al. (2019) and Wallender et al. (2020) observed that inconsistent delivery of SEL programs, such as RULER in Catholic schools and Second Step in rural schools, weakened their effectiveness, highlighting the necessity of fidelity in SEL implementation.

While extensive research supports the benefits of Social-Emotional Learning (SEL) programs, significant variations in findings raise concerns regarding their overall effectiveness. Numerous studies report improvements in emotional regulation, peer relationships, and classroom behaviors, yet inconsistencies and unintended negative consequences have also emerged.

Pollak et al. (2024) and Hai et al. (2021) both documented positive changes in students' emotional and social skills, with Pollak et al. noting that boys exhibited greater benefits than girls. However, these studies also indicated delayed effects, such as improvements in classroom climate and behavior that required time to manifest. This

raises concerns about the sustainability of SEL outcomes, particularly given potential disruptions such as grade transitions. Similarly, Hai et al. (2021) found that while the MindUP program enhanced passive on-task behavior, it had minimal effects on active classroom participation, suggesting that emotional regulation improvements do not always translate into greater engagement.

Concerns about broader effects also emerged in some studies. Allara et al. (2019) observed an increase in psychosomatic complaints among participants, despite noted improvements in emotional competence. This finding underscores the necessity of careful program design to prevent unintended negative consequences. Likewise, Green et al. (2021) cautioned against overestimating the long-term effectiveness of SEL interventions, despite their positive impacts on communication, problem-solving, and resilience, particularly among disadvantaged students.

The relationship between SEL interventions and academic achievement remains a key area of debate. While enhancements in social-emotional competencies and classroom behavior are well-documented, their direct influence on academic performance is less clear. Cipriano et al. (2019) and Wallender et al. (2020) found that SEL programs improved student engagement and conduct, yet academic outcomes did not show corresponding improvements. Specifically, Cipriano et al. (2019) reported that while the RULER program fostered student engagement, it failed to yield measurable academic progress, suggesting that SEL benefits may not always extend to academic performance.

Context plays a pivotal role in determining SEL program effectiveness. Top et al. (2016) found that the Second Step program was particularly effective in high-need schools, where it not only reduced problem behaviors but also enhanced academic

outcomes. Similarly, Anderson et al. (2020) noted that teacher fidelity to the Conscious Discipline program improved classroom behavior and executive function, though it did not significantly impact academic skills. These findings indicate that SEL interventions should be designed to address both emotional and academic outcomes comprehensively.

The collective findings emphasize the need for careful consideration of implementation fidelity, contextual adaptation, and a balanced approach to emotional and academic outcomes. Figure 11 illustrates a conceptual representation of SEL program implementation outcomes. Despite their potential benefits, SEL programs require thoughtful design to mitigate unintended consequences and ensure lasting effectiveness. The varied results across different studies highlight the necessity for further research to refine SEL interventions, particularly concerning their long-term impact and the mechanisms influencing student outcomes.



Figure 11: Conceptual Representation of SEL Program Outcomes

Tools and Procedures Used in Evaluating SEL Effectiveness

Evaluating the effectiveness of social-emotional learning (SEL) programs across the reviewed studies reveals important strengths and limitations in current assessment practices. The studies rely on a wide range of measurement tools, grouped into four broad categories: self-report questionnaires, teacher-reported ratings, observational tools, and academic performance measures. Although this diversity allows researchers to capture multiple dimensions of SEL outcomes, it also introduces variability in terms of methodological rigor, objectivity, and sensitivity to change. Some tools focus heavily on subjective perceptions, while others offer more objective behavioral observations or academic data. This variability impacts how confidently one can attribute observed changes to the SEL interventions. Self-report questionnaires, such as the EPOCH Measure of Adolescent Wellbeing and the Social Skills Rating System (SSRS), provide direct access to students' perceptions of their social and emotional skills. They are particularly useful for capturing internal states like optimism, perseverance, or perceived social connectedness. However, self-report measures are inherently susceptible to biases such as social desirability and inaccurate self-assessment, which can lead to overestimations of program success. Instruments like the Aggression Scales and the Self-Report Checklist for Social and Learning Behavior expand the range of behaviors assessed but still depend on students' self-awareness and honesty. On the other hand, teacher-reported rating scales, such as the Strengths and Difficulties Questionnaire (SDQ) and the Teacher Observation of Classroom Adaptation–Revised (TOCA-R), offer an external perspective on students' emotional and behavioral adjustment. These tools are valuable for corroborating self-reported outcomes and for

identifying observable behaviors, such as prosocial actions or classroom adaptation. Nonetheless, teacher ratings are not immune to bias either; expectations, personal beliefs, and differing classroom management styles can all influence how behaviors are interpreted and reported. Instruments like the Prosocial Behavior Rating System (PBRs) and the Classroom Responsibility Climate Questionnaire are designed to measure positive social behaviors, yet they sometimes lack the depth needed to capture the complexity of social-emotional growth beyond observable actions. Furthermore, observational tools, notably the Direct Behavior Rating – Single Item Scales (DBR-SIS) and the Classroom Assessment Scoring System (CLASS), introduce a greater degree of objectivity by allowing researchers or trained observers to document real-time student behaviors and classroom interactions. These methods are well-suited for capturing dynamic changes in student behavior and emotional climate that may not be visible through static questionnaires. However, observational methods require significant resources, including time-intensive training and ongoing fidelity monitoring, which can limit their feasibility in large-scale evaluations. Lastly, academic performance measures, including GPA, quarterly grades, standardized tests, and executive function assessments e.g. The Minnesota Executive Function Scale (MEFS), provide an additional dimension by linking SEL interventions to academic and cognitive outcomes. While such measures address the growing demand for evidence that SEL enhances not just social competencies but also academic success, the direct attribution of academic gains to SEL programming remains complex. Academic performance is influenced by a multitude of factors beyond SEL, and improvements may not be immediately observable within the typical timeframe of many intervention studies. Table 14

organizes these tools by category, highlighting their specific purposes and the studies in which they were applied.

Table 14: Tools used in Evaluating SEL Effectiveness

Category	Tool	Purpose	Study
Self-Report Questionnaires	EPOCH Measure of Adolescent Wellbeing	Assesses five dimensions of adolescent wellbeing: Enthusiasm, Perseverance, Optimism, Connectedness, and Happiness (EPOCH); focuses on peer relationships.	Pollak et al. (2024)
	Social Skills Rating System (SSRS)	Evaluates students' social competencies, including cooperation, assertiveness, and self-control; assesses ability to navigate social interactions.	Gaspar et al. (2023)
	Aggression Scales	Measures physical and verbal aggression (e.g., arguing, teasing, hitting, pushing); evaluates reduction in aggressive tendencies over time.	Allara et al. (2019)
	Self-Report Checklist for Social and Learning Behavior	Examines students' social-emotional skills in relation to classroom learning and peer interactions.	Pollak et al. (2024)
Teacher-Reported Ratings	Strengths and Difficulties Questionnaire (SDQ)	Identifies emotional and behavioral difficulties (e.g., hyperactivity, conduct problems, emotional symptoms, peer problems, prosocial behavior).	Gaspar et al. (2023)
	Teacher Observation of Classroom Adaptation–Revised (TOCA-R)	Rates students' classroom behavior, emotional regulation, and adaptation to norms; focuses on aggression and oppositional behavior.	Nix et al. (2016)
	Prosocial Behavior Rating System (PBRS)	Measures frequency of prosocial behaviors (e.g., helping, empathy); evaluates positive social interactions fostered by SEL programs.	Top et al. (2016)

Category	Tool	Purpose	Study
	Classroom Responsibility Climate Questionnaire	Evaluates the influence of peer and teacher contributions on the overall classroom environment.	Pollak et al. (2024)
Observational Tools	Direct Behavior Rating – Single Item Scales (DBR-SIS)	Allows for continuous, real-time assessment of specific student behaviors (e.g., attention, cooperation) in classroom settings.	Hai et al. (2021)
	Classroom Assessment Scoring System (CLASS)	Evaluates teacher-student interactions and classroom climate across emotional, organizational, and instructional domains.	Rivers et al. (2013)
Academic Performance Measures	Grade Point Average (GPA)	Tracks changes in overall academic achievement before and after SEL interventions.	Top et al. (2016)
	Quarterly Grades	Tracks students’ subject-specific grades over time to monitor detailed academic improvements related to SEL interventions.	Bakosh et al. (2016)
	Standardized Academic Tests (e.g., Wally Problem Solving Test)	Measures students’ problem-solving and social competence skills using standardized assessments.	Gaspar et al. (2023)
	Executive Function and Cognitive Skills Assessments (e.g., MEFS)	Assesses cognitive abilities like working memory, impulse control, and cognitive flexibility to evaluate SEL’s impact on academic skills.	Anderson et al. (2020)

Methodological Qualities of the Studies

To assess the quality of the selected studies included in this systematic review, a structured and well-established framework was utilized. The methodological rigor of each study was evaluated using the CEC and MMAT quality assessment tools. The selected studies encompassed both quantitative and qualitative research. The following subsections describe the results of these evaluations.

Evaluation Results based on Council for Exceptional Children's (CEC) standards

This section presents the evaluation of the eighteen selected studies for the systematic review based on the quality indicators established by the Council for Exceptional Children (CEC). The analysis assesses the extent to which each study meets key methodological and reporting standards, ensuring the reliability and validity of their findings. The studies were evaluated across the eight quality indicators as detailed in the methodology. A detailed evaluation of all studies is provided in Appendix A, while Table 15 presents a structured summary of how each study performed across these eight quality indicators. The percentage for each indicator is calculated by summing all "yes" responses for that indicator and dividing by the product of the total number of studies and the number of questions under that indicator. Likewise, the percentage for each study across all indicators is determined by summing the total number of "yes" responses for that study and dividing by the total number of questions across all indicators. The entries in the table represent the number of "yes" responses under each indicator. The following subsections provide a detailed analysis of the studies based on each of these indicators. Figure 12 illustrates graphically the average of the % met of the quality indicators for all the selected studies, and Figure 13 illustrates the percentage of CEC quality indicators met by each study.

Table 15: Methodological Soundness by CEC Quality Indicators

Quality indicator	Pollak et al. (2024)	Hai et al. (2021)	Green et al. (2021)	Allara et al. (2019)	Gaspar et al. (2023)	Snyder et al. (2012)	Top et al. (2016)	Lin et al. (2022)	Anderson et al. (2020)	Wallender et al. (2020)	Nix et al. (2016)	Schultz et al. (2011)	Caldarella et al. (2009)	Meyers and Hickey (2014)	Bakosh et al. (2016)	Rivers et al. (2013)	Cipriano et al. (2019)	Harlacher and Merrell (2010)	Quality indicator met %
Context and setting	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	100
Participants	2/2	1/2	2/2	2/2	1/2	2/2	1/2	2/2	2/2	2/2	2/2	2/2	2/2	1/2	2/2	2/2	2/2	2/2	89
Intervention agent	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	100
Description of practice	1/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/2	1/2	2/2	1/2	2/2	2/2	2/2	2/2	2/2	2/2	89
Implementation fidelity	3/3	3/3	3/3	1/3	3/3	3/3	1/3	3/3	3/3	1/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	89
Internal validity	4/6	2/6	5/6	3/6	5/6	4/6	3/6	2/6	3/6	3/6	3/6	3/6	1/6	4/6	6/6	4/6	4/6	5/6	59
Dependent variables	6/6	6/6	6/6	4/6	6/6	6/6	6/6	6/6	6/6	4/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	6/6	96
Data analysis	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	100
Quality indicators met %	88	79	96	71	92	92	75	83	83	67	88	83	79	88	100	92	92	96	

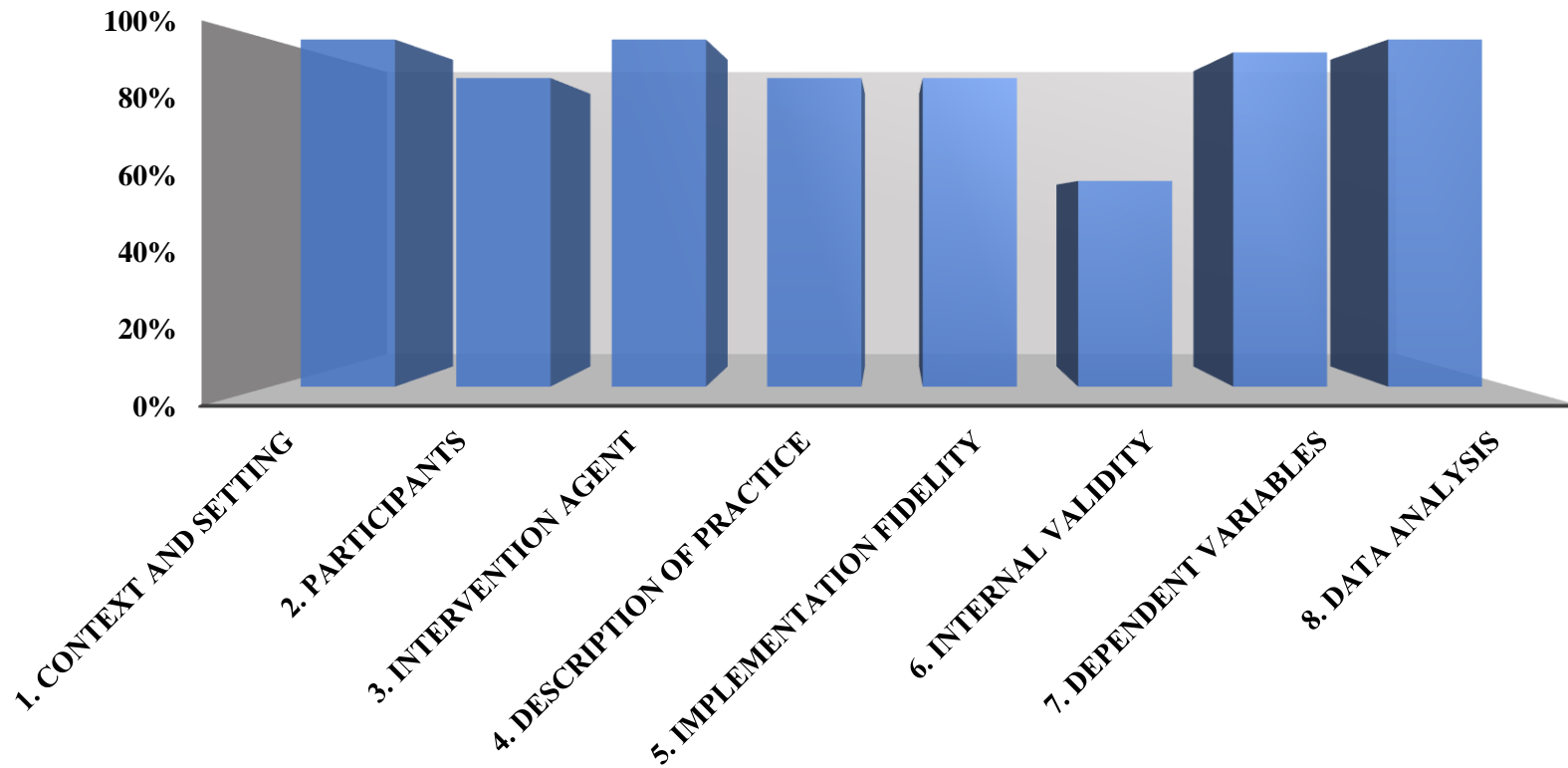


Figure 12: Methodological Soundness by Quality Indicators

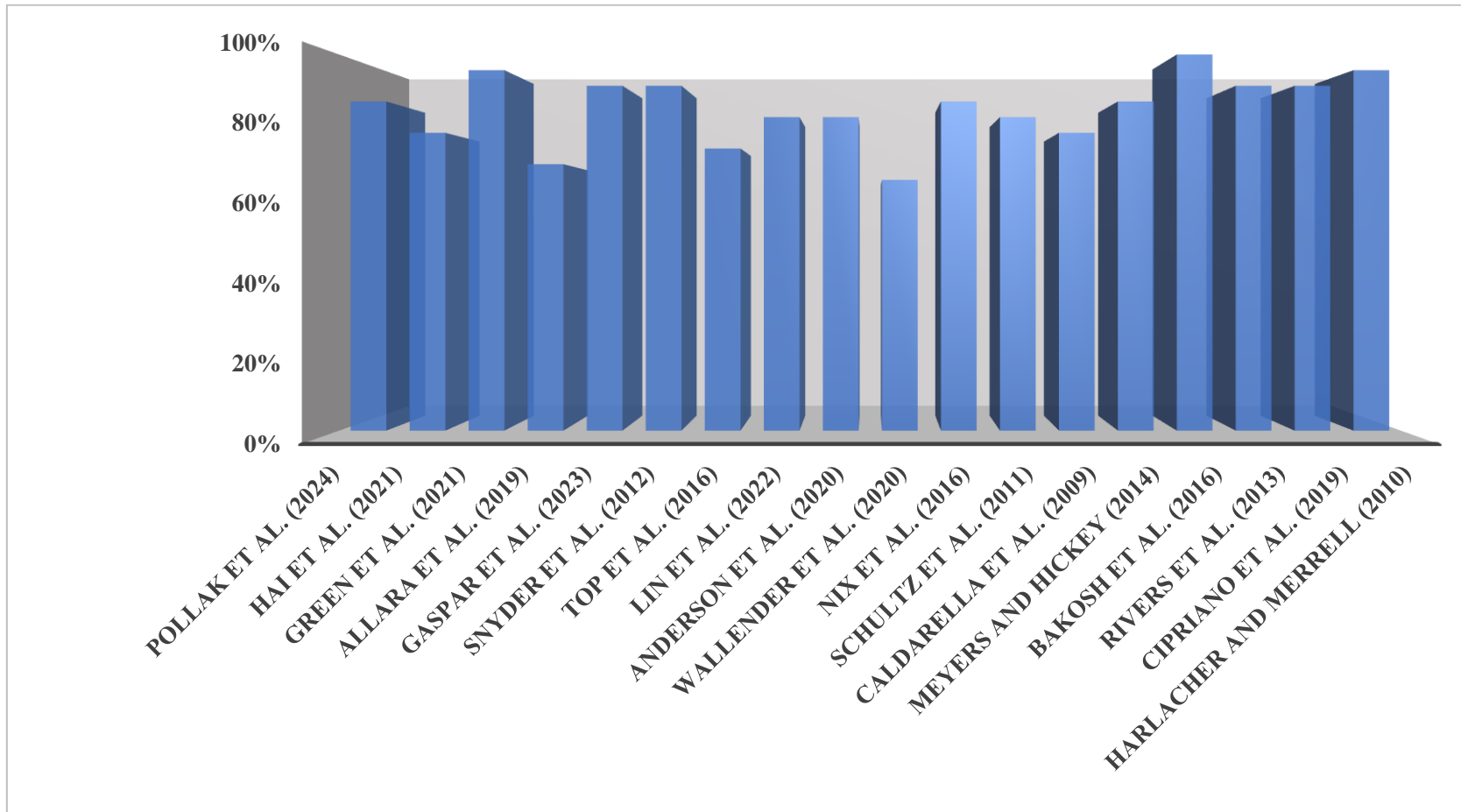


Figure 13: Percentage of CEC Quality Indicators Met by Each Study

Indicator 1: Context and Setting

All 18 studies met the quality indicator for context and setting (100%), demonstrating that each provided a clear and thorough description of the research environment. This level of detail ensures strong external validity, as it allows for a deeper understanding of the conditions under which the interventions were implemented, supporting the generalizability of findings to similar settings.

The studies varied in their geographical locations and educational settings but consistently described critical aspects such as school types, student demographics, socio-economic factors, and intervention environments. Several studies focused on school-based interventions within specific educational contexts. For instance, Pollak et al. (2024) examined the Austrian primary-to-secondary transition, detailing the school settings in which the intervention took place. Similarly, Hai et al. (2021) investigated the implementation of MindUP in general education classrooms for fifth-grade students, clearly outlining the classroom environment. Green et al. (2021) further emphasized student demographics and socio-economic backgrounds, enhancing the contextual understanding of their intervention. Some studies highlighted regional distinctions and cultural settings in their interventions. Allara et al. (2019) described its school-based intervention across Northern and Southern Italy, specifying the timeframe of implementation. Gaspar et al. (2023) focused on the Portuguese educational system, implementing IY®-TCM within preschools and primary schools under the *Academias Gulbenkian do Conhecimento* initiative. A few studies examined schools in the United States with diverse socio-economic and geographic contexts. Snyder et al. (2012) conducted research in Hawaii's public elementary schools, particularly those struggling with low test scores and a high percentage of students on free/reduced lunch, indicating

the importance of addressing educational equity. Top et al. (2016) described open-enrollment charter schools in Texas, while Lin et al. (2022) focused on fifth-grade classrooms in two public schools in the U.S., detailing their instructional methods and school demographics. Anderson et al. (2020) provided insight into preschool settings across the Midwest, examining the role of Conscious Discipline in executive function (EF) development.

Studies also explored rural and suburban settings. Wallender et al. (2020) examined Social and Emotional Learning (SEL) program implementation in a rural Midwestern school district, whereas Caldarella et al. (2009) conducted research in a suburban elementary school in Utah, detailing school demographics. Nix et al. (2016) explored the Head Start REDI program, detailing intervention settings in Head Start centers and follow-up in elementary schools. Other studies emphasized targeted school environments. Schultz et al. (2011) conducted research in a preschool at a family service center in Northeast Nebraska, focusing on low-income and at-risk families. Meyers and Hickey (2014) analyzed SEL interventions across school-based settings, considering their impact on individual and environmental factors. Additionally, Bakosh et al. (2016) examined the feasibility and effectiveness of an intervention in public elementary schools in suburban Chicago, ensuring clear articulation of its relevance to traditional school systems. Rivers et al. (2013) described their study's context within Catholic schools in Brooklyn and Queens, NY, detailing its implementation in fifth- and sixth-grade classrooms. Cipriano et al. (2019) also investigated a Catholic school district in the northeastern United States, analyzing the impact of the RULER intervention on a diverse student population. Finally, Harlacher and Merrell (2010)

outlined their study within a school setting, detailing geographic location and intervention timeframe (September–December).

Indicator 2: Participants

The studies reviewed encompass a wide range of participant groups, varying in age, educational settings, socioeconomic backgrounds, and the presence of specific learning difficulties or disabilities. While several studies focus on general student populations, others specifically examine students facing behavioral challenges, academic underperformance, or socioeconomic disadvantages, providing a nuanced understanding of how different factors influence educational outcomes. The participant age and grade level represent a significant variable across studies. Pollak et al. (2024) and Allara et al. (2019) highlight early adolescent populations, particularly those transitioning into secondary education, which presents unique academic and social challenges. Similarly, Green et al. (2021) and Top et al. (2016) explore upper elementary and middle school students, emphasizing the academic and social difficulties faced at these levels. In contrast, Schultz et al. (2011) focus on preschool-aged children, investigating developmental and environmental influences that shape early childhood education. This range of ages contributes to a broader understanding of how educational interventions might need to vary at different developmental stages.

In terms of demographics, several studies give special attention to the impact of socioeconomic background on educational outcomes. Nix et al. (2016) and Schultz et al. (2011) center on preschool children from low-income families, identifying economic disadvantage as a critical factor influencing educational development. Green et al. (2021) further investigate students from a Title 1 school, where a majority of the student population comes from low-income backgrounds. Cipriano et al. (2019) focus on

students identified as at risk for academic failure, thus selecting a sample directly linked to academic performance and intervention needs, allowing for an exploration of how socioeconomic status and risk factors shape educational trajectories. Ethnicity and language background also play a significant role in some studies, providing insights into the challenges faced by diverse student populations. Lin et al. (2022) report that 37% of the student population were English Language Learners (ELLs), and 14% had Individualized Education Programs (IEPs), highlighting the presence of language barriers and special educational needs within the sample. Harlacher and Merrell (2010) document a participant group that is predominantly White, with 84% of the sample reflecting limited ethnic diversity. These studies emphasize the importance of understanding the intersection of ethnicity, language, and educational needs in shaping student outcomes. The inclusion of special education and behavioral factors varies across studies. While many studies focus on general student populations, some explicitly address students with disabilities or learning difficulties. Schultz et al. (2011) is one of the few studies that reports 15% of participants as having documented disabilities, making it a rare example of research focusing on a well-defined special education population. Hai et al. (2021) distinguishes between general behavioral challenges and formally diagnosed disabilities, specifically excluding students in special education. Gaspar et al. (2023) and Snyder et al. (2012) include both teachers and students, with their focus extending to social-emotional learning and school climate rather than being limited to disability-related factors.

Finally, participant selection and sample size vary significantly across the reviewed studies. For instance, Allara et al. (2019) incorporates a large sample of 2,630 students, enabling robust statistical analysis of the findings, while Caldarella et al.

(2009) examines a much smaller sample of 26 second-grade students, allowing for a more in-depth qualitative exploration of the research topic. Rivers et al. (2013) features a large-scale study with 3,824 students across 62 schools, providing valuable insights into classroom climate on a broader scale. The inclusion of teacher participation in studies such as Snyder et al. (2012) and Rivers et al. (2013) further highlights the role educators play in shaping student outcomes, emphasizing the importance of considering both student and teacher perspectives in understanding educational dynamics.

The reviewed studies collectively offer a comprehensive assessment of participant characteristics, encompassing a range of sample sizes, demographic compositions, and targeted subgroups, including students with special needs, those from economically disadvantaged backgrounds, and those at risk of academic failure. These studies demonstrate notable methodological diversity in participant selection. Some employ broad inclusion parameters (e.g., Pollak et al., 2024; Top et al., 2016), while others focus on specific educational challenges (e.g., Hai et al., 2021; Nix et al., 2016). On average, 89% of the studies adequately define their target populations, with most studies providing sufficient participant-related information, which enhances the generalizability of their findings. The consistency in defining participant characteristics contributes to the reliability and methodological rigor of these studies, aligning with established research standards. The high average quality indicator score of 89% reinforces the robustness of the participant selection criteria, ensuring that the findings are based on well-defined and representative samples. This approach underscores the complexity of examining educational outcomes and the need for tailored interventions that address specific student needs, backgrounds, and contexts.

Indicator 3: Intervention

A critical component of effective intervention studies is the level of detail provided about the intervention itself. The ability to replicate and evaluate an intervention hinges on how well its structure, content, implementation procedures, and fidelity monitoring are described. In this analysis, all eighteen studies scored 100% on this indicator, demonstrating strong methodological rigor in documenting their respective interventions. Many studies provided extensive descriptions of structured social-emotional learning (SEL) programs, ensuring transparency in lesson content, program structure, and fidelity measures. For example, Pollak et al. (2024) detailed session content, objectives, and links to program materials for their SEL program, allowing for straightforward replication. Similarly, Hai et al. (2021) documented the MindUP program, outlining its lesson structure, teacher training, and fidelity monitoring, ensuring consistency in implementation. Some interventions were based on standardized curricula designed for schools. The Second Step curriculum, examined in Top et al. (2016) and Wallender et al. (2020), was thoroughly described in terms of duration, session content, and delivery mechanisms, ensuring clarity in its school-based application. Likewise, the Strong Start (Caldarella et al., 2009) and Strong Kids (Harlacher & Merrell, 2010) interventions were well-defined, detailing lesson plans, booster sessions, and fidelity checks. These comprehensive descriptions enable educators and practitioners to replicate the interventions effectively.

Other studies focused on specialized SEL approaches with distinct methodologies. Gaspar et al. (2023) documented the Incredible Years®– Teacher Classroom Management (IY-TCM) intervention, describing its training, structure, and implementation methods. Meanwhile, Bakosh et al. (2016) presented an audio-guided

mindful awareness training intervention that was fully automated, making it scalable without requiring expert trainers. Some interventions targeted early childhood development. The Head Start REDI intervention (Nix et al., 2016) provided detailed descriptions of curriculum components, professional development, and classroom support, reinforcing the importance of early SEL integration. Similarly, Snyder et al. (2012) documented the Positive Action (PA) program, outlining the training sessions, booster sessions, and implementation fidelity measures. Additionally, interventions incorporating teacher training and professional development were well-explained. Anderson et al. (2020) examined the Conscious Discipline program, highlighting its teacher training and fidelity measures, though the study noted that the intervention was implemented naturally rather than controlled by researchers. Cipriano et al. (2019) and Rivers et al. (2013) described the RULER program, providing structured details on lesson frequency, teacher training, and content to facilitate replication in classroom settings.

Indicator 4: Description of Practice

The studies reviewed under this indicator were evaluated based on the appropriateness and rigor of their research design in assessing the effectiveness of interventions. The average score across studies for this indicator was 89%, with variations depending on the level of methodological rigor.

Pollak et al. (2024) scored lower (50%) due to the use of a clustered waitlist-control evaluation design without randomization in group assignments, which affects the internal validity and the strength of comparisons. Similarly, Anderson et al. (2020) and Wallender et al. (2020) received lower scores (50%) due to limitations in their study designs, such as the absence of a control group, which reduces their ability to

establish causal relationships. In contrast, studies employing randomized controlled trials (RCTs), such as Green et al. (2021), Nix et al. (2016), Rivers et al. (2013), and Cipriano et al. (2019), received full scores (100%) as RCTs are considered the gold standard in intervention research. These studies ensured strong internal validity by randomly assigning participants to treatment and control groups, thereby minimizing selection bias.

Several studies employed quasi-experimental designs, such as Allara et al. (2019), Bakosh et al. (2016), Gaspar et al. (2023), Lin et al. (2022), and Top et al. (2016). These studies received full scores (100%) as their methodologies were deemed appropriate for real-world settings despite lacking full randomization. For instance, Allara et al. (2019) used a quasi-experimental cluster-controlled design with matched schools, ensuring comparability between intervention and control groups. Similarly, Gaspar et al. (2023) used a pre-post intervention design with ANOVA and moderation analyses, which allowed for a robust evaluation of SEL program effects. Snyder et al. (2012) demonstrated high methodological rigor by conducting a matched-pair, cluster-randomized controlled trial, securing a 100% score. Harlacher and Merrell (2010) also employed a quasi-experimental design with a wait-list control group, where teachers were randomly assigned, though individual students remained in pre-existing classrooms. While this design was appropriate for the educational setting, it limited full randomization at the individual level.

Some studies, such as that of Meyers and Hickey (2014), provided a review of multiple SEL programs rather than an empirical study. Their inclusion of both experimental and quasi-experimental research contributed to understanding SEL interventions, warranting a high score (100%) despite methodological variability.

Finally, Anderson et al. (2020) was rated lower as it used a correlational design rather than an experimental or quasi-experimental approach, making it less rigorous in establishing causal effects of the Conscious Discipline program. Similarly, Schultz et al. (2011) examined pre/post-test results but lacked a control group, limiting causal inference.

Indicator 5: Implementation Fidelity

Implementation fidelity, which refers to the extent to which an intervention is delivered as intended, plays a crucial role in determining the validity and reliability of research findings. Across the reviewed studies, fidelity scores varied significantly, with an overall average of 89%, indicating strong adherence to standardized measurement protocols. However, some studies demonstrated full fidelity (100%), while others reported substantially lower fidelity (33%), raising concerns about methodological inconsistencies, psychometric validation, and the reliability of reported outcomes. A key characteristic of high-fidelity studies was their consistent use of validated assessment tools, clear implementation procedures, and rigorous methodological frameworks. Studies such as those by Pollak et al. (2024), Hai et al. (2021), and Gaspar et al. (2023) exemplified strong implementation fidelity by incorporating multiple validated measures to assess social-emotional skills, behavioral engagement, and peer interactions. The reliability of these studies was further reinforced by their reliance on standardized data collection methods, such as repeated measurements and longitudinal tracking, which reduced the likelihood of measurement error or random fluctuations influencing outcomes. In particular, Green et al. (2021) and Lin et al. (2022) ensured fidelity by employing psychometrically sound instruments like the 3PI, CDP-Child Version, and DERS-SF, reporting internal consistency values that confirmed the

reliability of their findings. Additionally, studies such as Nix et al. (2016) and Schultz et al. (2011) demonstrated a commitment to fidelity by incorporating multi-source data collection approaches, including teacher ratings, classroom observations, and archival school data, thereby enhancing the robustness of their interventions.

In contrast, studies with lower implementation fidelity raised significant concerns regarding measurement validity and procedural inconsistencies. For instance, Allara et al. (2019), despite using recognized instruments like the HBSC Symptom Checklist and Aggression Scale, reported an unexpected reduction in subjective well-being among participants. This unexpected decline in subjective well-being raises concerns about whether the intervention was implemented as intended, suggesting that external factors may have influenced the results or that inconsistencies in data collection and analysis affected the interpretation of findings. Similarly, Wallender et al. (2020) relied heavily on self-reported surveys without psychometric validation, introducing the risk of response bias and reducing confidence in the study's conclusions. The absence of established reliability coefficients weakens the legitimacy of its findings, particularly when compared to high-fidelity studies that incorporated validated multi-dimensional assessments. Another study that struggled with implementation fidelity was Top et al. (2016), which measured student outcomes using GPA and observed behaviors but failed to provide sufficient documentation on the reliability and validity of these assessments. Without clear psychometric justification, it remains uncertain whether the behavioral measures effectively captured the intended constructs, raising concerns about measurement error and potential biases in data interpretation. These issues highlight a common weakness in lower-fidelity studies, a reliance on subjective, unvalidated instruments that fail to ensure consistency across different implementation contexts.

Despite the generally high fidelity observed across most studies, discrepancies in methodological rigor underline the importance of employing robust assessment strategies. The strongest studies not only utilized validated tools but also incorporated multiple data sources, repeated measurements, and clearly defined intervention protocols to ensure reliability. In contrast, studies with weaker fidelity exhibited shortcomings such as inconsistencies in measurement interpretation, reliance on unvalidated self-report instruments, and an absence of documented psychometric properties. These findings emphasize the critical role of methodological rigor in ensuring that social-emotional learning interventions are both reliable and generalizable. In conclusion, while most studies demonstrated strong implementation fidelity, a small subset fell short due to methodological limitations that undermined their reliability. The comparison between high- and low-fidelity studies underscores the necessity of standardized, validated assessment measures and consistent implementation procedures. Without these elements, research findings risk being compromised by measurement inconsistencies, reducing the validity of conclusions drawn from social-emotional learning interventions. Addressing these methodological gaps is essential for advancing the field and ensuring that intervention outcomes accurately reflect their intended impact.

Indicator 6: Internal Validity

The internal validity of the studies included in this systematic review presents a varied framework, with many studies exhibiting moderate to high validity, while others face substantial limitations that could undermine the strength of the research findings. A comparison of these studies reveals that many demonstrate solid methodological frameworks, while others are hindered by issues such as lack of randomization, self-

selection biases, and sample size constraints. The internal validity scores of these studies range from 17% to 100%, reflecting the diversity in the rigor of their methodologies.

Several studies, including Cipriano et al. (2019) (100%), Lin et al. (2022) (83%), and Green et al. (2021) (83%), stand out for their relatively strong internal validity. These studies employed rigorous designs, such as appropriate control groups, randomization, and robust statistical analyses, all of which bolstered their internal validity. Cipriano et al. (2019), despite being geographically specific, provided valuable insights that could be generalized to similar contexts due to its sound methodological approach. Green et al. (2021), though limited to one school and demographic, still provided reliable evidence that could be applied to similar settings. Similarly, Lin et al. (2022) contributed to the literature by maintaining methodological rigor despite a relatively small sample, lending confidence to the causality of its findings.

In contrast, several studies scored lower on the internal validity scale, falling into the moderate range primarily due to methodological constraints such as non-randomized assignments and self-selection biases. Pollak et al. (2024), Hai et al. (2021), and Allara et al. (2019) demonstrated that, while their findings are still valuable and applicable to certain educational settings, their internal validity was compromised due to the absence of randomized assignments or voluntary participation. Pollak et al. (2024), with a score of 67%, produced results that are applicable to similar settings, but the non-random assignment of control and intervention groups weakens the causal inferences that can be drawn from the study. Similarly, Hai et al. (2021) (33%), which focused on a specific group of students with behavioral challenges, faced generalizability issues, limiting the broader application of their findings. Allara et al.

(2019), with its voluntary participation of schools and self-selection into intervention or control groups, reduced the confidence in drawing causal relationships and scored 50% on this indicator.

Some studies, like Top et al. (2016) and Wallender et al. (2020), scored 50% on this indicator, encountered similar challenges related to non-randomized samples and self-selection, weakening their internal validity. While these studies provided valuable insights within the specific contexts in which they were conducted, the lack of rigorous control mechanisms meant that causal claims could not be definitively established. These studies highlight a recurring issue across several reviewed studies, where methodological constraints hindered the establishment of stronger causal links between interventions and outcomes. Finally, a small subset of studies encountered significant challenges with internal validity. Schultz et al. (2011) and Caldarella et al. (2009) had substantial limitations, such as small sample sizes and the absence of control groups, which severely hindered their internal validity scores. Schultz et al. (2011), with a score of just 17%, stands out as one of the weakest in terms of internal validity, primarily due to its small sample size, single setting, and lack of a control group. These studies underscore the importance of robust experimental designs to ensure the reliability of findings, particularly when making broad claims about the effectiveness of interventions.

Indicator 7: Outcome measures/Dependent variables

The selected studies for the systematic review were assessed against the quality indicator for outcome measures and dependent variables. The assessment shows that all eighteen studies demonstrate a high level of consistency in meeting this quality indicator. Sixteen out of the eighteen studies scored 100% on this indicator, reflecting a

strong focus on clear, measurable, and relevant outcomes. Only two studies, Allara et al. (2019) and Wallender et al. (2020), scored 67% due to unintended outcomes or issues with the validity of self-reporting. While the majority of studies excelled in this area, there were minor gaps in how some measured or presented their outcome variables. Nearly all studies presented well-defined and appropriate outcome measures, focusing on critical aspects such as social-emotional skills, peer relationships, and academic performance, which are essential for evaluating the impact of educational interventions. For example, Pollak et al. (2024) effectively measured the intervention's impact on social skills, peer connectedness, and happiness. Similarly, Gaspar et al. (2023) demonstrated significant improvements in social-emotional skills and reductions in problem behavior, while Snyder et al. (2012) assessed the broader impact on school quality, incorporating input from multiple respondent groups like teachers, parents, and students.

Most of the studies used robust statistical analyses to validate their findings. For instance, Green et al. (2021) showed statistically significant improvements in knowledge and skills, reinforcing the intervention's effectiveness. Likewise, Lin et al. (2022) combined both quantitative and qualitative data, presenting a comprehensive picture of improved social acceptance and reduced aggression among students. These studies, among others, ensured that their reported outcomes were statistically sound and well-supported. Additionally, many studies provided a well-rounded view of their findings by addressing both expected and unexpected outcomes. Hai et al. (2021), for instance, discussed anticipated results as well as unexpected ones, offering insight into the broader implications of their intervention and highlighting areas for future research.

While most studies reported positive outcomes, a few raised concerns about negative or unintended effects. Allara et al. (2019), for example, found a negative impact on well-being, suggesting potential induced effects. This requires further exploration to understand and mitigate such negative outcomes. Wallender et al. (2020) faced issues with self-reporting biases, which may have led to misinterpretation of the intervention's effects, particularly regarding perceived negative outcomes. A few of the reviewed studies acknowledged limitations in their design, which could have impacted the clarity and generalizability of their outcome measures. Schultz et al. (2011), for instance, noted the lack of a control group, which made it difficult to draw definitive conclusions about the intervention's overall effectiveness. Similarly, Caldarella et al. (2009) discussed study design limitations and the social validity ratings, suggesting that while improvements were observed, unaccounted external factors might have influenced the results.

Indicator 8: Data Analysis

The reviewed studies demonstrate robust and varied approaches to data analysis, employing both traditional and advanced statistical techniques to evaluate intervention outcomes. All the reviewed studies scored 100% on this indicator, reflecting a high level of statistical rigor across diverse research designs. A common strength across all studies is the use of multiple statistical methods, ensuring the reliability and depth of the analysis, with each study meeting the Data Analysis quality indicator.

One prominent approach is the use of multilevel models, with studies such as Top et al. (2016) and Rivers et al. (2013) applying advanced techniques like longitudinal growth models and multilevel modeling, respectively. These methods are especially suited for handling hierarchical data structures, such as classrooms within

schools, allowing for more precise estimations of intervention effects while accounting for inherent dependencies within clustered data. Rivers et al. (2013) explicitly highlights the appropriateness of this approach to address the complexities of classroom-level data, which contributes to the overall rigor of the study. Similarly, Hai et al. (2021) uses multilevel analysis for single-case studies. While effective for individual-level data, this approach raises concerns regarding generalizability due to its narrower scope.

Another prevalent and effective approach is the use of Analysis of Variance (ANOVA) and regression analyses, as seen in studies like Gaspar et al. (2023) and Snyder et al. (2012). These techniques allow for comprehensive comparisons of pre- and post-intervention effects and the identification of moderating variables. Gaspar et al. (2023) utilizes ANOVA to assess treatment effects, while their incorporation of moderation analysis adds value by exploring how different factors influence intervention success, providing a deeper understanding of the data. In contrast, Snyder et al. (2012) employs random-intercept growth curve models, offering a nuanced approach to understanding changes over time and how these differ across individuals, thus enhancing the longitudinal analysis of intervention impacts.

Additionally, some studies emphasize controlling for confounding factors. Allara et al. (2019) stands out for accounting for clustering, socioeconomic confounders, and baseline levels in its statistical analyses. By applying Chi-squared tests, t-tests, and mixed-effects models, this study ensures the analysis is not biased by external variables. This is particularly important in education research, where unaddressed confounders can skew results. Similarly, Bakosh et al. (2016) applies

hierarchical multiple regression, which effectively controls for baseline differences and examines complex relationships between intervention variables and student outcomes.

While advanced methods such as generalized linear modeling (GLM), used by Lin et al. (2022), are advantageous for handling diverse data distributions, they may not always be intuitive for those without a strong statistical background. Lin et al. (2022) offers a robust statistical approach, but one could argue that its technical nature might limit accessibility or broader applicability, especially in educational settings. The exploratory factor analysis (EFA) used by Anderson et al. (2020) similarly provides a detailed look at the relationships between variables, but its complexity may make it less accessible to practitioners compared to simpler methods like t-tests or ANOVA, as seen in studies like Schultz et al. (2011), where paired t-tests were used effectively. The application of paired t-tests, dependent t-tests, and effect size calculations in studies like Schultz et al. (2011) and Caldarella et al. (2009) provides clear, interpretable results, especially in smaller sample settings where more complex models might be less applicable. These studies demonstrate that simpler statistical methods can still yield valuable insights when the data structure and study design warrant such approaches.

CEC Assessment Conclusions

Overall, these findings indicate that all studies effectively contextualized their interventions, ensuring clarity in describing school settings, socio-economic factors, and relevant regional characteristics. This consistent attention to context strengthens the applicability of the results across different educational environments. Additionally, the selected studies exemplify high-quality intervention reporting, allowing for transparency, reproducibility, and effective application in educational and psychological settings. The inclusion of program materials, training details, and implementation

procedures ensures that these interventions can be adapted and scaled for broader use. Moreover, the studies that used randomized control trials (RCTs) and well-controlled quasi-experimental designs received the highest ratings on the description of practice indicator, while those with correlational, uncontrolled, or weaker experimental designs scored lower. The findings emphasize the importance of methodological rigor in evaluating social-emotional learning (SEL) programs, as stronger designs enable more reliable conclusions about intervention effectiveness. While many studies demonstrated strong internal validity, contributing valuable insights to the field (e.g., Cipriano et al. (2019) with 100%, Green et al. (2021) with 83%, and Lin et al. (2022) with 83%), a significant number faced limitations that affected their ability to provide definitive causal evidence. The common challenges of lack of randomization, self-selection biases, and sample size issues highlight the need for more rigorous study designs in future research. Despite these limitations, the majority of studies provided reliable evidence within their specific contexts, underscoring the importance of context and methodology in interpreting findings on educational interventions. The outcome measures and dependent variables used in these studies were of high quality, with the majority providing clear, statistically supported results that demonstrated the interventions' effectiveness. The studies were generally well-aligned with the quality indicator, offering reliable insights into the outcomes. However, Allara et al. (2019) and Wallender et al. (2020) fell short of fully meeting the indicator, with concerns about unintended negative effects and methodological limitations. Despite these exceptions, the overwhelming majority of studies effectively measured the key outcomes and contributed valuable insights into the impact of educational interventions. Lastly, the range of analytical methods employed across the reviewed studies aligns solidly with

the Data Analysis indicator, ensuring both the appropriateness and complexity of analyses. The major strength lies in the integration of advanced statistical techniques, which enhance the studies' ability to control for confounding factors and assess the nuances of intervention impacts. However, some studies, while employing sophisticated methods, could benefit from additional clarity on how results can be generalized beyond specific contexts (e.g., single-case studies or studies with small sample sizes). Despite this, the majority of the studies meet the quality standard for data analysis, as evidenced by their comprehensive use of multiple statistical methods, control for potential biases, and appropriate handling of complex data structures.

Mixed Method Appraisal Tool Findings

The selected studies were first categorized based on their design approach in accordance with the Mixed Methods Appraisal Tool (MMAT) categories. Table 16 summarizes the distribution of the design approach of the various studies along with the MMAT criteria met as a percentage. The distribution of the studies' design is illustrated in Figure 14, whereas Figure 15 presents a bar chart illustrating the percentage of MMAT criteria met by the selected studies. The methodological quality of the studies, assessed using the MMAT, ranges from 82% to 100%, with most studies scoring above 85%, indicating a generally high methodological quality. The highest score (100%) was observed in the study by Meyers and Hickey (2014), while the lowest (82%) was recorded by Wallender et al. (2020). The majority of the studies met at least 88% of the MMAT criteria, reflecting a strong adherence to methodological rigor in the selected research.

Table 16: Selected Studies Categories as per MMAT 2018 guidelines

S. N.	Author / Year	Study Design	MMAT Criteria Met (%)
1	Pollak et al. (2024)	Quantitative Nonrandomized	84%
2	Hai et al. (2021)	Quantitative Nonrandomized	84%
3	Green et al. (2021)	Quantitative – Randomized Controlled Trials (RCTs)	90%
4	Allara et al. (2019)	Quantitative Nonrandomized	96%
5	Gaspar et al. (2023)	Quantitative Nonrandomized	86%
6	Snyder et al. (2012)	Quantitative – (RCTs)	88%
7	Top et al. (2016)	Quantitative Nonrandomized	94%
8	Lin et al. (2022)	Quantitative Nonrandomized	92%
9	Anderson et. al. (2020)	Quantitative – Descriptive	92%
10	Wallender et al. (2020)	Quantitative – Descriptive	82%
11	Nix et al. (2016)	Quantitative –(RCTs)	94%
12	Schultz et al. (2011)	Quantitative – Descriptive	96%
13	Caldarella et al. (2009)	Quantitative Nonrandomized	84%
14	Meyers and Hickey (2014)	Qualitative	100%
15	Bakosh et al. (2016)	Quantitative Nonrandomized	92%
16	Rivers et al. (2013)	Quantitative – (RCTs)	88%
17	Cipriano et al. (2019)	Quantitative Nonrandomized	92%
18	Harlacher and Merrell (2010)	Quantitative Nonrandomized	88%

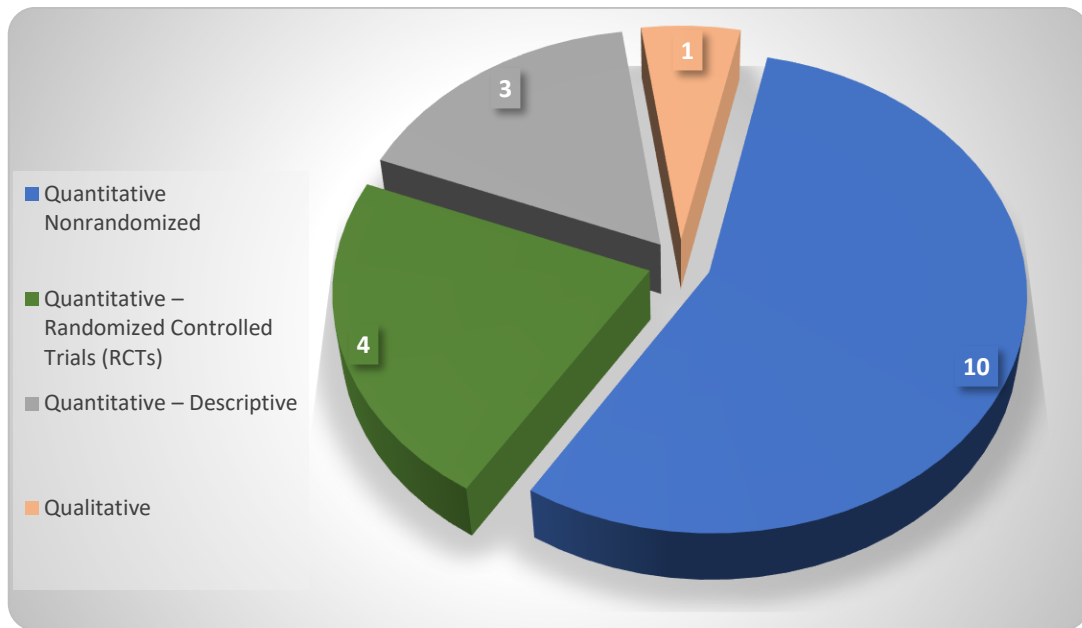


Figure 14: Study Distribution by MMAT 2018 Categories

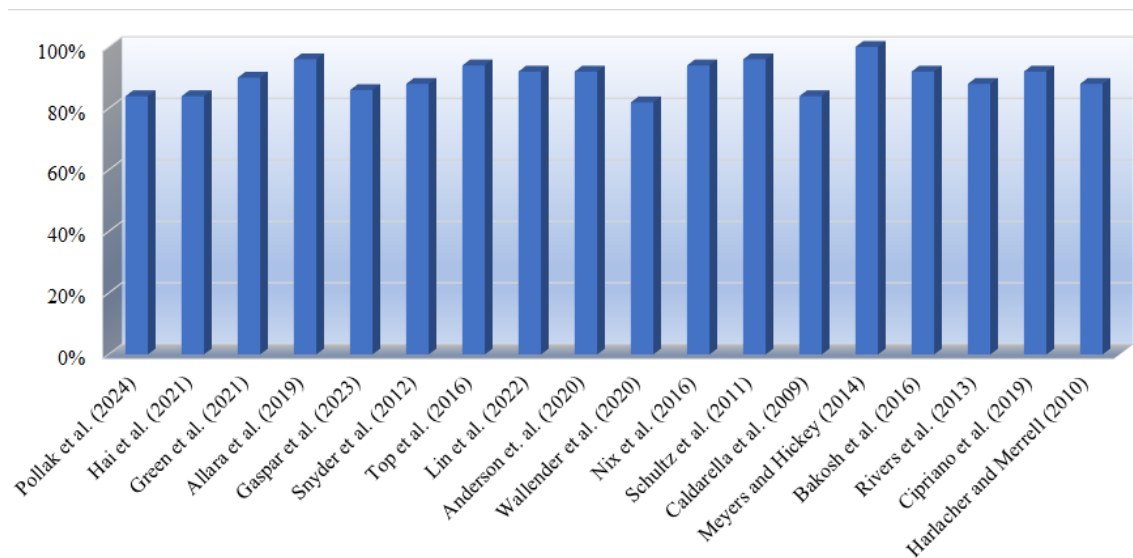


Figure 15: Percentage of MMAT Criteria Met by Selected Studies

Table 17 summarizes the percentages of criteria met based on the MMAT 2018 guidelines, grouped by study design. As shown in Table 17, the "Quantitative Nonrandomized" studies (10 studies) have a minimum of 84%, a maximum of 96%, and

an average of 89%, indicating good methodological quality within this study design category. In contrast, the four studies with a "Quantitative – Randomized Controlled Trials (RCTs)" design show a range from 88% to 94%, with an average of 90%, suggesting slightly better methodological quality compared to the nonrandomized studies. Additionally, the "Quantitative – Descriptive" studies (3 studies) have a broader range, from 82% to 96%, with an average of 90%, indicating that not all studies within this category maintain consistent methodological quality. The single "Qualitative" study achieved 100% on all MMAT criteria. These findings suggest generally high methodological quality across all selected studies, with RCT studies performing slightly better overall.

Table 17: Percentages of Criteria Met Based on MMAT 2018 Guidelines by Study Design

Study Design	# of Studies	MMAT 2018 - Criteria Met %		
		Minimum	Maximum	Average
Quantitative Nonrandomized	10	84%	96%	89%
Quantitative – Randomized Controlled Trials (RCTs)	4	88%	94%	90%
Quantitative – Descriptive	3	82%	96%	90%
Qualitative	1	100%	100%	100%

The detailed evaluation of all studies using the relevant study design and associated criteria as per MMAT 2018 guidelines are provided in Appendix B. Table 18 presents the detailed evaluation of the quantitative nonrandomized studies based on the MMAT 2018 criteria. As shown in the table, the lowest average score was observed for

the criterion "(3.4) Are confounders accounted for in the design and analysis?", with an average of 74%. This suggests that many studies did not adequately control for potential confounders, which could lead to confounding bias and limit the internal validity of the findings. In contrast, the criterion "(3.1) Are the participants representative of the target population?" had a relatively high average score of 80%, indicating that most studies achieved an appropriate level of participant representativeness, though there was some variability in how well the study samples reflected the broader target population. All studies performed well on the criterion "(3.2) Are measurements appropriate regarding both the outcome and intervention?" with a perfect score of 100%. This indicates that the variables were clearly defined and the measures were appropriate, contributing to the reliability and validity of the results. Similarly, the "(3.3) Are there complete outcome data?" criterion received an average score of 93%, suggesting that most studies had complete data for analysis, which strengthens the overall findings. Lastly, criterion "(3.5) During the study period, is the intervention administered (or exposure) as intended?" achieved the highest average score of 99%, indicating that the interventions were generally delivered consistently across studies as designed, ensuring fidelity to the study protocols. Overall, while the studies exhibited strong adherence to several MMAT criteria, the challenges related to confounder control and participant representativeness suggest that the findings highlight the importance of addressing these factors in future research to enhance methodological rigor.

Table 18: Quantitative Nonrandomized Studies Detailed MMAT Evaluation Results

Study' Author(s) and Year / Category / Criteria	3.1 – Participants representative of the target population	3.2 – Intervention measurements were appropriate	3.3 – Outcome data were complete	3.4 – Confounders factors were accounted in the design and analysis	3.5 – Intervention were administered as intended	Average Met %
Pollak et al. (2024)	100%	100%	60%	60%	100%	84%
Hai et al. (2021)	80%	100%	80%	60%	100%	84%
Allara et al. (2019)	100%	100%	100%	80%	100%	96%
Gaspar et al. (2023)	60%	100%	100%	80%	90%	86%
Top et al. (2016)	80%	100%	90%	100%	100%	94%
Lin et al. (2022)	80%	100%	100%	80%	100%	92%
Caldarella et al. (2009)	60%	100%	100%	60%	100%	84%
Bakosh et al. (2016)	80%	100%	100%	80%	100%	92%
Cipriano et al. (2019)	80%	100%	100%	80%	100%	92%
Harlacher and Merrell (2010)	80%	100%	100%	60%	100%	88%
Average Met %	80%	100%	93%	74%	99%	

The Randomized Controlled Trials (RCTs) analyzed in Table 19 demonstrate generally strong adherence to the MMAT 2018 guidelines, with notable variability in specific areas. One of the standout findings is the consistent performance in "(2.1) Is randomization appropriately performed?", where all studies achieved a perfect score of 100%, ensuring robust randomization practices and minimizing selection bias. However, the evaluation of "(2.2) Are the groups comparable at baseline?" reveals some concerns, with an average score of 80%, suggesting that while most studies made efforts to ensure group comparability, baseline differences were not always adequately addressed or reported. The studies also performed well in "(2.3) Are complete outcome data available?", achieving an average score of 98%. This high percentage suggests that most studies managed to collect and report complete data, reinforcing the validity and reliability of their findings. Conversely, "(2.4) Are outcome assessors blinded to the intervention?" showed room for improvement, with an average score of 70%. Two studies, in particular, failed to report blinding procedures, which could potentially introduce bias in the assessment of outcomes. Lastly, the "(2.5) Did participants adhere to the assigned intervention?" criterion had a solid average score of 93%, demonstrating that most studies effectively ensured participants followed the assigned interventions. Nonetheless, some variability was observed, particularly in the study by Snyder et al. (2012), which reported lower adherence. Overall, while the RCT studies excelled in key areas such as randomization and outcome data completeness, efforts should be made to improve baseline comparability and the application of blinding procedures to enhance the overall methodological quality and reduce potential bias.

Table 19: Quantitative – Randomized Controlled Trials (RCTs) Studies Detailed MMAT Evaluation Results

Category / Criteria / Study	2.1 – Is randomization appropriately performed?	2.2 – Are the groups comparable at baseline?	2.3 – Are complete outcome data available?	2.4 – Are outcome assessors blinded to the intervention?	2.5– Did participants adhere to the assigned intervention?	Average Met %
Green et al. (2021)	100%	60%	100%	-	100%	90%
Snyder et al. (2012)	100%	100%	100%	60%	80%	88%
Allara et al. (2019)	100%	100%	90%	80%	100%	94%
Rivers et al. (2013)	100%	60%	100%	-	90%	88%
Average Met %	100%	80%	98%	70%	93%	

A detailed evaluation of the quantitative descriptive studies was conducted based on the MMAT criteria, as summarized in Table 20. The study by Wallender et al. (2020) had lower scores on two criteria compared to the other studies, which generally performed better in those areas. All selected studies achieved 100% on the criterion "(4.1) Is the sampling strategy relevant to address the research question?", demonstrating that each study employed an appropriate sampling strategy that effectively aligned with its research objectives. This methodological rigor strengthens the validity of the findings and ensures that meaningful inferences can be drawn. However, none of the reviewed studies utilized samples that were fully representative of the target population. This is reflected in the average score of 77% on "(4.2) Is the sample representative of the target population?", indicating some degree of mismatch between the study samples and the broader population.

All studies received high scores for "(4.3) Are the measurements appropriate?", signifying that the measurement tools and data collection methods were appropriately selected and applied, thereby ensuring reliability and accuracy in capturing study variables. In contrast, "(4.4) Is the risk of nonresponse bias low?" exhibited variability across studies. Wallender et al. (2020) scored 50%, primarily due to data collection limitations, where only children whose parents consented and remained enrolled for both fall and spring assessments were included. This introduced potential selection bias caused by non-consent. Anderson et al. (2020) scored 80%, as 43.9% of students lacked complete pre/post-test data due to missing responses, absence, or lack of parental permission, potentially leading to biased results. Schultz et al. (2011), however, achieved 100%, indicating minimal risk of nonresponse bias in their study design.

Finally, all studies obtained 100% on "(4.5) Is the statistical analysis appropriate to answer the research question?". This confirms that the statistical techniques employed were clearly justified, properly executed, and free of methodological flaws that could undermine result interpretation. Overall, while the reviewed studies demonstrated strong methodological rigor in sampling strategy, measurement validity, and statistical analysis, limitations in sample representativeness and nonresponse bias highlight potential challenges in the generalizability of findings.

Table 20: Quantitative – Descriptive Studies Detailed MMAT Evaluation Results

Category / Criteria Study	4.1 – Is the sampling strategy relevant to address the research question?	4.2 – Is the sample representative of the target population?	4.3 – Are the measurements appropriate?	4.4 – Is the risk of nonresponse bias low?	4.5 – Is the statistical analysis appropriate to answer the research question?	Average Met %
Anderson et. al. (2020)	100%	80%	100%	80%	100%	92%
Wallender et al. (2020)	100%	70%	90%	50%	100%	82%
Schultz et al. (2011)	100%	80%	100%	100%	100%	96%
Average Met %	100%	77%	97%	77%	100%	

A rigorous evaluation of the single qualitative study was conducted using the MMAT criteria, as summarized in Table 21. The study by Meyers and Hickey (2014) achieved a 100% score across all five criteria, indicating strong methodological rigor and adherence to best practices in qualitative research. The study met 100% of the criterion "(1.1) Is the qualitative approach appropriate to answer the research question?", confirming that the chosen qualitative methodology was well-suited to explore the research question. This ensures that the study design effectively captures the depth and complexity of the investigated phenomenon. Similarly, a 100% score on "(1.2) Are the qualitative data collection methods adequate to address the research question?" demonstrates that the methods employed for data collection were comprehensive, relevant, and systematically applied. This suggests that the data gathered were sufficiently rich and detailed to support a meaningful exploration of the research topic. The study also received 100% for "(1.3) Are the findings adequately derived from the data?", indicating that the analytical process was transparent, systematic, and aligned with qualitative research standards. The findings were clearly linked to the collected data, ensuring credibility and reducing the risk of researcher bias. Furthermore, the study met 100% of the criterion "(1.4) Is the interpretation of results sufficiently substantiated by the data?", meaning that interpretations were not only clearly grounded in empirical evidence but also supported by thorough data triangulation and analysis. This enhances the trustworthiness and reliability of the study's conclusions. Lastly, the study achieved 100% for "(1.5) Is there coherence between qualitative data sources, collection, analysis, and interpretation?", signifying a high level of internal consistency throughout the research process. The alignment between data collection methods, analytical approaches, and interpretation of findings

reinforces the methodological soundness of the study. Given the 100% overall average, the study by Meyers and Hickey (2014) exemplifies methodological excellence in qualitative research, demonstrating robust data collection, well-grounded findings, and strong coherence in research design and execution. The study's adherence to high-quality qualitative research standards ensures that its findings are valid, reliable, and contribute meaningfully to the field.

Table 21: Qualitative Studies Detailed MMAT Evaluation Results

Category / Criteria / Study	1.1 – Is the qualitative approach appropriate to answer the research question?	1.2 – Are the qualitative data collection methods adequate to address the research question?	1.3 – Are the findings adequately derived from the data?	1.4 – Is the interpretation of results sufficiently substantiated by the data?	1.5 – Is there coherence between qualitative data sources, collection, analysis, and interpretation?	Average Met %
Meyers and Hickey (2014)	100%	100%	100%	100%	100%	100%
Average Met %	100%	100%	100%	100%	100%	

Comparative Appraisal of Quantitative Study Quality Using CEC and MMAT

Both the CEC Standards and the MMAT provided consistent and complementary assessments of methodological quality in the reviewed quantitative studies. Notably, both tools underscored the rigor and reporting quality of randomized controlled trials (RCTs) and well-controlled quasi-experimental designs. Studies such as Cipriano et al. (2019), Green et al. (2021), and Lin et al. (2022) were rated highly by the CEC for their internal validity, use of rigorous designs, and clarity in reporting. These same studies also received high MMAT scores, with RCTs averaging 90% overall and achieving perfect scores in areas such as randomization procedures and adherence to intervention protocols. These convergent findings reinforce the credibility of reported outcomes and support the effectiveness of the interventions examined.

In terms of outcome measurement, both tools aligned in confirming the appropriateness and consistency of the instruments used. The CEC emphasized the importance of clearly reported and statistically supported outcomes, while MMAT assessments revealed a 100% score across all quantitative studies for the criterion evaluating the appropriateness of outcome and intervention measurements. This alignment indicates a strong degree of methodological rigor and enhances confidence in the validity and interpretability of the reported effects.

While these tools demonstrated convergence in evaluating methodological strengths, their divergent emphases also revealed distinct insights. The CEC framework provided more detailed appraisal of contextual clarity, intervention fidelity, and outcome reporting, while the MMAT offered a more granular analysis of sampling strategies, group comparability, blinding, and control for confounding variables. For example, although Wallender et al. (2020) was positively rated by the CEC for

implementation clarity and fidelity, the MMAT identified concerns regarding nonresponse bias and limited control over potential confounders. These additional dimensions, less emphasized in the CEC tool, highlighted critical risks to validity in studies with non-randomized designs.

Moreover, the MMAT drew attention to group comparability at baseline and the extent to which statistical analyses addressed potential sources of bias, features that were not directly evaluated by the CEC criteria. In this sense, MMAT helped to identify vulnerabilities in certain studies that appeared methodologically sound under the CEC standards alone. Conversely, the CEC tool's focus on the educational context and implementation features contributed valuable information about the ecological validity and practical relevance of interventions, elements not addressed in MMAT.

The combined application of CEC and MMAT facilitated a more comprehensive evaluation of each study's methodological quality. Their alignment on core areas of rigor affirmed the strength of high-quality evidence, while their unique emphases enabled a more nuanced understanding of study limitations. This dual-framework approach thus enhanced the robustness of the quality appraisal and informed more confident interpretations of the evidence supporting social-emotional learning (SEL) interventions.

CHAPTER 6

DISCUSSION

The synthesis of the findings from the reviewed studies on social-emotional learning (SEL) programs along with a discussion on their impact on students' emotional, social, and academic development is presented herein. In general, the systematic review highlighted the positive effects of SEL interventions, though some variations in outcomes, limitations, and recommendations for future research were noted in the studies.

Critique of Findings from the Systematic Review

While the studies reviewed on Social-Emotional Learning (SEL) interventions suggest positive effects on students' social-emotional competencies, behavior, and classroom engagement, there are variations in the outcomes that require careful attention. The SEL Programs that were covered in the selected studies showed mixed results in relation to the effectiveness in various domains. The programs studied by Pollak et al. (2024), the You, Me and the Little Monsters (and the one studied by Hai et al. (2021), the MindUP program have shown strong impacts on emotional regulation, peer connectedness, and social-emotional skills. These findings underline the importance of emotional regulation for fostering positive relationships and classroom self-regulation. However, the degree of improvement varied across programs due to different contextual factors such as implementation fidelity, student age, and the unique needs of students. All these factors were shown to play a crucial role in the program and intervention success. Additionally, programs like the SPARK Child Mentoring Program which was studied by Green et al. (2021) and Incredible Years® Teacher Classroom

Management (IY-TCM) investigated by Gaspar et al. (2023) were shown to be effective in improving emotional regulation and behavior, especially among students with behavioral difficulties. However, these studies overlooked the academic benefits of the studied programs, which may have also been an outcome but not assessed. In other words, the studies addressed the effectiveness of SEL interventions in overcoming behavioral challenges of students, but neglected to address other issues, such as improvement in academic performance. Consequently, it is crucial to more comprehensively examine how SEL impacts both behavior and academic performance in future research, given their interrelatedness in educational settings. Another observed outcome of SEL interventions in the reviewed studies is an improvement in the school climate and overall well-being of students. Programs such as Positive Action (Snyder et al., 2012) have shown improvements in school climate, student safety, and overall well-being. However, isolating the direct effects of SEL on school climate was challenging in these studies, as these improvements are often a result of a broader, multifaceted interventions implemented in schools, such as anti-bullying initiatives. Therefore, it is important to consider how SEL interacts with other programs aimed at fostering a supportive school environment, so as to isolate the impact of SEL interventions and consequently confirm its effectiveness for the domains it addresses. In some studies, program limitations and unintended negative outcomes were observed. While the results are generally positive, some studies report unintended negative effects, such as the increased psychosomatic complaints observed as a result of SEL intervention using the Diario della Salute [My Health Diary], as reported by Allara et al. (2019). This suggests that poorly designed SEL programs may inadvertently increase stress or exacerbate mental health issues. Therefore, there is a need to carefully design

the intervention process and to allow for flexibility in implementation that would consider the specifics of the target group as well as ongoing monitoring during implementation so as to mitigate such risks. Additionally, the intervention should carefully interpret responses from different genders. For example, in the study by Pollak et al. (2024), it was established that boys show more significant improvements than girls, this points to the importance of adapting SEL programs for different gender and cultural contexts.

Several limitations were noted in the reviewed studies, affecting both internal and external validity. A common issue across multiple studies was small or homogenous sample sizes, which reduce generalizability. For instance, Harlacher and Merrell (2010) evaluated the Strong Kids SEL curriculum using a homogenous sample, limiting applicability to diverse populations. Similarly, Hai et al. (2021), Schultz et al. (2011), and Caldarella et al. (2009) all used small sample sizes when assessing the effectiveness of MindUP, Connecting with Others, and Strong Start, respectively. These limitations weakened external validity and reduced the reliability of the reported findings. Future research should use larger and more diverse samples to improve generalizability.

Another key limitation was short follow-up periods, which hinder the ability to assess the long-term effectiveness of SEL interventions. Wallender et al. (2020) found no significant post-implementation growth in SEL skills, potentially due to the limited follow-up duration. In contrast, Hai et al. (2021) observed delayed effects of the MindUP program, indicating that SEL benefits may emerge over time. Future studies should extend follow-up periods (e.g., 6–12 months) to better assess sustainability.

Variations in program implementation also influenced outcomes. Cipriano et al. (2019) and Allara et al. (2019) noted inconsistent delivery, with teachers implementing SEL programs differently. This variability likely affected results and suggests a need for improved teacher training and program adherence protocols to ensure fidelity in implementation. Moreover, the absence of academic outcome measures in some studies limits the ability to determine whether SEL programs directly enhance academic performance. Cipriano et al. (2019) and Anderson et al. (2020) found positive effects on classroom behavior but no clear impact on academic achievement, while Top et al. (2016) reported that the Second Step program improved both behavior and academic performance, especially in high-need schools. Future research should integrate academic performance indicators to assess the broader impact of SEL interventions.

Some studies also reported unintended negative effects. Allara et al. (2019) found that an SEL program unexpectedly increased psychosomatic complaints among students, suggesting that poorly designed or implemented interventions may cause stress rather than alleviate it. Pollak et al. (2024) further highlighted that while SEL programs improved social skills and student happiness, the benefits were not uniform, with boys showing more improvements than girls. These findings emphasize the need for careful adaptation of SEL programs to different student populations to mitigate unintended consequences. Finally, several studies failed to isolate the most effective components of SEL programs. Nix et al. (2016) demonstrated long-term benefits from Head Start REDI but did not determine which aspects contributed most to student outcomes. Similarly, Rivers et al. (2013) found that the RULER program improved classroom emotional climate but lacked conclusive evidence on its impact on student

perceptions over time. Future research should focus on identifying specific mechanisms that drive positive outcomes.

Based on the systematic review, it is recommended to consider various factors in the design of future studies aimed at evaluating the impact of SEL interventions on academic performance and classroom behavior in K-12 students. For example, it is crucial to utilize larger and more diverse samples in the studies so as to enhance external validity. Furthermore, it is recommended to tailor programs to diverse student populations to mitigate unintended negative effects. Additionally, it is recommended to extend the follow-up periods to about 6–12 months which would allow evaluating the long-term effects of the SEL program and intervention. Another recommendation that would be beneficial for arriving at sound inferences from the study is to ensure that program implementation is standardized through improved teacher training. Lastly, it is crucial to integrate academic performance measures alongside SEL assessments so as to ensure a balanced and broader assessment of the interventions and the SEL programs.

Analysis of Findings from the Mixed Methods Appraisal Tool (MMAT)

In this section, the findings of the MMAT 2018 evaluation of the selected studies for the systematic review are analyzed across various study design categories: quantitative non-randomized studies, randomized controlled trials (RCTs), quantitative descriptive studies, and qualitative studies are discussed. Each subsection reviews the methodological quality based on criteria such as measurement appropriateness, control of confounders, sampling strategies, and data completeness. Additionally, the discussion highlights how these strengths and weaknesses affect the overall validity of the studies. By synthesizing these findings, a comprehensive understanding of the

evidence base for SEL programs is provided, along with recommendations for future research.

The MMAT analysis of the 18 selected studies revealed variability in how well the studies met the criteria. Among the ten quantitative non-randomized studies, the MMAT scores ranged from 84% to 96%, with an average of 89%, indicating generally high methodological quality with some variation. The four RCTs showed a slightly narrower range, from 88% to 94%, with an average of 90%, suggesting strong methodological rigor. The three quantitative descriptive studies scored between 82% and 96%, with an average of 90%. Finally, the one qualitative study scored 100%, indicating full compliance with MMAT criteria. These results suggest that, overall, the studies exhibited high methodological quality, with RCTs and descriptive studies having the highest average scores, while non-randomized studies demonstrated the greatest variability.

The evaluation of the 10 quantitative non-randomized studies revealed varying adherence to methodological criteria. The highest score was 96% (Allara et al., 2019), while several studies, including Pollak et al. (2024), Hai et al. (2021), and Caldarella et al. (2009), scored 84%. Most studies excelled in measurement appropriateness (100%) and intervention administration (99%). However, there was variability in participant representativeness, with Gaspar et al. (2023) and Caldarella et al. (2009) scoring as low as 60%. Confounder control was also inconsistent, with several studies scoring 60%, leading to an average of 76%. Despite these weaknesses, most studies had complete outcome data (97%). The non-randomized studies generally demonstrated strong measurement techniques, with all studies scoring 100% for both outcome and intervention measurement appropriateness. They also ensured strong intervention

consistency, with an average score of 99%. Additionally, the completeness of outcome data (97%) contributed to the reliability of the findings. The identified key weaknesses among the different quantitative non-randomized studies include inadequate control of confounders (average score of 74%) and variable participant representativeness (average score of 80%). Studies like Pollak et al. (2024) and Hai et al. (2021) were particularly affected by these issues. These limitations could bias the conclusions and affect generalizability. Future studies should prioritize better confounder control and more representative samples.

The four RCTs reviewed demonstrated high methodological quality, with an average MMAT score of 90%. Allara et al. (2019) scored the highest at 94%, while Snyder et al. (2012), Rivers et al. (2013), and Green et al. (2021) scored between 88% and 90%. Randomization was appropriately performed in all studies (100%), but baseline group comparability was inconsistent, with two studies (Green et al., 2021; Rivers et al., 2013) scoring 60%. Outcome completeness was high (98%), and participant adherence to interventions was strong (93%). However, the blinding of outcome assessors was not reported in two studies, lowering the category average to 70%. The RCTs excelled in randomization (100%) and outcome data completeness (98%). Additionally, most participants adhered to the assigned interventions (93%), indicating well-executed study protocols. However, weaknesses were noted in baseline comparability (average score of 80%) and assessor blinding (average score of 70%). Inadequate baseline comparability could affect the internal validity, while the lack of blinding in two studies may introduce measurement bias. These concerns should be addressed in future RCTs to improve validity.

With regard to the findings of the MMAT evaluation of the three quantitative descriptive studies a strong methodological quality with an average MMAT score of 90% was noted. Schultz et al. (2011) achieved the highest score (96%), while Wallender et al. (2020) scored the lowest (82%). All studies employed appropriate sampling strategies (100%) and statistical analyses (100%), ensuring methodological robustness. However, sample representativeness varied, with Wallender et al. (2020) scoring the lowest (70%), resulting in an average score of 77%. Nonresponse bias was another issue, especially in Wallender et al. (2020), which scored 50%, bringing the category average to 77%. These studies demonstrated strong sampling strategies (100%) and statistical analyses (100%). Measurement appropriateness was also high, with an average score of 97%. However, sample representativeness (average score of 77%) and nonresponse bias (average score of 77%) were noted as weaknesses. These issues limit the external validity of the studies and suggest the need for better sample selection and mitigation of nonresponse bias in future research.

As for the last study design category reviewed, qualitative study, which was conducted by Meyers and Hickey (2014) perfect MMAT score of 100% across all criteria was observed, demonstrating a strong methodological rigor across all evaluated criteria. The study's design, data collection, and analysis were all highly appropriate, with findings clearly supported by the data and well-interpreted. The study adhered strictly to qualitative research best practices, making its findings highly reliable. Despite the high methodological rigor, challenges related to transferability and dependability remain common in qualitative research. The extent to which the findings can be generalized to other contexts is uncertain, which is typical for qualitative studies. Careful interpretation is necessary to avoid overgeneralizing the results.

Across the various study designs, several strengths and weaknesses emerged. Overall, the studies demonstrated strong methodological rigor, particularly in measurement appropriateness and data collection. RCTs and quantitative non-randomized studies performed well in ensuring robust intervention delivery and outcome data completeness. However, common weaknesses included inadequate control of confounders, issues with sample representativeness, and variability in baseline comparability. These weaknesses impact both the internal and external validity of the studies, limiting their generalizability.

To improve the evidence-base for SEL programs, future research should focus on enhancing confounder control, improving sample representativeness, and ensuring baseline comparability, particularly in RCTs. Additionally, better adherence to blinding procedures and efforts to reduce nonresponse bias are necessary to strengthen the reliability of future studies. Addressing these limitations will contribute to more robust evidence, advancing the field and supporting effective interventions.

Interpretation of Council for Exceptional Children’s (CEC) Evaluation Results

The results of the CEC analysis reveal several insights into the methodological quality of the studies. The overall context and setting were well defined across all 18 studies, with a 100% success rate in meeting this criterion. This suggests that the researchers consistently provided clear and sufficient information about the study environments, allowing readers to fully understand the contextual factors that might influence the research outcomes. This is a strong indication that the findings can be effectively applied to similar settings, as the detailed descriptions enhanced the external validity of the studies.

When examining the participant-related criteria, 89% of the studies met the requirements for describing participant characteristics and selection methods. While this was generally well done, some studies, such as those by Hai et al. (2021), Gaspar et al. (2023), and Top et al. (2016), only partially met the participant reporting criteria. The relatively high percentage of studies that met this criterion indicates that most of the research was based on well-defined and representative sample groups. This strengthens the reliability of the findings and underscores the importance of transparency in participant selection, which contributes to the overall generalizability of the results.

Regarding the intervention agent, all the studies met the criterion with a perfect score. This indicates that the intervention agents, including the individuals responsible for delivering the intervention, were well described in every study. Detailed information on their qualifications and training provides transparency and ensures that the interventions are replicable and can be adapted effectively in future research or practice. This also enhances the credibility and reproducibility of the results across different contexts.

The description of the practice was met by 89% of the studies, with three studies receiving partial credit. This suggests that, in general, the studies offered clear and comprehensive descriptions of the intervention components, although some details were lacking in a few studies, which could have hindered the replication or understanding of the intervention. The studies with complete descriptions provide a clearer understanding of the intervention's theoretical framework and operational components, which are crucial for evaluating the intervention's effectiveness and for replicating it in other settings.

Implementation fidelity was met by 89% of the studies, with only three studies receiving partial credit due to gaps in monitoring and reporting adherence to the intervention protocols. The variation in how studies measured and reported fidelity points to the importance of standardized methods for ensuring that interventions are delivered consistently and as intended. While most studies utilized rigorous methods to assess fidelity, discrepancies in some studies highlight the challenges of measuring and documenting implementation fidelity. Future studies should adopt validated tools and ensure consistent assessment procedures to enhance the reliability and generalizability of their findings.

Internal validity was the weakest area, with only 59% of the studies meeting the criterion. This low score reflects the variability in how well studies controlled for confounding variables and established causal relationships. A significant portion of the studies had limitations, such as a lack of randomization, sample size issues, and biases from non-random participant selection. Despite these challenges, some studies (such as Bakosh et al., 2016) demonstrated strong internal validity, emphasizing the importance of rigorous experimental designs in establishing causal links between interventions and outcomes. These results suggest that future research should prioritize improving internal validity by addressing issues related to randomization, sample size, and controlling for confounding factors.

The outcome measures used in the studies were generally of high quality, with 96% of the studies meeting the criteria for clear and appropriate measurement of dependent variables. However, a few studies, including Allara et al. (2019) and Wallender et al. (2020), fell short of fully meeting the criterion. Despite these exceptions, the majority of the studies demonstrated reliable measurement techniques,

which ensured that the outcomes assessed were valid and that the results could be attributed to the interventions with a high degree of confidence.

Data analysis was another area where all the studies excelled, with 100% meeting the criteria for employing appropriate analytical methods. The studies used advanced statistical techniques that allowed them to control for confounding variables and assess the nuances of intervention impacts. This indicates that the studies were rigorous in their data analysis and that their conclusions were based on sound statistical evidence. However, some studies, particularly those with small sample sizes or single-case designs, could have benefitted from additional clarification on the generalizability of their results. Nonetheless, the overall high quality of the data analysis suggests that the studies were methodologically robust and provided reliable insights into the effectiveness of the interventions.

The analysis of these studies highlights the strengths and weaknesses of the research in terms of methodology. While the studies generally performed well in providing detailed context, describing interventions and practices, and employing appropriate data analysis techniques, there were noticeable gaps in internal validity and implementation fidelity. Addressing these weaknesses in future research would strengthen the overall reliability and generalizability of findings in the field, providing a more solid foundation for the development and implementation of effective interventions. The overall methodological rigor of the studies, with a few notable exceptions, suggests that the majority of the research in this area is of high quality, with some room for improvement in certain areas.

Implementation of Social-Emotional Learning in Lebanon

The findings of the systematic review informed the formulation of actionable recommendations for implementing Social and Emotional Learning (SEL) in Lebanon. These recommendations, while grounded in international evidence, are intended to serve as a foundational guide for localized adaptation and further empirical evaluation. Given the socio-cultural complexities and unique challenges facing the Lebanese education system, including political instability, economic hardship, and an overstretched public sector, any effort to introduce SEL must be contextually responsive to ensure effectiveness and sustainability.

Despite the absence of a comprehensive national policy framework for SEL, several significant initiatives have been introduced in Lebanon. The implementation of SEL is gaining momentum, yet remains complex due to ongoing socioeconomic, political, and educational constraints. While there is increasing recognition of SEL's potential to enhance student well-being, improve learning outcomes, and foster inclusive school cultures, its sustainable and systemic integration into Lebanon's education system remains a work in progress. Among these initiatives is the Lebanon Social and Emotional Learning Framework, developed through a collaboration between the Lebanese Ministry of Education and Higher Education (MEHE) and USAID. This framework outlines a roadmap for integrating SEL into Lebanese schools and reflects a growing recognition of the importance of social-emotional competencies for student development. In parallel, the QITABI (Quality Instruction Towards Access and Basic Education Improvement) program, implemented by World Learning Inc. under a cooperative agreement with USAID, has played a central role in advancing SEL practices.

Under its second phase, QITABI 2 (World Learning, 2021), substantial technical and financial support was provided to MEHE to implement a national summer catch-up program, which ran from August 18 to September 18, 2021. This program, which reached over 36,000 Cycle 1 and 2 students across 302 public schools, included SEL as a core component alongside Arabic, English, Math, and French. The QITABI team developed SEL instructional materials and trained MEHE coaches and CRDP (Center for Educational Research and Development) trainers, who in turn trained summer program teachers. These efforts underscore a growing institutional commitment to embedding SEL in both formal and informal education, even amid Lebanon's ongoing crises.

Another step toward system-level integration is the development of a national SEL framework, further supported by organizations such as World Learning Inc., which played a key role in the field-testing of the PSS-SEL Toolbox (Kaloustian et al, 2022). This initiative emphasized the need for long-term reforms, local leadership commitment, and strategic planning that prioritizes the needs of all learners across Lebanon. Lessons learned from this initiative revealed the tension between donor-driven demands for quick results and the longer timelines required for meaningful institutional reform. Practitioners and researchers are therefore encouraged to advocate for context-sensitive, long-term integration and to engage in ongoing research to generate evidence-based data that inform implementation. Ensuring a shared understanding of SEL competencies is crucial for coherent curriculum design, teacher training, and policy development.

In parallel, new large-scale initiatives like USAID's QITABI 3 program are expected to further shape Lebanon's SEL landscape (U.S. Embassy in Lebanon, 2023).

Launched in 2023, QITABI 3 is a five-year initiative led by RTI International in partnership with MEHE, CERD, World Learning, the Ana Aqra Association, and the SKILD Center (RTI International, 2023). The program aims to improve literacy, numeracy, SEL, and inclusive education outcomes for approximately 350,000 learners across 1,200 public and low-cost private schools. It also seeks to enhance instructional practices for 25,000 teachers and support school-based SEL planning, drawing on successful pilots from QITABI 2.

QITABI 3 adopts a holistic approach by integrating life skills, career guidance, inclusive curriculum development, and family engagement into its interventions. A particular emphasis is placed on improving school climate and resilience, supporting teachers and principals in fostering SEL-rich environments, and strengthening the national education system's capacity to plan, budget, deliver, and sustain quality educational services. This combination of national frameworks, donor-funded programs, and multi-stakeholder engagement underscores both the opportunities and challenges of institutionalizing SEL in Lebanon. While progress is evident, the path forward requires balancing local priorities with international expectations, ensuring contextual relevance while building coherence across initiatives, and promoting sustainability beyond the lifespan of individual projects.

Nonetheless, significant challenges persist. Despite national-level efforts, empirical research evaluating the effectiveness of SEL programs in Lebanon remains limited, particularly in addressing socioeconomic disparities, refugee inclusion, and post-crisis trauma. As such, the actionable recommendations presented in this thesis are not final solutions but initial steps toward further research and program development. Future studies should prioritize context-specific SEL programs that reflect the lived

realities of Lebanese students and rigorously assess their adaptability and impact. This research underscores the need to move beyond theoretical frameworks by developing practical, implementable strategies that can be tested and refined in collaboration with local educators. A user-centered approach that actively involves teachers, counselors, and school administrators will be critical to ensuring that SEL interventions are relevant, accepted, and sustained within the Lebanese educational ecosystem. The specific recommendations and strategies emerging from this study are presented in detail in Chapter 7 of this thesis.

CHAPTER 7

RECOMMENDATIONS, SUMMARY, CONCLUSIONS, AND LIMITATIONS

Recommendations and Strategies for the Implementation of SEL in the Lebanese Educational System

The educational system in Lebanon faces several challenges that highlight the urgent need for Social-Emotional Learning (SEL) interventions. These challenges include significant socioeconomic disparities, political instability, and the ongoing refugee crisis, all of which have profound effects on students' behavior, academic performance, and overall well-being. Socioeconomic differences create varying levels of access to resources, with some students experiencing poverty and limited opportunities while others are more privileged. These disparities influence students' self-esteem, engagement with learning, and classroom behavior. In addition, Lebanon's history of political instability and conflict, including violence, displacement, and trauma, has created a stressful environment for students. These experiences negatively impact students' social-emotional development, making it essential to address these challenges through SEL programs. Lebanon's cultural and religious diversity, while a source of richness, also contributes to social tensions and conflicts among students. SEL can help mitigate these tensions by fostering inclusivity, empathy, and communication skills, essential for harmonious interaction in a diverse society.

Furthermore, the refugee crisis has exacerbated educational challenges, as a significant portion of Lebanon's student population is now comprised of refugee children. These students often face additional barriers to education, including trauma, discrimination, and social isolation. SEL interventions can play a critical role in

supporting their integration into the school community, helping them build emotional resilience and navigate their complex social environments. The mental health of students in Lebanon is also a significant concern. Anxiety, depression, and post-traumatic stress disorder are prevalent, particularly among students from vulnerable backgrounds. SEL programs can provide coping strategies, emotional regulation techniques, and resilience-building skills that help students better manage stress and emotional challenges. By addressing these mental health needs, SEL can improve students' emotional well-being and enhance their ability to succeed academically. Lebanon's educational system also faces inequities in access to quality education, especially for marginalized populations. SEL interventions offer a promising solution by fostering essential social-emotional skills that promote academic success and lifelong learning. These programs can help level the playing field by addressing the unique needs of students from diverse backgrounds and providing equal opportunities for growth and development.

Several initiatives have already been undertaken to implement SEL in Lebanon's schools. The Lebanon Social and Emotional Learning Framework, developed in collaboration with the Ministry of Education and USAID, offers a roadmap for integrating SEL into Lebanese schools. Similarly, the QITABI Program, implemented by World Learning, has incorporated SEL components into its teacher training and classroom instruction. The "Mapping Project for SEL Framework in Lebanon," conducted by Harvard University researchers, aims to identify existing SEL resources and initiatives in Lebanon, providing valuable insights for further development. Despite these efforts, there remains a need for clear recommendations to guide the implementation of SEL interventions, especially for K-9 students. These

recommendations should be grounded in the findings of the systematic review and tailored to the specific educational and socio-cultural context of Lebanon. It is essential that these recommendations be practical, culturally responsive, and aligned with the goals of enhancing students' emotional and social competencies.

The rationale for these recommendations stems from the urgent need for SEL interventions that address Lebanon's unique challenges. Gathering feedback from key stakeholders, including teachers and counselors, will be vital to refining and evaluating these interventions. As emphasized by Kuter and Yilmaz (2001), involving primary users in the process through surveys and interviews will provide crucial insights into the practical application and effectiveness of SEL strategies in the classroom. Future research should evaluate the success of these interventions to identify areas for improvement and ensure their long-term sustainability. Although the systematic review covered SEL interventions for K -12 students, the focus of these recommendations is on K -9 students. Early intervention at this stage is particularly critical for promoting social-emotional development and improving classroom behavior, which can positively impact students' academic performance. SEL interventions targeting older students, such as those in grades 10-12, focus on issues like career guidance and adapting to university environments, which are outside the scope of this review. The development of these recommendations is crucial not only for policy makers and educators in Lebanon but also for stakeholders looking to bridge the gap between research and practice. By equipping educators with practical strategies, Lebanon can foster a more inclusive, supportive, and effective learning environment, ultimately contributing to the overall well-being and success of all students.

The successful integration of Social and Emotional Learning (SEL) into Lebanon's educational system requires a strategic approach tailored to the country's unique socio-cultural and economic challenges. Students in Lebanon face high levels of stress due to political instability, economic hardship, and the presence of marginalized and refugee populations. Consequently, SEL programs must be adapted to enhance emotional resilience, social competence, and academic success. This section presents a set of evidence-based, actionable recommendations aimed at creating a supportive learning environment for K-9 students. Each recommendation accounts for Lebanon's diverse student population, highlighting the need for culturally responsive and trauma-informed interventions. These strategies ensure that SEL initiatives are not only effective but also sustainable in the long term. The following actions are recommended for the integration of SEL into Lebanon's educational system:

1. **Adaptation of the MindUP Program:** Implement the MindUP program, which has demonstrated positive effects on emotional regulation and classroom engagement (Hai et al., 2021), with cultural adaptations to align with Lebanon's diverse religious and cultural contexts. Given Lebanon's exposure to trauma and political instability, MindUP's focus on emotional regulation and attention is particularly beneficial. Emotional regulation is critical for academic engagement and success, especially in high-stress environments. While MindUP has shown delayed effects on active participation, monitoring should ensure that students not only regulate emotions but also develop improved classroom engagement.
2. **Implementation of the SPARK Child Mentoring Program:** Introduce the SPARK Child Mentoring Program, which has demonstrated improvements in emotional regulation and communication, particularly among disadvantaged

students (Green et al., 2021). The program can foster stronger relationships among students from diverse socioeconomic backgrounds, including refugees. Lebanon's diverse education system, which includes marginalized and refugee populations, can benefit from SPARK's emphasis on mentoring and emotional regulation to promote resilience and improve communication. Successful implementation requires careful planning, the recruitment of trained mentors, and teacher and mentor training focused on cultural sensitivity and trauma-informed practices.

3. **Strengthening Teacher Support through Conscious Discipline:** Equip teachers with effective classroom behavior management strategies by training them in the Conscious Discipline program, a research-backed framework known for creating structured, supportive learning environments (Anderson et al., 2020). Teachers in Lebanon often work with students who face trauma and behavioral challenges, making traditional disciplinary methods insufficient for addressing underlying emotional and social needs. Conscious Discipline offers tools for emotional regulation, strengthening teacher-student relationships, and creating a safe learning space. To ensure consistent application and effectiveness, ongoing professional development and follow-up sessions should be integrated into the training.

4. **Incorporation of the Positive Action Program for School Climate**

Improvement: Implement the Positive Action program in underperforming schools to enhance school climate, safety, and student well-being. This evidence-based program has been shown to foster a supportive school environment, leading to improved student behavior and academic outcomes (Snyder et al., 2012). In Lebanon, many schools, especially those in underserved areas, struggle with

safety concerns, bullying, and disengagement. The Positive Action program's focus on reinforcing prosocial behavior and self-improvement can create a safer, more inclusive learning environment. Regular assessments and a robust monitoring framework are essential to ensure the program's effectiveness and to adjust strategies as needed.

5. **Adoption of the Second Step Program for High-Need Schools:** Implement the Second Step program in schools with significant behavioral and academic challenges. Research shows that this program reduces problem behaviors and enhances student engagement (Top et al., 2016). In Lebanon, schools serving marginalized communities and refugee populations often face behavioral issues and disengagement. The Second Step program focuses on emotional regulation, social skills, and academic readiness, making it an effective tool for addressing these challenges. Tailoring the program to the unique needs of students, particularly those affected by trauma, and aligning it with school priorities will help ensure its success.
6. **Inclusion of Mindfulness-Based SEL (MBSEL) Programs:** Introduce Mindfulness-Based Social and Emotional Learning (MBSEL) programs to enhance student well-being and academic success. Research shows that these programs improve classroom behavior, focus, and academic performance (Bakosh et al., 2016). Given Lebanon's socio-political context, where students face stress related to political instability and trauma, mindfulness techniques can help students manage stress, stay focused, and build emotional resilience. It is crucial to introduce MBSEL gradually and adapt it based on continuous monitoring to assess its long-term impact.

7. **Strengthening Emotional Competence through Social Skills Lessons:**

Implement structured social skills curricula, similar to Head Start REDI (Nix et al., 2016) and Strong Kids (Harlacher & Merrell, 2010), to enhance social competence and reduce emotional distress. Lebanese students, especially those in conflict-affected areas, often face high levels of stress and social challenges. Social skills training, focusing on self-regulation, empathy, and peer acceptance, can help students navigate these challenges. Programs should be flexible and tailored to the specific social dynamics in Lebanese schools, including integration with refugee students and fostering inclusive peer relationships.

8. **Culturally Tailored SEL Programs for Conflict-Affected Students:** To support students affected by conflict, displacement, and trauma, it is essential to develop culturally relevant Social and Emotional Learning (SEL) programs. These programs should specifically address challenges such as post-traumatic stress, aggression, and emotional dysregulation, equipping students with the skills needed to manage their emotions and develop healthy coping mechanisms. Given Lebanon's socio-political context and its large refugee student population, trauma-informed SEL initiatives are critical for fostering emotional resilience, social integration, and psychological well-being. By creating adaptable and inclusive programs, schools can ensure that students from diverse backgrounds feel supported and can engage more effectively in learning. To maximize impact, it is crucial to collaborate with mental health professionals in the design and implementation of these programs. Their expertise will help ensure that interventions effectively address both emotional and psychological needs,

providing students with the necessary tools to process trauma, build positive peer relationships, and succeed academically.

9. **Evaluation and Adaptation of SEL Programs:** Establish a comprehensive evaluation system to assess the effectiveness of SEL interventions. While SEL programs can yield positive outcomes, they can also have unintended negative consequences, such as increased psychosomatic complaints (Allara et al., 2019). A structured evaluation framework will help assess impact, identify challenges, and refine implementation strategies. Feedback from teachers, students, and parents will provide a holistic understanding of program outcomes, ensuring that interventions remain responsive, culturally relevant, and aligned with students' needs.

10. **Integration of SEL into Teacher Education and Professional Development:** Incorporate SEL training into teacher education programs and ongoing professional development to ensure the successful integration of SEL into schools. Teachers play a critical role in shaping students' social-emotional growth, and equipping them with the necessary skills will enable them to embed SEL practices into daily classroom routines. Both pre-service and in-service training should focus on practical, culturally relevant approaches tailored to Lebanon's diverse educational context. By providing teachers with context-specific tools, schools can create sustainable SEL practices that address students' emotional and psychological needs while strengthening the overall school climate.

Table 22 provides a summary of the above-mentioned recommendations highlighting the target group, rationale, and the expected outcome.

Table 22: Summary of Recommendations for Implementation of SEL in Lebanon

SEL Program/ Intervention	Key Features	Target Group	Rationale for Effectiveness	Expected Outcomes
MindUP Program	Mindfulness, self-regulation techniques	K-9 students, especially those with emotional regulation difficulties	Proven effectiveness in improving emotional regulation, social competence, and peer relationships (Hai et al., 2021)	Increased emotional regulation, improved classroom engagement
SPARK Child Mentoring Program	Mentorship, communication, emotional regulation	At-risk or disadvantaged students	Enhances communication skills, resilience, and emotional regulation, particularly in challenging contexts (Green et al., 2021)	Improved emotional regulation, communication, and problem-solving
Incredible Years® Teacher Classroom Management (IY-TCM)	Teacher-led intervention focusing on behavior management	Students with behavioral challenges	Effective in improving teacher-student interactions, emotional regulation, and overall classroom behavior (Gaspar et al., 2023)	Improved classroom behavior, reduced behavioral challenges
Positive Action	Promoting pro-social behaviors, academic integration	General K-9 student population, particularly in underperforming schools	Enhances school climate, safety, and overall student well-being (Snyder et al., 2012)	Enhanced school climate, improved academic and behavioral outcomes

SEL Program/ Intervention	Key Features	Target Group	Rationale for Effectiveness	Expected Outcomes
Conscious Discipline	Social-emotional skills for both teachers and students	Teachers and K-9 students	Focuses on teacher fidelity and emotional climate in the classroom (Anderson et al., 2020)	Improved classroom behavior, enhanced executive function skills
Second Step Program	Social problem-solving skills, empathy training	High-need schools or students with behavior challenges	Focuses on reducing problem behaviors and improving emotional intelligence (Top et al., 2016)	Reduced problem behaviors, improved academic performance
RULER Program	Emotional intelligence curriculum (Recognizing, Understanding, Labeling, Expressing, and Regulating emotions)	At-risk students	Improves emotional intelligence, teacher-student relationships, and overall classroom climate (Cipriano et al., 2019)	Improved student engagement, enhanced emotional climate
Head Start REDI Program	Academic and social-emotional integration for early learners	Early learners, at-risk students	Successful in promoting social competence and reducing aggression, fostering long-term positive outcomes (Nix et al., 2016)	Increased social competence, reduced aggression, better teacher-student relationships

Figure 16 illustrates the comprehensive steps required to integrate Social-Emotional Learning (SEL) into the national curriculum. The process begins with policy development and advocacy, where policymakers establish clear frameworks for SEL integration, ensuring its place as a core component of national education reform. By aligning SEL with other educational priorities like literacy and numeracy, the curriculum fosters well-rounded student development. Following this, implementation and support become essential. The Ministry of Education mandates the adoption of SEL programs in all schools, integrating SEL objectives directly into the national curriculum. In addition, resources for teacher training and professional development are allocated, ensuring that educators are equipped with the necessary skills and tools to effectively deliver SEL programs. Finally, monitoring and evaluation play a crucial role in maintaining the success of SEL integration. Nationwide assessments are conducted regularly to evaluate the program's effectiveness, with feedback gathered to continuously adapt and improve SEL strategies within schools. The result of these efforts ensues a successful integration of SEL in schools, promoting emotional resilience, social competence, and overall student well-being.

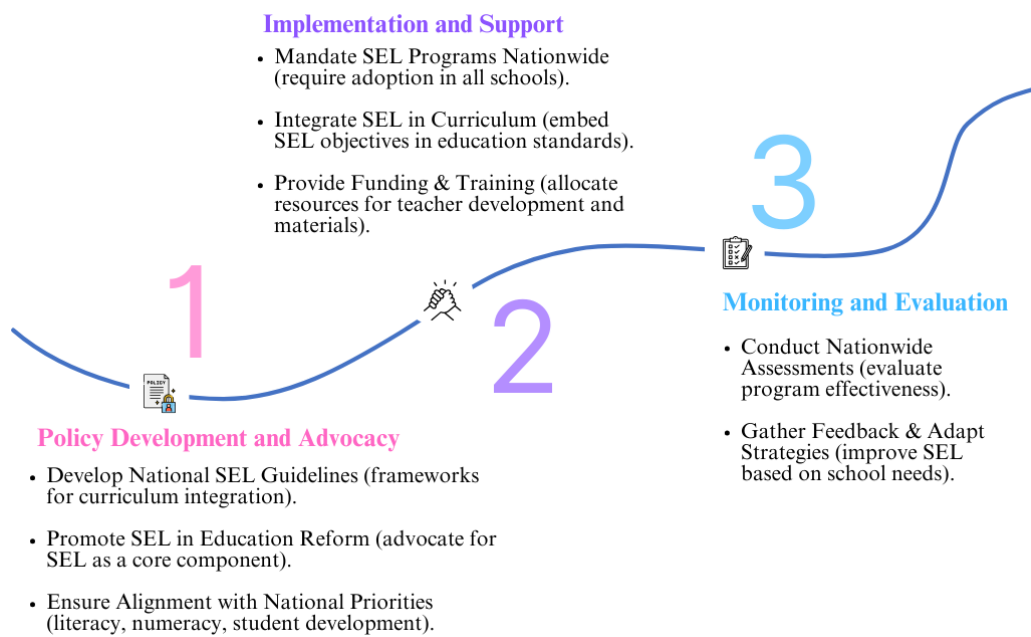


Figure 16: Integration of SEL in the National Curriculum

Figure 17 illustrates the steps involved in integrating Social-Emotional Learning (SEL) into classroom instruction for K-9 students. This approach enables the direct incorporation of SEL programs, such as MindUP, SPARK, and others, into the regular curriculum. Teachers play a crucial role in fostering students' emotional and social development through both structured SEL activities and everyday interactions. School counselors provide essential support, helping teachers adapt SEL programs to meet the diverse needs of students, especially those dealing with trauma or socio-economic challenges.

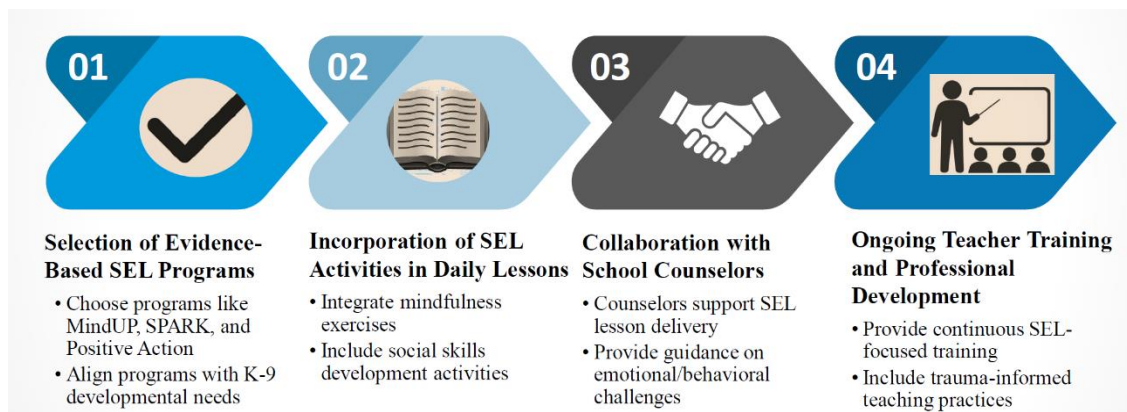


Figure 17: Integrating SEL into Classroom Instruction for K-9 Students

Figure 18 illustrates the step-by-step process for implementing SEL at the schoolwide level. This structured approach embeds SEL into the school culture, fostering a supportive and inclusive environment through coordinated initiatives. SEL becomes a shared responsibility, involving all school staff—administrators, janitors, and support personnel—in promoting a positive school climate. Students also play an active role in building a sense of belonging and emotional safety. Mentoring programs, such as SPARK, provide targeted support for vulnerable students, strengthening their relationships with peers and educators. This approach reinforces that SEL is not just a curriculum component but a holistic framework extending into all aspects of school life. The process begins with establishing a shared vision, where SEL goals align with the school’s mission. Administrators, teachers, and staff collaborate on planning and implementation. Next, school personnel receive training in SEL principles and strategies, equipping them to model and reinforce social-emotional skills.

Schools then integrate SEL into policies and climate, embedding it into rules, disciplinary approaches, and relationship-building efforts. This lays the foundation for structured SEL programs, which incorporate evidence-based curricula like SPARK or

Second Step, ensuring SEL is woven into daily instruction. Beyond structured programs, schools provide student support services through counseling, mentoring, and peer-led initiatives. Family and community engagement further reinforce SEL strategies at home and through external partnerships. To ensure long-term success, schools monitor and evaluate implementation through regular assessments and feedback from students, teachers, and families. Implementing SEL at the schoolwide level creates a fully integrated approach that enhances students' emotional well-being, social skills, and academic success while fostering a positive, supportive school environment.

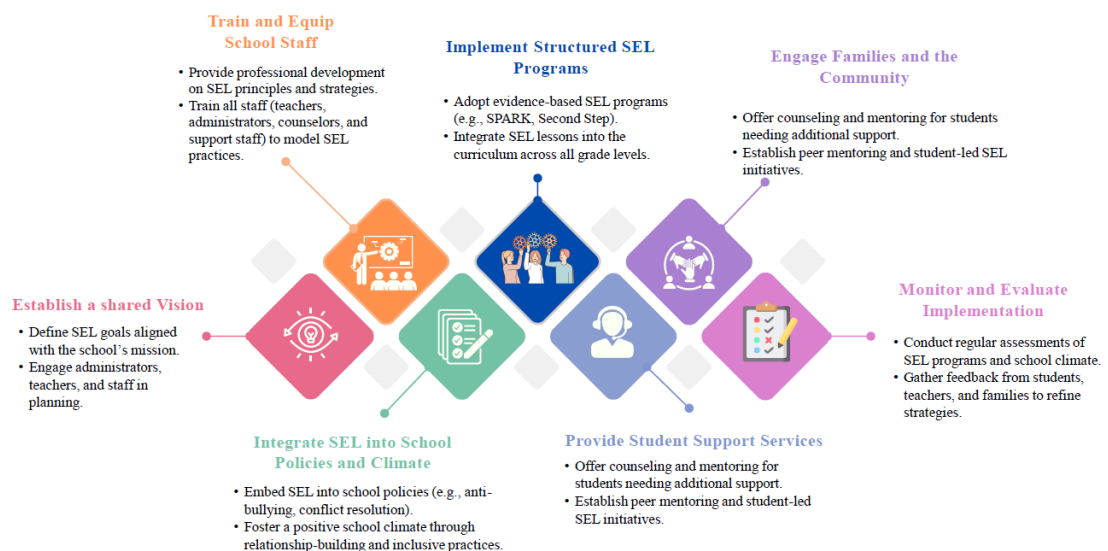


Figure 18: Schoolwide SEL Implementation

Figure 19 presents the expected outcomes of implementing Social-Emotional Learning (SEL) interventions for K-9 students in Lebanon. The chart depicts anticipated improvements in emotional well-being, social skills, academic performance, school climate, student engagement, attendance, and classroom behavior. These expected outcomes are derived from the conducted systematic review, noting that further

validation is needed in future studies. SEL programs are projected to enhance emotional well-being, reaching a level of 8.5 out of 10. Studies, such as Pollak et al. (2024), demonstrated substantial gains in emotional regulation and social competencies following interventions like *You, Me and the Little Monsters*. Similarly, the MindUP program studied by Hai et al. (2021) showed improvements in attention regulation, which played a key role in enhancing emotional health. Social skills are also expected to improve to 9.0 out of 10, reflecting significant advancements in communication and peer relationships after SEL interventions. This aligns with findings from Green et al. (2021) on the SPARK Child Mentoring Program, which reported meaningful gains in emotional regulation and social interaction, particularly among disadvantaged students. On the other hand, academic performance is expected to see moderate improvements, reaching 7.5 out of 10. Programs such as *Second Step* (Top et al., 2016) and MindUP (Hai et al., 2021) have demonstrated positive effects, particularly in high-need schools. However, studies indicate that while SEL programs contribute to short-term academic gains, their sustained academic impact may be less pronounced.

School climate is anticipated to improve significantly, reaching 9.2 out of 10, as interventions like *Positive Action* (Snyder et al., 2012) and *Conscious Discipline* (Anderson et al., 2020) have been shown to enhance school safety, emotional climate, and student well-being. These programs foster a structured and supportive environment, reinforcing a sense of belonging. Similarly, classroom behavior is also expected to improve significantly (9.1 out of 10), as demonstrated by Anderson et al. (2020), whose study on *Conscious Discipline* reported reduced behavioral disruptions, improved self-regulation, and enhanced student-teacher interactions. Student engagement and attendance are projected to improve to 8.0 out of 10. Rivers et al. (2013) found that the

RULER program significantly boosted classroom participation and reduced absenteeism, particularly among at-risk students. SEL programs provide structured support that encourages student involvement and improves attendance consistency.

Overall, well-structured SEL interventions have the potential to foster a positive and inclusive learning environment, equipping students with essential skills for both academic and personal growth. However, further research is needed to validate these outcomes and assess the long-term impact of SEL programs across different educational contexts.

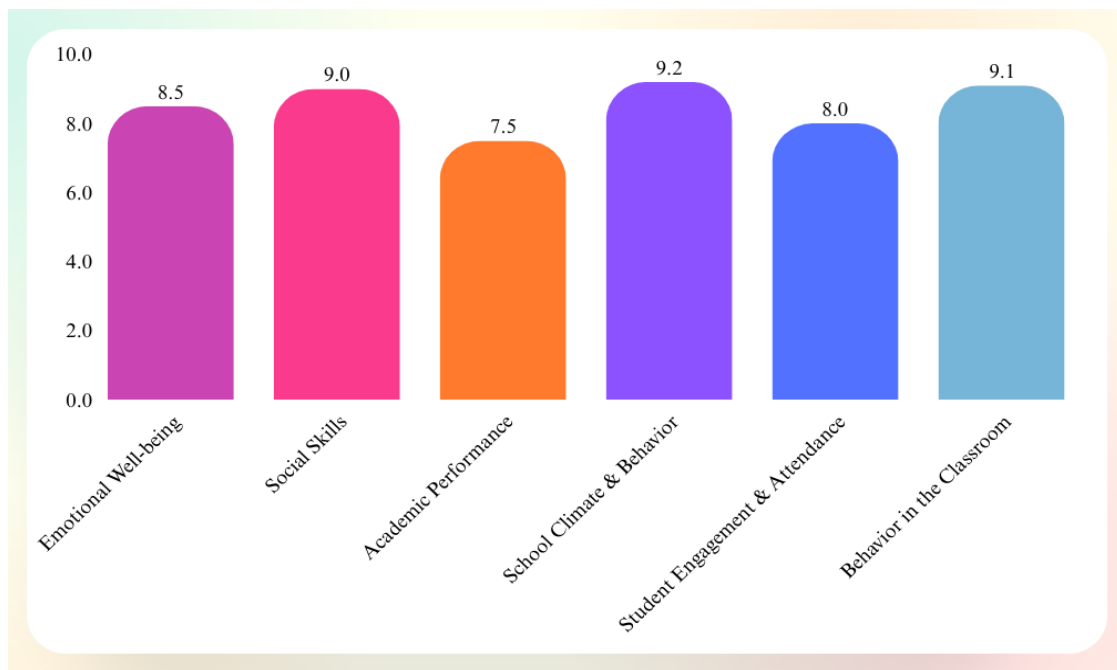


Figure 19: Expected Outcome from SEL Implementation

Future Directions in SEL Research

To further advance SEL research and enhance the effectiveness of these interventions across diverse educational settings, several key areas require special attention. Most existing studies focus on short-term outcomes, leaving the long-term benefits of SEL

unclear. Longitudinal research that tracks the sustained impact of SEL programs over several years is essential to fully understand the lasting effects on students' social-emotional development, academic achievement, and overall well-being. Some studies, such as Hai et al. (2021), have highlighted delayed positive effects, indicating that a more comprehensive examination is necessary to evaluate the full potential of SEL interventions. Additionally, future studies should integrate SEL with core academic subjects. In other words, research should explore how integrating SEL with academic content like literacy and mathematics can create more holistic learning experiences. This approach could provide insights into how SEL not only impacts social and emotional development but also contributes to academic success. A well-rounded educational experience that merges SEL with academics might better prepare students for success both in and out of the classroom. Future research should also explore how technology can enhance SEL implementation, building on findings that show SEL programs generally improve social skills, emotional regulation, and academic outcomes, especially for disadvantaged students. Given that effects often accumulate over time and vary across groups, integrating technology could support sustained engagement, personalized learning, and better tracking of long-term impacts. Tools like SEL-focused apps (e.g., Mood Meter), virtual reality experiences for empathy training, and AI-based platforms for real-time emotional feedback could be especially useful. Careful design is essential to avoid unintended negative outcomes and ensure fidelity to program goals. Digital tools might also address assessment limitations and support teacher delivery, ultimately strengthening SEL's positive influence on classroom climate and student well-being. Another consideration that should be considered in Future studies is the use of age- and context-sensitive programs. Since SEL outcomes can vary by age and

educational context, there is a need for research on how SEL programs can be tailored for older students in middle and high school. Additionally, further studies should explore how SEL can be adapted to different educational systems worldwide, ensuring its relevance and effectiveness across diverse contexts. Furthermore, research should compare the effectiveness and sustainability of teacher-led versus externally delivered SEL programs. Investigating the fidelity of implementation for both approaches can offer valuable insights into which methods are most effective and scalable in various educational settings, helping to refine delivery strategies for broader impact. Lastly, future research Lastly, Future research should focus on uncovering the mechanisms behind SEL program effectiveness by examining the underlying psychological and social processes that drive positive outcomes. In other words, to conduct mechanism-focused research to understand which specific components of SEL programs contribute most to their success. Understanding how and why SEL interventions impact skills like emotional regulation, resilience, and peer relationships can help refine program design and delivery. Mechanism-focused studies could also reveal which components are most effective for different student groups, allowing for more targeted and efficient interventions. This deeper insight would ultimately strengthen the long-term impact and scalability of SEL initiatives

Additionally, it is recommended to conduct another study aimed at validating the recommendations for integration of SEL within the Lebanese Educational system. In this regard, an outline of a framework that can be adapted in future studies to develop a methodology for validating the recommendations is presented herein. This framework defines the key steps to be considered in the validation process, including data collection, stakeholder interviews, workshops, and survey administration.

Future research aimed at validating the recommendations for implementing social-emotional learning (SEL) in Lebanon should begin with systematic data collection from key stakeholders. The Director of Counseling and Guidance at the Lebanese Ministry of Education and Higher Education should be contacted to obtain information on existing SEL programs, the availability of certified centers or counselors, and the role of non-governmental organizations (NGOs) in promoting SEL. Additionally, the Center for Educational Research and Development (CRDP) should be consulted to access reports on previously implemented SEL programs and the status of the proposed national SEL framework. The collected data should be compiled into a structured database, including relevant details such as key stakeholders' contact information, the types of SEL programs in use, and their certification status. This database will serve as a foundation for identifying relevant participants for subsequent workshops, interviews, and surveys, facilitating a comprehensive understanding of current SEL initiatives in Lebanon.

The second step involves conducting interviews with counselors to gather qualitative data on the implementation and effectiveness of social-emotional learning (SEL) programs in Lebanon. The primary aim is to capture the perspectives of counselors regarding the challenges, effectiveness, and potential impact of SEL interventions on students' well-being and academic success. The methodology for conducting interviews should follow a structured approach involving multiple phases, preparation, interview and data analysis. The preparation and planning phase would involve setting clear objectives for the interviews, focusing on capturing counselors' perspectives on SEL implementation in Lebanon, including challenges, effectiveness, and impact. Counselors currently involved in or interested in SEL programs would be

recruited through the Ministry of Education and selected schools. Interview questions would be carefully developed, combining open-ended and structured formats to elicit detailed responses. Necessary permissions and informed consent would be obtained, ensuring participants' understanding and confidentiality. Interviews would follow a structured, semi-structured, or unstructured format, beginning with an introduction to the study's objectives, followed by the main interview, using active listening and probing techniques to gather rich insights, and concluding with feedback collection. Participant responses would be recorded (with consent) and transcribed verbatim for accuracy. Data would be securely stored, and confidentiality would be maintained throughout. Finally, the transcribed data would undergo analysis to extract key themes and insights.

The surveys should be designed to collect broader perspectives on the integration of social-emotional learning (SEL) in Lebanese schools, specifically from K-9 teachers. The surveys would complement the data gathered through interviews. The survey should, in general, follow a structured approach to ensure comprehensive and valid feedback. The process for conducting the surveys would involve several key steps. Preparation and planning would begin by clearly defining the survey's purpose, focusing on gathering teachers' insights regarding the integration of SEL in Lebanese schools. K-9 teachers would be recruited via social media platforms such as Twitter, Facebook, and LinkedIn, as well as through communication channels suggested by the Ministry of Education, including email, to ensure broad participation. A user-friendly, digital survey would be developed using accessible platforms like Google Forms or SurveyMonkey, incorporating both quantitative and qualitative questions. Introductory materials, including background information on SEL and survey instructions, would be

prepared and distributed in advance. The survey itself would start with a brief introduction outlining its objectives and the importance of participants' feedback for the SEL validation framework. It would include a mix of closed- and open-ended questions to capture detailed perspectives on SEL challenges and opportunities. Responses would be collected in a structured manner using digital tools that automatically compile the data. Throughout the survey process, participant anonymity and data privacy would be maintained. Finally, the collected data would be analyzed to identify key themes and trends related to SEL integration.

The workshops would be designed as interactive sessions aimed at gathering detailed feedback and insights from stakeholders, including representatives from the Ministry of Education, school counselors, and teachers. They would provide an opportunity for participants to engage in collaborative discussions, share experiences, and refine recommendations for implementing social-emotional learning (SEL) in the Lebanese context. Preparation and planning would involve clearly defining the workshop's purpose and expected outcomes, identifying and inviting key stakeholders via email, developing a structured agenda combining presentations, group discussions, and feedback sessions, and preparing background materials on SEL and the proposed framework. The workshops would begin with an introduction outlining objectives and setting the tone for collaboration. Participants would then break into smaller groups to discuss key aspects of the recommendations, guided by specific themes or questions. Interactive activities such as case studies, role-playing, and scenario-based exercises would be incorporated to encourage practical reflection on SEL challenges and solutions. Throughout the workshops, facilitators would document feedback

systematically to ensure that all contributions are captured for further analysis and refinement of the SEL implementation framework.

Summary, Conclusions and Implications for Practice and Research

This thesis aimed to conduct a systematic review to explore the effectiveness of integrating Social Emotional Learning (SEL) programs in enhancing academic performance and classroom behavior in school settings, both globally and in Lebanon. The review initially considered studies published between 1990 and 2024. However, after applying a rigorous selection process based on PRISMA guidelines, the final analysis included eighteen studies published between 2009 and 2024. The research synthesized findings from the selected studies and evaluated them using the Mixed Methods Appraisal Tool (MMAT) 2018 and Council for Exceptional Children (CEC) standards. The systematic review revealed consistent evidence supporting the positive impact of SEL interventions on students' social-emotional competencies, classroom engagement, and behavior. Programs such as *You, Me and the Little Monsters* (Pollak et al., 2024) and *MindUP* (Hai et al., 2021) demonstrated significant improvements in emotional regulation and peer connectedness. Similarly, *SPARK Child Mentoring* (Green et al., 2021) and *Incredible Years Teacher Classroom Management* (Gaspar et al., 2023) contributed to better emotional regulation, communication, and behavior, particularly among students with behavioral challenges. Studies also showed that SEL interventions led to enhancements in school climate and student engagement, as evidenced by *Positive Action* (Snyder et al., 2012). However, some studies, such as the one conducted by Allara et al. (2019), highlighted mixed results regarding the outcome of implementing the program *Diario della Salute (My Health Diary)*, where unintended consequences, such as increased psychosomatic complaints, were reported.

Despite the positive findings, some studies questioned the extent to which SEL interventions directly influence academic performance. While programs like Second Step (Top et al., 2016) showed improvements in problem behaviors and academic performance in high-need schools, others, such as that done by Cipriano et al. (2019) using the RULER SEL program, noted improvements in student engagement and behavior without significant academic gains. The review also identified gaps related to long-term effectiveness, contextual adaptability, and the need for stronger methodological rigor in evaluating SEL programs. The study provided recommendations for implementing SEL interventions in Lebanon, with expected outcomes including enhanced emotional well-being, social skills, academic performance, school climate and behavior, student engagement, and classroom behavior. Additionally, recommendations for future research emphasized designing robust evaluation frameworks incorporating workshops, interviews, and surveys to validate SEL effectiveness in different educational settings in Lebanon.

This systematic review has reaffirmed the growing consensus within the literature regarding the pivotal role of Social and Emotional Learning (SEL) programs in advancing student outcomes across a range of domains. The findings underscore that SEL interventions contribute meaningfully to the development of emotional well-being, enhancement of social competencies, improvements in classroom behavior, and the cultivation of a more supportive and inclusive school climate. Although the evidence linking SEL to direct academic achievement remains somewhat inconclusive, the indirect benefits, particularly in terms of student engagement, emotional regulation, and peer relationships, point to SEL's essential role in fostering holistic educational development.

Within the Lebanese context, these findings carry particular significance. Given the country's complex socio-political landscape and persistent educational challenges, the successful adoption of SEL frameworks demands careful contextualization. It is not sufficient to transplant models developed elsewhere; rather, strategic adaptation to local cultural, institutional, and resource conditions is imperative. This necessitates investment in sustained teacher professional development, the creation of supportive policy environments, and the engagement of a broad range of educational stakeholders to ensure both the relevance and the longevity of SEL initiatives. Without such deliberate and systemic efforts, the risk of superficial implementation, characterized by fragmented or short-lived interventions, remains high.

Critically, this review has also exposed substantive limitations within the existing body of research. Variability in intervention designs, heterogeneity in outcome measures, and a paucity of longitudinal studies compromise the ability to draw definitive conclusions regarding the long-term efficacy and scalability of SEL programs. Furthermore, methodological shortcomings, including small sample sizes, inconsistent implementation fidelity, and the limited cultural diversity of study contexts, highlight the need for more rigorous, context-sensitive investigations. Future research must prioritize robust evaluation methodologies, including large-scale randomized controlled trials and longitudinal cohort studies, while ensuring the inclusion of diverse educational settings that reflect the realities of implementing SEL in under-resourced or politically unstable environments such as Lebanon.

Ultimately, while this review affirms the significant potential of SEL interventions to enhance student outcomes, their sustainable impact cannot be assumed. Instead, it must be intentionally cultivated through thoughtful program design,

culturally responsive adaptation, and ongoing, rigorous evaluation. SEL integration should not be seen as an ancillary initiative but as a fundamental reimagining of how education nurtures the social and emotional dimensions of learning. A reflective and critical approach is essential to unlock SEL's transformative potential, not only in supporting individual student development but also in reshaping educational environments into more equitable, empathetic, and resilient communities. This is particularly crucial in contexts facing challenges and change. Thus, the future of education requires that SEL be embraced, not merely as a program, but as a philosophy central to the mission of schools.

Limitations of this Study

Although this systematic review offers valuable insights into the impact of Social-Emotional Learning (SEL) interventions, it is important to acknowledge several inherent limitations that may influence the interpretation and generalization of the findings. One primary limitation relates to potential selection and publication biases. The studies included in this review were restricted to those meeting predefined inclusion criteria and sourced from a select number of academic databases. Consequently, there is a possibility that relevant research published in non-indexed journals, gray literature, or unpublished theses and reports may have been overlooked. This exclusion may result in a partial or skewed representation of the available evidence, particularly as studies with statistically significant results are more likely to be published and accessible through major databases. Thus, the conclusions drawn from this review should be interpreted with an awareness of these potential biases.

A second critical limitation pertains to methodological constraints observed across the reviewed studies. There was considerable heterogeneity in study designs,

intervention modalities, and outcome measurement tools, which complicates efforts to conduct direct comparisons or synthesize results meaningfully across interventions. Many studies employed diverse methods to assess social-emotional competencies and behavioral outcomes, and often lacked standardized evaluation frameworks. This methodological variability reduces the reliability and internal validity of aggregated findings. Furthermore, several studies were based on relatively small sample sizes, limiting the statistical power and increasing the risk of failing to detect a true effect when one exists. In other words, the smaller the sample size, the greater the chance that the study might incorrectly conclude that the intervention had no impact, even if it did. The absence of rigorous randomized controlled trial designs in some cases further constrains the strength of causal inferences that can be drawn regarding SEL program effectiveness.

In addition, contextual and cultural differences across study settings present a significant challenge to the universal applicability of the findings. While SEL interventions have demonstrated overall positive effects in diverse geographic and educational contexts, their efficacy is likely mediated by a variety of contextual factors, including differences in school organizational structures, the extent of teacher professional development in SEL, student demographic profiles, and prevailing societal and cultural norms. As such, the direct transferability of results to the Lebanese educational context must be approached with caution. The findings emphasize the need for the development of contextually adapted SEL frameworks that are culturally sensitive and responsive to the specific needs and realities of Lebanese schools and communities.

Lastly, concerns regarding the longitudinal effects and sustainability of SEL interventions emerged as another limitation. Several studies noted that immediate post-intervention improvements in social-emotional competencies or behavioral outcomes were not consistently observed, suggesting that the full benefits of SEL programs may manifest only over time. Moreover, the majority of studies included relatively short follow-up periods, thereby providing limited insight into the durability of SEL outcomes. Without extended longitudinal research that tracks participants over several years, it remains unclear whether the initial gains achieved through SEL interventions are maintained, fade, or evolve in different ways. Future research efforts should prioritize long-term evaluation studies to more comprehensively assess the sustained impact of SEL programming on students' academic, social, and emotional development.

APPENDIX A

PART 1 – CEC STANDARDS (2014)

Table 1. Quality Indicators

	Quality indicator	Notes
1.0. Context and setting. <i>The study provides sufficient information regarding the critical features of the context or setting.</i>		
	1.1. The study describes critical features of the context or setting relevant to the review; for example, type of program or classroom, type of school (e.g., public, private, charter, preschool), curriculum, geographic location, community setting, socioeconomic status, physical layout.	B
2.0. Participants. <i>The study provides sufficient information to identify the population of participants to which results may be generalized and to determine or confirm whether the participants demonstrated the disability or difficulty of focus.</i>		
	2.1. The study describes participant demographics relevant to the review (e.g., gender, age/grade, race/ethnicity, socioeconomic status, language status).	B
	2.2. The study describes disability or risk status of the participants (e.g., specific learning disability, autism spectrum disorder, behavior problem, at risk for reading failure) and method for determining status (e.g., identified by school using state IDEA criteria, teacher nomination, standardized intelligence test, curriculum-based measurement probes, rating scale).	B
3.0. Intervention agent. <i>The study provides sufficient information regarding the critical features of the intervention agent.</i>		
	3.1. The study describes the role of the intervention agent (e.g., teacher, researcher, paraprofessional, parent, volunteer, peer tutor, sibling, technological device/computer) and, as relevant to the review, background variables (e.g., race/ethnicity, educational background/licensure).	B
	3.2. The study describes any specific training (e.g., amount of training, training to a criterion) or qualifications (e.g., professional credential) required to implement the intervention, and indicates that the interventionist has achieved them.	B
4.0. Description of practice. <i>The study provides sufficient information regarding the critical features of the practice (intervention), such that the practice is clearly understood and can be reasonably replicated.</i>		
	4.1. The study describes detailed intervention procedures (e.g., intervention components, instructional behaviors, critical or active elements, manualized or scripted procedures, dosage) and intervention agents' actions (e.g., prompts, verbalizations, physical behaviors, proximity), or cites one or more accessible sources that provide this information.	B
	4.2. When relevant, the study describes materials (e.g., manipulatives, worksheets, timers, cues, toys), or cites one or more accessible sources providing this information.	B
5.0. Implementation fidelity. <i>The practice is implemented with fidelity.</i>		
	5.1. The study assesses and reports implementation fidelity related to adherence using direct, reliable measures (e.g., observations using a checklist	B

	of critical elements of the practice).	
	5.2. The study assesses and reports implementation fidelity related to dosage or exposure using direct, reliable measures (e.g., observations or self-report of the duration, frequency, curriculum coverage of implementation).	B
	5.3. As appropriate, the study assesses and reports implementation fidelity (a) regularly throughout implementation of the intervention (e.g., beginning, middle, end of the intervention period), and (b) for each interventionist, each setting, and each participant or other unit of analysis. If either adherence or dosage is assessed and reported, this item applies to the type of fidelity assessed. If neither adherence nor dosage is assessed and reported, this item is not applicable.	B
6.0. Internal validity. <i>The independent variable is under the control of experimenter. The study describes the services provided in control and comparison conditions and phases. The research design provides sufficient evidence that the independent variable causes change in the dependent variable or variables. Participants stayed with the study, so attrition is not a significant threat to internal validity.</i>		
	6.1. The researcher controls and systematically manipulates the independent variable.	B
	6.2. The study describes baseline (single-subject studies) or control/comparison (group comparison studies) conditions, such as the curriculum, instruction, and interventions (e.g., definition, duration, length, frequency, learner: instructor ratio).	B
	6.3. Control/comparison-condition or baseline-condition participants have no or extremely limited access to the treatment intervention.	B
	6.4. The study clearly describes assignment to groups, which involves participants (or classrooms, schools, or other unit of analysis) being assigned to groups in one of the following ways: (a) randomly; (b) nonrandomly, but the comparison groups are matched very closely to the intervention group (e.g., matched on prior test scores, demographics, a propensity score; see Song & Herman, 2010); (c) nonrandomly, but techniques are used to measure differences and, if meaningful differences are identified—for example, statistically significant difference, difference greater than 5% of a standard deviation (What Works Clearinghouse, 2011)—to statistically control for any differences between groups on relevant pretest scores or demographic characteristics (e.g., statistically adjust for confounding variable through techniques such as ANCOVA or propensity score analysis); or (d) nonrandomly on the basis of a reasonable cutoff point (regression discontinuity design).	G
	6.5. The design provides at least three demonstrations of experimental effects at three different times.	S
	6.6. For single-subject research designs with a baseline phase (alternating treatment designs do not require a baseline), all baseline phases include at least three data points (except when fewer are justified by study author due to	S

	reasons such as measuring severe or dangerous problem behaviors and zero baseline behaviors with no likelihood of improvement without intervention) and establish a pattern that predicts undesirable future performance (e.g., increasing trend in problem behavior, consistently infrequent exhibition of appropriate behavior, highly variable behavior).	
	6.7. The design controls for common threats to internal validity (e.g., ambiguous temporal precedence, history, maturation, diffusion) so plausible, alternative explanations for findings can be reasonably ruled out. Commonly accepted designs such as reversal (ABAB), multiple-baseline, changing criterion, and alternating treatment address this quality indicator when properly designed and executed, although other approaches can be accepted if study authors justify how they ruled out alternative explanations for findings or control for common threats to internal validity.	S
	6.8. Overall attrition is low across groups (e.g., < 30% in a 1-year study).	G
	6.9. Differential attrition (between groups) is low (e.g., ≤10%) or is controlled for by adjusting for noncompleters (e.g., conducting intent-to-treat analysis).	G
7.0. Outcome measures/dependent variables. Outcome measures are applied appropriately to gauge the effect of the practice on study outcomes. Outcome measures demonstrate adequate psychometrics.		
	7.1. Outcomes are socially important (e.g., they constitute or are theoretically or empirically linked to improved quality of life, an important developmental/learning outcome, or both).	B
	7.2. The study clearly defines and describes measurement of the dependent variables.	B
	7.3. The study reports the effects of the intervention on all measures of the outcome targeted by the review (p levels and effect sizes or data from which effect sizes can be calculated for group comparison studies; graphed data for single-subject studies), not just those for which a positive effect is found.	B
	7.4. Frequency and timing of outcome measures are appropriate. For most single-subject studies, a minimum of three data points per phase is necessary if a given phase is to be considered as part of a possible demonstration of experimental effect (except when fewer are justified by study author due to reasons such as measuring severe or dangerous problem behaviors and zero baseline behaviors with no likelihood of improvement without intervention). For alternating treatment designs, at least four repetitions of the alternating sequence are required (e.g., ABABABAB; see Kratochwill et al., 2013).	B
	7.5. The study provides evidence of adequate internal reliability, interobserver reliability, test-retest reliability, or parallel-form reliability, as relevant (e.g., score reliability coefficient ≥ .80, interobserver agreement ≥ 80%, kappa ≥ 60%).	B
	7.6. The study provides adequate evidence of validity, such as content, construct, criterion (concurrent or predictive), or social validity.	G
8.0. Data Analysis. Data analysis is conducted appropriately. The study reports information on effect size.		
	8.1. Data analysis techniques are appropriate for comparing change in	G

	performance of two or more groups (e.g., t tests, ANOVAs/MANOVAs, ANCOVAs/MANCOVAs, hierarchical linear modeling, structural equation modeling). If atypical procedures are used, the study provides a rationale justifying the data analysis techniques.	
	8.2. The study provides a single-subject graph clearly representing outcome data across all study phases for each unit of analysis (e.g., individual, classroom, other group of individuals) to enable determination of the effects of the practice. Regardless of whether the study report includes visual or other analyses of data, graphs depicting all relevant dependent variables targeted by the review should be clear enough for reviewers to draw basic conclusions about experimental control using traditional visual analysis techniques (i.e., analysis of mean, level, trend, overlap, consistency of data patterns across phases).	S
	8.3. The study reports one or more appropriate effect size statistic (e.g., Cohen's d, Hedge's G, Glass's Δ , η^2) for all outcomes relevant to the review being conducted, even if the outcome is not statistically significant, or provides data from which appropriate effect sizes can be calculated.	G

Note. B = applies to both group comparison and single-subject research studies; G = indicator applies only to group comparison studies; S = indicator applies only to single-subject research studies; IDEA = Individuals with Disabilities Education Act.

Table 2: Evidence-Based Classifications

1. Evidence-based practice

- (a) Must be supported by at least
 - four methodologically sound group comparison studies with non-random assignment to groups, positive effects, and at least 120 total participants across studies; or
 - five methodologically sound single-subject studies with positive effects and at least 20 total participants across studies; OR
- (b) Meet at least 50% of criteria for two or more of the study designs described in (a). For example, the practice is supported by
 - one methodologically sound group comparison study with random assignment, positive effects, and at least 30 total participants, as well as three methodologically sound single-subject research studies with positive effects and at least 10 total participants; or
 - three methodologically sound single-subject studies with positive effects and at least 10 total participants, as well as two methodologically sound group comparison studies with non-random assignment, positive effects, and at least 60 total participants; AND
- (c) Include no methodologically sound studies conducted with negative effects and at least a 3:1 ratio of methodologically sound studies with positive effects to methodologically sound studies with neutral/mixed effects. For this item, CEC considers group experimental, non-randomly assigned group comparison, and single-subject design studies collectively.

2. Potentially evidence-based practice

- (a) Must be supported by
 - one methodologically sound group comparison study with random assignment to groups and positive effects;
 - two or three methodologically sound group comparison studies with non-random assignment to groups; and positive effects; or
 - two to four methodologically sound single subject studies with positive effects; OR
- (b) Meet at least 50% of criteria for two or more of the study designs described in (a). For example, practice is supported by one methodologically sound single-subject study with positive effects and one methodologically sound non-randomly assigned group comparison study with positive effects; AND
- (c) Include no methodologically sound studies conducted with negative effects, and at least a 2:1 ratio of methodologically sound studies with positive effects to methodologically sound studies with neutral/mixed effects. For this item, CEC considers group experimental, non-randomly assigned group comparison, and single-subject design studies collectively.

3. Mixed evidence

- (a) Must meet criterion (a) or (b) for evidence-based practice or potentially evidence-based practice (regarding number of methodologically sound studies with positive effects supporting the practice) AND
- (b) The ratio of methodologically sound studies with positive effects to methodologically sound studies with neutral/mixed effects is less than 2:1; OR one or more methodologically sound studies conducted with negative effects, as long as methodologically sound studies with negative effects do not outnumber methodologically sound studies with positive effects.

4. Insufficient evidence

Insufficient research exists to meet the criteria for any of the other evidence-based categories.

5. Negative effects

- (a) Must include more than one methodologically sound study (of any acceptable design) conducted with negative effects, AND
- (b) The number of methodologically sound studies conducted with negative effects outnumbers the number of methodologically sound studies with positive effects.

PART 2 – CEC BASED EVALUATION OF SELECTED STUDIES

Study 1: Promoting Peer Connectedness Through Social-Emotional Learning: Evaluating the Intervention Effect Mechanisms and Implementation Factors of a Social-Emotional Learning Programme for 9 to 12-Year-Olds (Pollak et al., 2024)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study specifies the Austrian primary-secondary school transition context and details the implementation setting in schools.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The study includes 9 to 12-year-olds transitioning to secondary school, with details on sample size, gender distribution, and classroom grouping. No focus on specific disabilities or difficulties.
3. Intervention agent – Clearly described and replicable?	Yes	The social-emotional learning program is detailed, including session content, objectives, and links to program materials.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Partial	A clustered waitlist-control evaluation design is used. However, randomization was not applied in group assignments, affecting the rigor of comparisons.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	Measures include social-emotional skills, peer connectedness, happiness, and classroom climate. Standardized questionnaires and multiple measurement points enhance validity.
6. Internal validity – Results applicable to similar populations/settings?	Partial	Findings are applicable to similar educational settings but may be limited by the non-randomized assignment of intervention and control groups.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Findings support the intervention’s impact on social skills, peer connectedness, and happiness, while also identifying implementation challenges.
8. Data Analysis – Appropriate methods used?	Yes	Statistical analysis includes comparisons between intervention and control groups, with additional analyses considering implementation fidelity.
Overall Quality Rating (High / Medium / Low)	Medium	The study is well-structured and provides useful insights, but limitations in randomization and generalizability affect its robustness.

**Study 2: Impact of MindUP on elementary school students’ classroom behaviors:
A single-case design pilot study (Hai et al., 2021)**

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study clearly describes the school setting, grade level (5th grade), and intervention context (MindUP in general education classrooms).
2. Participants – Defined population and relevant disability/difficulty?	Partial	The study focuses on students with behavioral challenges but does not include students in special education; participant selection criteria are described.
3. Intervention agent – Clearly described and replicable?	Yes	The MindUP program is described in detail, including lesson content, structure, teacher training, and fidelity monitoring.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	A single-case experimental design (A-B design) was used, which is appropriate for evaluating intervention effects on individual behavior.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	Behavioral outcomes were measured using DBR-SIS, a validated tool for assessing student behavior. Clear definitions of on-task and off-task behaviors were provided.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The findings apply to 5th-grade students with behavioral challenges in general education but may not be generalizable to students in special education or other age groups.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Results are presented with supporting data and include discussion on expected and unexpected outcomes, along with implications for future research.
8. Data Analysis – Appropriate methods used?	Yes	Visual analysis, percentage of non-overlapping data, and multilevel analysis were used to assess intervention effects, which are suitable for single-case studies.
Overall Quality Rating (High / Medium / Low)	Medium	The study is well-structured with appropriate methods but has limitations regarding generalizability and exclusion of students in special education.

Study 3: Evaluation of the SPARK Child Mentoring Program: A Social and Emotional Learning Curriculum for Elementary School Students (Green et al., 2021)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study details the school setting, student demographics, and the socio-economic background of participants.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The study includes a well-defined sample of 4th and 5th-grade students from a Title 1 school with a predominantly Hispanic and economically disadvantaged population.
3. Intervention agent – Clearly described and replicable?	Yes	The SPARK Child Mentoring program is well-documented, including session structure, facilitator training, and fidelity monitoring.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	A randomized controlled trial (RCT) design was employed, which is appropriate for evaluating program efficacy.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The study uses established measures such as the 3PI, CDP-Child Version, and DERS-SF, which are relevant to the study's aims.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The study is limited to one school and a specific demographic, which may limit broader applicability.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The results demonstrate statistically significant improvements in knowledge and skills, supporting the effectiveness of the intervention.
8. Data Analysis – Appropriate methods used?	Yes	The study uses ANCOVA and one-way ANOVA to analyze pre- and post-intervention differences, appropriate for evaluating program impact.
Overall Quality Rating (High / Medium / Low)	High	The study is well-designed, with rigorous methodology, valid measures, and strong findings, though generalizability is somewhat limited.

**Study 4: A School Based Program to Promote Well Being in Preadolescents:
Results from a Cluster Quasi Experimental Controlled Study (Allara et al., 2019)**

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study describes the setting (school-based intervention), locations (Northern and Southern Italian regions), and the timeframe (January–May 2013).
2. Participants – Defined population and relevant disability/difficulty?	Yes	The study defines the target population as 12- to 13-year-old students and provides details on sample size (2630 students) and sociodemographic characteristics, including socioeconomic status and nationality.
3. Intervention agent – Clearly described and replicable?	Yes	The intervention, "Diario della Salute," includes five standardized interactive lessons and two narrative booklets. The program's objectives and content are clearly outlined.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study employs a quasi-experimental cluster-controlled design, which is appropriate for evaluating school-based interventions. Schools were matched based on key characteristics.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Partial	The study uses validated instruments (HBSC Symptom Checklist, Aggression Scale, and health behavior measures). However, the unexpected reduction in subjective well-being raises concerns about measurement interpretation.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The study provides useful insights for similar school-based programs, but the voluntary participation of schools and self-selection into intervention or comparison groups may limit external validity.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Partial	The findings are logically presented, but the unexpected negative impact on well-being suggests possible iatrogenic effects, which require further investigation.
8. Data Analysis – Appropriate methods used?	Yes	Statistical analyses accounted for clustering, socioeconomic confounders, and baseline levels. The study used Chi-squared tests, t-tests, and mixed-effects models for adjusted program effects.
Overall Quality Rating (High / Medium / Low)	Medium	The study is well-structured and methodologically sound, but concerns regarding subjective well-being outcomes and generalizability slightly reduce its overall quality.

Study 5: Implementation in the “real world” of an evidence-based social and emotional learning program for teachers: effects on children social, emotional, behavioral and problem-solving skills (Gaspar et al., 2023)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study describes the implementation of IY-TCM in Portugal under the Academias Gulbenkian do Conhecimento initiative, including the setting (preschools and primary schools).
2. Participants – Defined population and relevant disability/difficulty?	Partial	Participants (teachers and children aged 2–10) are well-defined, but there is no specific mention of disabilities or learning difficulties; focus is on social-emotional learning.
3. Intervention agent – Clearly described and replicable?	Yes	The intervention (IY-TCM) is well-detailed, including program structure, training, and implementation methods.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study employs a pre-post intervention design using ANOVA and moderation analyses, appropriate for evaluating the effectiveness of an SEL intervention.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	Uses standardized instruments (SDQ, PKBS-2, SSBS-2, Wally Problem Solving Test) with good reliability and validity for assessing social-emotional and behavioral outcomes.
6. Internal validity – Results applicable to similar populations/settings?	Partial	While the intervention shows effectiveness in Portugal, the study does not extensively discuss applicability to other countries or diverse educational contexts.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Results indicate significant improvements in social-emotional skills and reductions in problem behavior, with conclusions well-supported by statistical analysis.
8. Data Analysis – Appropriate methods used?	Yes	Uses ANOVA and moderation analyses, which are suitable for comparing pre- and post-intervention effects and identifying moderating factors.
Overall Quality Rating (High / Medium / Low)	High	The study is well-designed, uses validated measures, and provides strong evidence of intervention effectiveness, though generalizability is somewhat limited.

Study 6: Improving Elementary School Quality Through the Use of a Social-Emotional and Character Development Program: A Matched-Pair, Cluster-Randomized, Controlled Trial in Hawaii (Snyder et al., 2012)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study took place in 20 racially/ethnically diverse public elementary schools in Hawaii, with a need for improvement (low test scores, high percentage of students on free/reduced lunch).
2. Participants – Defined population and relevant disability/difficulty?	Yes	Participants were students, teachers, and parents in elementary schools (K-5/K-6). The study focused on school quality and safety rather than specific disabilities/difficulties.
3. Intervention agent – Clearly described and replicable?	Yes	The Positive Action (PA) program was well-documented, including training sessions, booster sessions, and implementation fidelity.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	A matched-pair, cluster-randomized, controlled trial was conducted, which is a robust design for evaluating school-wide interventions.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The study used school-level archival data and the School Quality Survey (SQS), which included multiple indicators (e.g., safety, involvement, satisfaction). The measures were appropriate for assessing school quality.
6. Internal validity – Results applicable to similar populations/settings?	Partial	While the findings are relevant to similar schools, generalizability may be limited due to the unique context of the Hawaii school system and variations in implementation fidelity.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Results showed significant improvements in school quality in intervention schools, supported by multiple respondent groups (teachers, parents, students).
8. Data Analysis – Appropriate methods used?	Yes	Matched-paired t-tests, permutation tests, and random-intercept growth curve models were used to analyze results, ensuring statistical rigor.
Overall Quality Rating (High / Medium / Low)	High	The study used a strong design, reliable measures, and appropriate analyses, making its findings credible and applicable to school-wide interventions.

Study 7: Effects of second step curriculum on behavioral and academic outcomes in 5th and 8th grade students: a longitudinal study on character development (Top et al., 2016)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study describes the school setting (open-enrollment charter schools in Texas) and provides details on treatment and control groups.
2. Participants – Defined population and relevant disability/difficulty?	Partial	The study includes a well-defined student sample (grades 5-8) but does not focus on students with disabilities or specific difficulties.
3. Intervention agent – Clearly described and replicable?	Yes	The Second Step curriculum and its implementation (four semesters) are described in sufficient detail to allow replication.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	A quasi-experimental design with non-equivalent groups was used, which is appropriate for evaluating the intervention in real-world settings.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Partial	Academic achievement (GPA) and observed behaviors were used, but no mention of reliability or validity of behavioral measures is provided.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The study provides useful insights, but generalizability may be limited due to self-selection of schools and lack of randomization.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Results are presented logically with statistical evidence supporting conclusions on behavioral and academic changes.
8. Data Analysis – Appropriate methods used?	Yes	A three-level longitudinal growth model analysis was conducted using SPSS and HLM 7 software, which is appropriate for analyzing longitudinal data.
Overall Quality Rating (High / Medium / Low)	Medium	The study provides useful findings with appropriate methods, but limitations in generalizability and lack of reliability discussion for behavioral measures affect its rating.

Study 8: Shaping classroom social experiences through collaborative small-group discussions (Lin et al., 2022)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study clearly describes the setting: 12 fifth-grade classrooms in two public middle/intermediate schools in the U.S. The study provides details on school demographics and instructional methods.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The study includes 250 students (Mage = 10.98, 52% female) and 6 teachers. It specifies student demographics, including ELLs (37%) and students with IEPs (14%).
3. Intervention agent – Clearly described and replicable?	Yes	The CSR intervention is well-defined, detailing its implementation, comparison conditions, and expected impacts.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	A quasi-experimental design was used, with three conditions (CSR, RA, RI) to assess the effects of collaborative small-group discussions. The design aligns with the research question.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The study uses validated measures for interpersonal (peer social acceptance, aggression) and intrapersonal (social competence) experiences. Internal consistency is reported ($\alpha = .82$ to $.87$).
6. Internal validity – Results applicable to similar populations/settings?	Partial	The study is limited to fifth-grade students in two schools, which may restrict generalizability. However, findings are relevant to similar educational settings.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Results are clearly presented, showing CSR students had improved social acceptance and lower aggression. Qualitative interviews support quantitative findings.
8. Data Analysis – Appropriate methods used?	Yes	Generalized linear modeling (Proc Genmod in SAS 9.4) was used, appropriate for the study design and data distribution.
Overall Quality Rating (High / Medium / Low)	High	The study is well-designed, with a clearly described intervention, valid measures, and appropriate analysis. Generalizability is somewhat limited but does not compromise the study's quality.

Study 9: Teacher fidelity to Conscious Discipline and children’s executive function skills (Anderson et. al., 2020)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study describes the Conscious Discipline program, its implementation in classrooms, and its relevance to executive function (EF) development. The study context includes preschool settings across the Midwest.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The study includes a well-defined sample of 293 preschool children from 45 classrooms, with demographic details provided (age, ethnicity, and parental education). The focus is on EF skills, but no specific disability/difficulty was the primary criterion.
3. Intervention agent – Clearly described and replicable?	Yes	The Conscious Discipline program is described, including teacher training and fidelity measures. However, the intervention was naturally implemented rather than controlled by researchers.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Partial	The study is correlational, not experimental or quasi-experimental. It examines associations rather than causal effects, which limits the strength of conclusions about Conscious Discipline's impact.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The study uses validated assessments for EF (MEFS) and academic/social skills (BBCS-3:R). Reliability and validity of these measures are supported by previous research.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The sample is regionally specific (Midwest preschool classrooms), and generalizability to other educational settings or age groups is uncertain. The study acknowledges its limitations in this regard.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The study finds significant associations between teacher fidelity and EF/social skills but not academic skills. Conclusions acknowledge limitations and suggest further research for causal inferences.
8. Data Analysis – Appropriate methods used?	Yes	The study uses exploratory factor analysis (EFA), correlations, and hierarchical linear modeling, appropriate for investigating relationships among fidelity, classroom quality, and child outcomes.
Overall Quality Rating (High / Medium / Low)	Medium	The study provides valuable correlational insights with strong methodology but lacks an experimental design for causal conclusions. It is well-conducted but has limitations in generalizability and intervention control.

Study 10: Effects of an Explicit Curriculum on Social-Emotional Competency in Elementary and Middle School Students (Wallender et al., 2020)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study clearly describes the context, setting, and implementation of the SEL program in a rural midwestern school district.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The study defines the population, consisting of elementary and middle school students, and provides demographic details, including school district characteristics and sample size.
3. Intervention agent – Clearly described and replicable?	Yes	The Second Step curriculum is well-described, including lesson frequency and content delivery by the school counselor.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Partial	The study uses a quasi-experimental pre/post-test design without a control group, which limits causal inference.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Partial	The self-report survey aligns with SEL constructs but lacks robust psychometric validation, limiting reliability and validity.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The findings are specific to a rural midwestern school district and may not generalize to urban or more diverse populations.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Partial	The conclusions are based on statistical results, but interpretation issues arise due to self-reporting limitations and possible misinterpretation of perceived negative effects.
8. Data Analysis – Appropriate methods used?	Yes	Dependent t-tests were appropriately used to analyze pre- and post-survey differences.
Overall Quality Rating (High / Medium / Low)	Medium	The study is well-structured and provides valuable insights, but limitations in study design, measurement reliability, and generalizability affect its overall strength.

Study 11: The Randomized Controlled Trial of Head Start REDI Sustained Effects on Developmental Trajectories of Social–Emotional Functioning (Nix et al., 2016)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study describes the Head Start REDI intervention setting, including Head Start centers, classrooms, and follow-up in elementary schools.
2. Participants – Defined population and relevant disability/difficulty?	Yes	Participants were preschool children from low-income families, with a focus on social-emotional development. Demographic details, including gender and ethnicity, are provided.
3. Intervention agent – Clearly described and replicable?	Yes	The Head Start REDI intervention is well-documented, including curriculum components, professional development, implementation fidelity, and classroom support.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study is a randomized controlled trial (RCT), which is appropriate for assessing intervention effects on developmental trajectories.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	Multiple validated measures (e.g., Social Competence Scale, ADHD Rating Scale) were used, with high internal consistency ($\alpha = .89-.96$).
6. Internal validity – Results applicable to similar populations/settings?	Partial	While the findings are relevant for children in Head Start programs, generalizability beyond low-income preschool populations may be limited.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The study presents statistically significant results indicating positive long-term effects of the intervention on social-emotional functioning.
8. Data Analysis – Appropriate methods used?	Yes	Person-oriented latent class growth models were used to assess long-term trajectories, reducing individual teacher bias and handling missing data effectively.
Overall Quality Rating (High / Medium / Low)	High	The study is methodologically strong, with a well-described intervention, reliable measures, and appropriate data analysis, though generalizability is somewhat limited.

Study 12: A Preschool Pilot Study of Connecting with Others: Lessons for Teaching Social and Emotional Competence (Schultz et al., 2011)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study setting is clearly described as a preschool at a family service center in Northeast Nebraska for low-income and at-risk families.
2. Participants – Defined population and relevant disability/difficulty?	Yes	Participants were preschool children (ages 3-5) from low-income families, with 15% having disabilities. Demographics such as gender and ethnicity were also provided.
3. Intervention agent – Clearly described and replicable?	Yes	The intervention (Connecting with Others: Lessons for Teaching Social and Emotional Competence) was well-described, including its duration, structure, and instructional methods.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Partial	The study examined pre- and post-test results but lacked a control group, limiting causal inference.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The study used BASC-2 and the Connecting with Others Rating Scale, both established instruments in social-emotional assessment, to assess social-emotional and behavioral changes in preschool children. Both measures showed significant improvements post-intervention, with effect sizes indicating meaningful behavioral progress. However, potential measurement bias (e.g., teaching to the test) and lack of long-term follow-up were noted as limitations.
6. Internal validity – Results applicable to similar populations/settings?	Partial	Generalizability is limited due to the small sample size, single setting, and lack of a control group. Future studies with larger, more diverse samples were recommended.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Results indicated significant improvements in social-emotional skills, though limitations such as lack of a control group were acknowledged.
8. Data Analysis – Appropriate methods used?	Yes	Paired t-tests with appropriate significance thresholds were applied; effect sizes were reported to measure impact.
Overall Quality Rating (High / Medium / Low)	Medium	The study provides useful insights but has limitations in design (no control group, small sample), affecting its overall strength of evidence.

Study 13: Promoting Social and Emotional Learning in Second Grade Students A Study of the Strong Start Curriculum (Caldarella et al., 2009)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study was conducted at a suburban elementary school in Utah. Details on school demographics and selection criteria were provided.
2. Participants – Defined population and relevant disability/difficulty?	Yes	Participants were second-grade students (N=26) from two classrooms, with demographics provided. Students at greater risk were identified and analyzed separately.
3. Intervention agent – Clearly described and replicable?	Yes	The Strong Start curriculum was described in terms of implementation, duration, and fidelity monitoring.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	A quasi-experimental, non-equivalent control group design was used. While not fully randomized, the design was appropriate for evaluating the SEL curriculum.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	Teacher-rated measures of social-emotional competence (SSBS and SSRS) were used, with reported reliability coefficients supporting validity.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The study was conducted in one school with a small sample, limiting generalizability, though findings align with broader SEL research.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	Significant improvements were observed in the treatment group, with statistical results reported. Limitations and social validity ratings were discussed.
8. Data Analysis – Appropriate methods used?	Yes	Descriptive statistics, t-tests (dependent and independent), and effect size calculations were applied appropriately.
Overall Quality Rating (High / Medium / Low)	High	The study was well-designed with reliable measures, appropriate analysis, and meaningful conclusions, though the small sample limits broad applicability.

Study 14: Multilevel Prospective Dynamics in School-Based Social and Emotional Learning Programs (Meyers and Hickey, 2014)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The article provides a detailed description of the context in which SEL interventions occur, including school-based settings and their effect on both individual and environmental factors.
2. Participants – Defined population and relevant disability/difficulty?	Partial	The study reviews multiple SEL programs with diverse participant groups including students, teachers, and school environments, but the specific demographics of participants in individual studies are not extensively detailed.
3. Intervention agent – Clearly described and replicable?	Yes	The article describes various SEL programs and their approaches, such as skills-focused and environment-focused interventions, though specifics on intervention procedures across all studies may vary.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study design involves a review of various SEL programs, which includes experimental and quasi-experimental studies that align with the research question of understanding the effects of SEL interventions on individual and environmental outcomes.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The reviewed studies use a combination of reliable measures like direct observations and student self-reports, and statistical methods such as hierarchical linear modeling to assess both individual-level and systemic outcomes.
6. Internal validity – Results applicable to similar populations/settings?	Partial	While the findings are broadly applicable to school-based SEL programs, the generalizability may vary depending on factors such as school setting and program implementation fidelity.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The findings are clearly presented and supported by data from the reviewed studies, including the influence of teacher training and the importance of both individual and environmental interventions.
8. Data Analysis – Appropriate methods used?	Yes	Appropriate data analysis methods are used, including hierarchical linear modeling to analyze multilevel data from both individual and group perspectives.
Overall Quality Rating (High / Medium / Low)	Medium	The study provides valuable insights, but the generalizability of findings and the lack of detailed participant demographics in some of the reviewed studies limit its overall quality rating.

Study 15: Maximizing Mindful Learning Mindful Awareness Intervention Improves Elementary School Students Quarterly Grades (Bakosh et al., 2016)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study context (public elementary schools in the USA) and setting (suburban schools in Chicago) are clearly described. The study's focus on feasibility and effectiveness within traditional school systems is also well articulated.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The population consists of 191 third-grade students (93 in the intervention group and 98 in the control group), with a gender balance. The study focused on enhancing academic performance, particularly in reading and science, and did not target any specific disability or difficulty.
3. Intervention agent – Clearly described and replicable?	Yes	The intervention (audio-guided mindful awareness training) is clearly described, including its duration, daily structure, and goals. The program is fully automated and replicable, making it accessible for wide-scale implementation without expert trainers.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study used a quasi-experimental design with an intervention group and a control group to test the effectiveness of the mindfulness program on student grades. This design is appropriate given the study's objective to test program effectiveness in real-world settings.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The outcome measures (student quarterly grades, classroom behavior, and teaching impact) are reliable, as they were pre-existing data collected by teachers. These measures are valid, as they align with the study's goal of examining the intervention's impact on academic performance and classroom dynamics.
6. Internal validity – Results applicable to similar populations/settings?	Yes	The study's setting in public elementary schools in a suburban area in the USA suggests that the results may be applicable to similar school environments, especially those with resource constraints. However, further studies in other settings are needed to strengthen generalizability.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The findings clearly show that the intervention led to significant improvements in reading and science grades. The conclusions logically follow from the data, indicating the program's potential effectiveness.
8. Data Analysis – Appropriate methods used?	Yes	The use of hierarchical multiple regression analysis is appropriate for controlling baseline differences and examining the relationship between the intervention and student grades, behavior, and teaching operations. The method also accounts for potential confounding variables.
Overall Quality Rating (High / Medium / Low)	High	The study is well-designed, relevant, and shows promising results on the feasibility and effectiveness of the mindfulness intervention.

Study 16: Improving the social and emotional climate of classrooms A clustered randomized controlled trial testing the RULER approach (Rivers et al., 2013)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study clearly describes the context (Catholic schools in Brooklyn and Queens, NY) and setting (fifth- and sixth-grade classrooms) where the research was conducted.
2. Participants – Defined population and relevant disability/difficulty?	Yes	The participants include 105 teachers (70.5% female) and 3,824 students (42.4% boys) from 62 schools. The study is relevant for classrooms, focusing on social and emotional climate improvement.
3. Intervention agent – Clearly described and replicable?	Yes	The RULER intervention is clearly described with detailed steps and unit structure, making it replicable in similar classroom settings.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study uses a clustered randomized controlled trial, which is an appropriate experimental design for testing the RULER intervention's impact on classroom emotional climate.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The outcome measures include validated tools like the Classroom Assessment Scoring System and teacher/student surveys, with high Cronbach's alphas indicating reliability.
6. Internal validity – Results applicable to similar populations/settings?	Partial	The study was conducted in Catholic schools in a specific geographic area, limiting direct generalizability to other populations or settings, though it may apply to similar educational contexts.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The findings show significant improvements in classroom emotional climate (e.g., teacher-student warmth, student autonomy) in the RULER group, supporting the intervention's effectiveness.
8. Data Analysis – Appropriate methods used?	Yes	Multi-level modeling analyses were used, which is an appropriate method for clustered data, such as classrooms within schools.
Overall Quality Rating (High / Medium / Low)	High	The study meets all the criteria for high quality, with a clear design, reliable measures, and strong findings.

Study 17: Exploring changes in student engagement through the RULER approach An examination of students at risk of academic failure (Cipriano et al., 2019)

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The study provides a clear description of the setting in 64 schools within a Catholic school district in the northeastern United States, with a diverse student population. The context is well-outlined, including the RULER intervention and the school environment.
2. Participants – Defined population and relevant disability/difficulty?	Yes	Participants (N = 318) were identified as students at risk for school failure, based on underperformance in multiple subjects. The sample is clearly defined with relevant characteristics, including academic underachievement and demographic details such as gender and ethnicity.
3. Intervention agent – Clearly described and replicable?	Yes	The RULER program is well-described, including teacher training, program content, and structure of lessons. The intervention is replicable as it includes specific details about the duration, frequency, and content of the lessons.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study uses a randomized control trial design, which is appropriate for testing the impact of the RULER intervention on student engagement and conduct, addressing the research question effectively.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The outcome measures, including student engagement (Engagement v. Disaffection Scale) and student conduct (teacher-reported grades), are reliable (alpha values) and aligned with the study's goal to measure shifts in student engagement and behavior.
6. Internal validity – Results applicable to similar populations/settings?	Partial	While the study sample comes from a diverse population in a specific Catholic school district, the findings may be generalizable to similar student populations at risk for school failure but may not apply universally across all school systems or settings.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The findings are clearly stated, showing that RULER positively impacted student engagement and conduct. The conclusions are supported by the data, and limitations are also discussed, providing a balanced view.
8. Data Analysis – Appropriate methods used?	Yes	The study used multigroup path modeling with appropriate software (LISREL 9.10) to analyze longitudinal data, allowing for the assessment of causal relationships between engagement, conduct, and achievement.
Overall Quality Rating (High / Medium / Low)	High	The study is well-designed, with clear intervention details, reliable outcome measures, and appropriate data analysis methods. The findings are supported by data, and the study addresses an important issue in education for at-risk students.

**Study 18: Social and Emotional Learning as a Universal Level of Student Support
Evaluating the Follow-up Effect of Strong Kids on Social and Emotional Outcomes
(Harlacher and Merrell, 2010)**

Criterion	Yes / No / Partial	Notes (Brief Justification)
1. Context & Setting – Clearly described?	Yes	The context is described in detail, including information about the school setting, geographic location, and the time frame for implementing the SEL curriculum (September to December).
2. Participants – Defined population and relevant disability/difficulty?	Yes	The participants are 106 students (ages 8–9), with 54% girls and 46% boys, primarily White (84%). The study focuses on general SEL outcomes without specific focus on disabilities or difficulties.
3. Intervention agent – Clearly described and replicable?	Yes	The intervention, Strong Kids (SK), is described clearly, including lesson details, booster sessions, and fidelity checks. It provides sufficient information to replicate the program.
4. Description of practice – Experimental/quasi-experimental, appropriate for the research question?	Yes	The study employs a quasi-experimental design with a treatment group (SEL curriculum) and a wait-list group. Teachers were randomly assigned, but students remained in pre-existing classrooms, making individual randomization unfeasible. This design appropriately assesses SEL curriculum effectiveness despite classroom constraints.
5. Implementation fidelity – Reliable, valid, and aligned with study goals?	Yes	The study uses multiple outcome measures: the SK Knowledge Test (for SEL knowledge), Coping Scale (for perceived use of SEL skills), and SEARS-C (for social-emotional competencies). All measures demonstrate good reliability and validity, with internal consistency reported across testing periods. The measures are aligned with the study's goal of assessing social and emotional outcomes of the SEL curriculum.
6. Internal validity – Results applicable to similar populations/settings?	Partial	While the sample is relatively small and specific to one district, the study provides insights into the potential effectiveness of SEL curricula in similar elementary school settings. Larger and more diverse samples would improve generalizability.
7. Outcome measures/ Dependent variables – Clear, logical, and supported by data?	Yes	The findings are clear and supported by data, showing positive effects of the SK curriculum on SEL knowledge, perceived use of SEL skills, and teacher-rated social functioning.
8. Data Analysis – Appropriate methods used?	Yes	Data analysis includes comparisons between the treatment and wait-list groups using pretest, posttest, and follow-up data. The analysis focuses on gain scores (change in outcomes from pretest to posttest and follow-up) and accounts for group differences. This approach is appropriate for evaluating the effectiveness of the intervention and its sustainability over time.
Overall Quality Rating (High / Medium / Low)	High	The study is well-designed, uses reliable and valid measures, and provides strong evidence of the effectiveness of the SEL curriculum in improving student outcomes.

APPENDIX B

PART 1 – MMAT 2018

Part I: Mixed Methods Appraisal Tool (MMAT), version 2018

Category of study designs	Methodological quality criteria	Responses			
		Yes	No	Can't tell	Comments
Screening questions (for all types)	S1. Are there clear research questions?				
	S2. Do the collected data allow to address the research questions? <i>Further appraisal may not be feasible or appropriate when the answer is 'No' or 'Can't tell' to one or both screening questions.</i>				
1. Qualitative	1.1. Is the qualitative approach appropriate to answer the research question?				
	1.2. Are the qualitative data collection methods adequate to address the research question?				
	1.3. Are the findings adequately derived from the data?				
	1.4. Is the interpretation of results sufficiently substantiated by data?				
	1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?				
2. Quantitative randomized controlled trials	2.1. Is randomization appropriately performed?				
	2.2. Are the groups comparable at baseline?				
	2.3. Are there complete outcome data?				
	2.4. Are outcome assessors blinded to the intervention provided?				
	2.5. Did the participants adhere to the assigned intervention?				
3. Quantitative non-randomized	3.1. Are the participants representative of the target population?				
	3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?				
	3.3. Are there complete outcome data?				
	3.4. Are the confounders accounted for in the design and analysis?				
	3.5. During the study period, is the intervention administered (or exposure occurred) as intended?				
4. Quantitative descriptive	4.1. Is the sampling strategy relevant to address the research question?				
	4.2. Is the sample representative of the target population?				
	4.3. Are the measurements appropriate?				
	4.4. Is the risk of nonresponse bias low?				
	4.5. Is the statistical analysis appropriate to answer the research question?				
5. Mixed methods	5.1. Is there an adequate rationale for using a mixed methods design to address the research question?				
	5.2. Are the different components of the study effectively integrated to answer the research question?				
	5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?				
	5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?				
	5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?				

PART 2 – MMAT 2018 EVALUATION OF SELECTED STUDIES

Study 1: Promoting Peer Connectedness Through Social-Emotional Learning: Evaluating the Intervention Effect Mechanisms and Implementation Factors of a Social-Emotional Learning Programme for 9 to 12-Year-Olds (Pollak et al., 2024)
Design: Quantitative non-randomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to evaluate the effects of a social-emotional learning (SEL) program on peer connectedness, happiness, and classroom climate among 9- to 12-year-olds transitioning to secondary school. It also explores the mechanisms through which SEL influences these outcomes.
S2. Do the collected data allow addressing the research questions?	Yes	The study utilizes a clustered waitlist-control design with three measurement points (pre, post, follow-up). Data were collected through online questionnaires administered to students and teachers, assessing social-emotional skills, peer connectedness, and class climate.
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Yes	The study recruited classrooms from a network of schools in Austria. Participation was voluntary, and assignment to intervention/control groups was not randomized but based on school availability and willingness to start in September. This may limit generalizability.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	Validated self-reported measures were used to assess social-emotional skills, peer connectedness, classroom climate, and happiness. The intervention was structured around evidence-based SEL principles.
3.3. Are there complete outcome data?	Partially	While the study followed a per-protocol analysis, only eight intervention classes (out of 19) that completed all sessions were included in the primary analysis. Additionally, some

Category / Criteria	Yes / No / Can't Tell	Comments
		students may not have participated in follow-up assessments.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study design did not use randomization, but analyses considered implementation fidelity, classroom-level effects, and other contextual factors that could influence outcomes. However, unmeasured confounders such as school-specific policies or teacher engagement may have impacted results.
3.5. During the study period, is the intervention administered (or exposure) as intended?	Yes	The intervention was delivered according to the program manual, but fidelity varied across classrooms. Additional analyses were conducted to examine the impact of implementation fidelity on outcomes. Some schools faced scheduling issues due to COVID-19 protocols.

Study 2: Impact of MindUP on elementary school students' classroom behaviors: A single-case design pilot study (Hai et al., 2021)
Design Method: Quantitative Nonrandomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to examine whether MindUP can improve classroom behavior in students with behavioral challenges. Hypotheses include an increase in positive behaviors (active and passive on-task) and a decrease in negative behaviors (disruptive and non-disruptive off-task).
S2. Do the collected data allow addressing the research questions?	Yes	The study employs direct behavioral observation, a well-established method for assessing student behaviors. Data analysis includes visual analysis, percentage of non-overlapping data, and multilevel analysis.
Quantitative Nonrandomized		

Category / Criteria	Yes / No / Can't Tell	Comments
3.1. Are the participants representative of the target population?	Partially	Participants were selected by teachers based on classroom observations and inclusion criteria (English-speaking, not in special education, needing behavioral improvement). While the sample is relevant, the selection process may introduce bias.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	Behavioral observations were conducted using the Direct Behavior Rating Single Item Scale (DBR-SIS). Observers received training and met interrater reliability standards. Treatment fidelity was assessed using checklists and observations.
3.3. Are there complete outcome data?	Partially	Three students were excluded due to missing baseline data. While the remaining dataset appears complete, this exclusion indicates some level of data loss.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study uses a single-case (A-B) design without a control group. While multilevel analysis helps assess effects, potential confounders (e.g., teacher influence, classroom environment) are not explicitly controlled.
3.5. During the study period, is the intervention administered as intended?	Yes	Teachers followed a structured curriculum, received training, and completed fidelity checklists. Classroom observations confirmed adherence to the MindUP program.

Study 3: Evaluation of the SPARK Child Mentoring Program: A Social and Emotional Learning Curriculum for Elementary School Students (Green et al., 2021)

Design Method: Quantitative – Randomized Controlled Trials (RCTs)

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to evaluate the efficacy of the SPARK Child Mentoring Program in enhancing social and emotional learning (SEL)

Category / Criteria	Yes / No / Can't Tell	Comments
		competencies among elementary school students.
S2. Do the collected data allow addressing the research questions?	Yes	The study collected pre- and post-intervention data using validated assessment tools such as the 3PI, CDP-Child Version, and DERS-SF, allowing for evaluation of program impact.
Quantitative RCT		
2.1. Is randomization appropriately performed?	Yes	The study employed a cluster-randomized design where entire classrooms were randomly assigned to either the intervention or comparison group.
2.2. Are the groups comparable at baseline?	Partially	While groups were similar in most measures (communication, decision-making, problem-solving, emotional regulation, and resilience), the comparison group reported higher pre-test ratings on knowledge of program content (3PI).
2.3. Are complete outcome data available?	Yes	The final sample included 94 students with complete pre- and post-intervention data. Three students were lost to follow-up, but this did not significantly affect the results ($p = 1.00$).
2.4. Are outcome assessors blinded to the intervention?	Not Specified	There is no explicit mention of blinding outcome assessors to group allocation, which could introduce potential bias in assessment.
2.5. Did participants adhere to the assigned intervention?	Yes	Intervention fidelity was ensured through a fidelity monitoring system, with an average fidelity rating of 3.97/4.00. Attendance data also indicated an average participation rate of 93%, suggesting strong adherence.

Study 4: A School-Based Program to Promote Well-Being in Preadolescents: Results From a Cluster Quasi-Experimental Controlled Study (Allara et al., 2019)
Design: Quantitative – Non-Randomized Studies

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study's research question is focused on evaluating whether the school-based program "Diario della Salute" improves subjective well-being, aggressive behavior, and health behavior among preadolescents. The hypothesis was that providing social and emotional skills to students would enhance well-being and health.
S2. Do the collected data allow addressing the research questions?	Yes	The study collected data on subjective well-being (measured by the HBSC Symptom Checklist), aggressive behavior (measured using the Physical and Verbal Aggression Scale), and health behaviors (e.g., smoking, alcohol consumption, dietary habits, and physical exercise). This data is sufficient to address the research questions regarding the program's impact.
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Yes	The study included 2630 students aged 12–13 years from 62 schools across both Northern and Southern Italy. Sociodemographic characteristics (e.g., sex, age, nationality) were balanced across the intervention and comparison groups. The sample includes a mix of socioeconomic statuses, as defined by parental education.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	The outcome measures (subjective well-being, aggressive behavior, and health behavior) are well-established and validated instruments. The intervention is a structured, standardized program delivered across schools, ensuring consistency in its application.
3.3. Are there complete outcome data?	Yes	Outcome data for both the intervention and comparison groups were largely complete, with 90% of the intervention group and 89% of the comparison group completing both surveys. The

Category / Criteria	Yes / No / Can't Tell	Comments
		dropout rate was minimal, and attrition did not significantly differ between groups.
3.4. Are confounders accounted for in the design and analysis?	Partially	Confounders such as age, sex, socioeconomic status, and nationality of parents were accounted for in the study's design through matching during school selection and in the statistical analysis through regression models adjusting for these variables.
3.5. During the study period, is the intervention administered (or exposure) as intended?	Yes	The intervention was delivered with high fidelity; 74% of teachers implemented all five units of the program. The program's implementation was monitored, and any deviations from the planned intervention were recorded.

Study 5: Implementation in the “real world” of an evidence-based social and emotional learning program for teachers: effects on children social, emotional, behavioral and problem solving skills (Gaspar et al., 2023)

Design Method: Quantitative – Nonrandomized Studies

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study examines the effectiveness of the Incredible Years® Teacher Classroom Management (IY-TCM) program when implemented in real-world settings. Specifically, it investigates the impact of the program on children's social, emotional, behavioral, and problem-solving skills.
S2. Do the collected data allow addressing the research questions?	Yes	The study collects pre- and post-intervention data from teachers' assessments and problem-solving tasks completed by children. Statistical analyses (ANOVA, moderation analysis) are used to evaluate the program's effects.
Quantitative Nonrandomized		
3.1. Are the participants	Partially	While the study includes a large number of teachers (90) and children (535), the selection process introduces potential bias. Teachers

Category / Criteria	Yes / No / Can't Tell	Comments
representative of the target population?		handpicked six children per classroom (two "easy," two "average," two "difficult"), which may not fully represent the general population of children in preschool and primary school.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	The study uses validated assessment tools, including the Strengths and Difficulties Questionnaire (SDQ) for behavioral problems, the Preschool and Kindergarten Behavior Scales (PKBS-2) and School Social Behavior Scales (SSBS-2) for social-emotional skills, and the Wally Problem Solving Test for problem-solving ability. Teachers assessed children's progress, which aligns with the intervention's goals.
3.3. Are there complete outcome data?	Yes	The study reports minimal missing data (<10%), which were replaced using mean imputation. This suggests that outcome data were largely complete and handled appropriately.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study includes moderation analyses to examine whether intervention effects varied by child and parental factors (e.g., baseline behavioral difficulties, mother's education level, and school level). However, other potential confounders (e.g., differences in teacher training, classroom environments) are not fully controlled for.
3.5. During the study period, is the intervention administered as intended?	Mostly	The intervention was implemented in two training levels: (1) teachers trained by group leaders, who were trained by university mentors; (2) teachers trained directly by university group leaders. While variations existed in implementation duration (12–36 months), the study does not report major deviations from the intended program.

Study 6: Improving Elementary School Quality Through the Use of a Social-Emotional and Character Development Program: A Matched-Pair, Cluster-Randomized, Controlled Trial in Hawaii (Snyder et al., 2012)

Design Method: Quantitative – Randomized Controlled Trials (RCTs)

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to assess the effects of the Positive Action (PA) social-emotional and character education program on school quality and safety in elementary schools in Hawaii. The primary research question is: Does the implementation of the PA program improve school quality and perceptions of safety compared to control schools?
S2. Do the collected data allow addressing the research questions?	Yes	The study used school-level archival data from the Hawaii Department of Education and survey responses from teachers, parents, and students on nine school quality indicators. Multiple statistical analyses (matched-paired t-tests, permutation tests, random-intercept growth curve models) were conducted to assess program effects. The collected data directly address the research question.
Quantitative Randomized Controlled Trials		
2.1. Is randomization appropriately performed?	Yes	The study employed a matched-pair, cluster-randomized, controlled trial design. Schools were matched based on demographic characteristics (e.g., free/reduced-price lunch percentage, ethnic distribution, standardized test scores) before randomization into intervention and control groups. This ensured baseline equivalence.
2.2. Are the groups comparable at baseline?	Yes	Baseline school quality scores were not significantly different between intervention and control schools. However, PA schools initially performed below the state average, while control schools were at or above the state average.
2.3. Are complete outcome data available?	Yes	Outcome data were collected at multiple time points, including baseline (2001) and 1-year post-trial (2007). Teacher, parent, and student

Category / Criteria	Yes / No / Can't Tell	Comments
		surveys were used consistently across schools. While three control schools received the PA program after the trial, they were treated as controls due to minimal implementation.
2.4. Are outcome assessors blinded to the intervention?	No	The study relied on self-reported survey data from teachers, parents, and students. As participants knew whether they were in intervention or control schools, complete blinding was not possible. However, statistical methods such as permutation tests and growth curve models controlled for potential biases.
2.5. Did participants adhere to the assigned intervention?	Partially	Implementation fidelity varied across schools, with some control schools implementing other SECD-related programs and intervention schools showing variability in PA program adherence. Booster training sessions were provided to intervention schools, but greater fidelity could have improved results.

Study 7: Effects of second step curriculum on behavioral and academic outcomes in 5th and 8th grade students: a longitudinal study on character development (Top et al., 2016)

Design Method: Quantitative – Non-randomized Studies

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study investigates the effect of the Second Step curriculum on problem behaviors, prosocial behaviors, and academic achievement of middle school students. The research questions focus on whether the intervention influences these school outcomes over time.
S2. Do the collected data allow addressing the research questions?	Yes	The study uses a quasi-experimental design with nonequivalent groups (treatment and control schools). Data were collected from 5,189 students across 35 schools over four semesters on behavioral and academic outcomes. The statistical approach (three-level longitudinal growth model) is appropriate for analyzing changes over time.

Category / Criteria	Yes / No / Can't Tell	Comments
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Partially	The study includes a large sample (5,189 students) from a charter school system in Texas, which improves generalizability within that setting. However, since schools self-selected into treatment or control conditions, there may be selection bias affecting representativeness.
3.2. Are the measurements appropriate regarding both the outcome and intervention?	Yes	The study uses teacher-reported behavioral observations and GPA records as measures. The behavioral measures are observational, which could introduce subjectivity, but GPA is an objective measure from school records. Longitudinal data collection over four semesters strengthens the validity of outcome measurement.
3.3. Are there complete outcome data?	Mostly	The study reports data across four semesters and controls for baseline differences. However, it does not explicitly mention attrition rates or how missing data were handled. Since GPA data relied on parental consent, there could be some missing cases.
3.4. Are confounders accounted for in the design and analysis?	Yes	The study controls for demographics (gender, ethnicity, SES) in the statistical analysis, reducing potential confounding effects. However, self-selection into treatment and control groups could introduce unmeasured confounding variables, such as differences in school leadership, teaching styles, or additional programs affecting outcomes.
3.5. During the study period, is the intervention administered as intended?	Yes	The treatment schools implemented the Second Step curriculum for four consecutive semesters as planned, while the control schools did not. This consistent implementation suggests high fidelity of the intervention.

Study 8: Shaping classroom social experiences through collaborative small-group discussions (Lin et al., 2022)

Design Method: Quantitative – Non-randomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study explicitly examines the effects of Collaborative Social Reasoning (CSR) on students' classroom social experiences at interpersonal and intrapersonal levels.
S2. Do the collected data allow addressing the research questions?	Yes	Data were collected through multiple measures, including peer ratings, surveys, and interviews with students and teachers, enabling a thorough assessment of the study objectives.
Quantitative Nonrandomized		
3.1. Are participants representative of the target population?	Partially	The study included 250 fifth-grade students from two public schools in the Midwest U.S., with diverse demographic representation (race, ELL status, socioeconomic status). However, the sample was limited to a specific grade level and geographic area.
3.2. Are measurements appropriate regarding both reliability and validity?	Yes	Peer social acceptance, physical and relational aggression, and social competence were measured using validated scales and post-intervention interviews with students and teachers. Internal consistency of survey measures was reported ($\alpha = .82$ to $.87$).
3.3. Are there complete outcome data?	Yes	Pre-test and post-test data were collected for all participants, and qualitative interviews were conducted to triangulate findings. No major attrition issues were reported.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study controlled for pre-test scores and teacher recommendations when selecting students for interviews. However, potential confounders such as prior social experiences, classroom dynamics, or teacher effects were not extensively controlled.

Category / Criteria	Yes / No / Can't Tell	Comments
3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	Yes	The CSR intervention was implemented as designed, with structured discussions on social-moral issues. Comparison groups (RA and RI) were also implemented with fidelity. Teachers followed established instructional protocols.

Study 9: Teacher fidelity to Conscious Discipline and children's executive function skills (Anderson et. al., 2020)

Design Method: Quantitative – Descriptive Studies

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study explicitly states its research questions, including examining the relationship between teacher fidelity to Conscious Discipline and children's executive function (EF), social, and academic skills.
S2. Do the collected data allow addressing the research questions?	Yes	The study uses valid and reliable measures (e.g., MEFS, BBCS-3:R) to assess EF and academic skills, and classroom observations for fidelity measures. Statistical analyses (correlations, factor analysis) appropriately address the research questions.
Quantitative – Descriptive Study		
4.1. Is the sampling strategy relevant to address the research question?	Yes	The sample includes 45 preschool classrooms and 293 children, which aligns with the study's goal of assessing Conscious Discipline in real-world settings. However, there is no random selection, and classrooms were part of a larger evaluation study.
4.2. Is the sample representative of the target population?	Partially	The study includes diverse preschool settings (Head Start, public preschool, and community-based programs), but the generalizability may be limited to Midwest U.S. preschools. Some selection bias might be present.

Category / Criteria	Yes / No / Can't Tell	Comments
4.3. Are the measurements appropriate?	Yes	The study uses well-established, validated tools (MEFS, BBCS-3:R) with strong psychometric properties. Classroom quality was assessed using the CLASS tool. Conscious Discipline fidelity was measured using a structured rubric.
4.4. Is the risk of nonresponse bias low?	Partially	Data were collected from children whose parents consented and remained enrolled for both assessments (fall and spring). There may be a risk of selection bias due to attrition or non-consent.
4.5. Is the statistical analysis appropriate to answer the research question?	Yes	The study employs exploratory factor analysis (EFA), correlation analyses, and descriptive statistics, which are appropriate for a descriptive study. However, causal claims cannot be made due to the correlational design.

Study 10: Effects of an Explicit Curriculum on Social-Emotional Competency in Elementary and Middle School Students (Wallender et al., 2020)

Design Method: Quantitative – Descriptive Study

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The research questions are clearly outlined, focusing on the role of SEL in preventing bullying in middle schools.
S2. Do the collected data allow addressing the research questions?	Yes	The collected data, including surveys, teacher assessments, and behavioral observations, allow for addressing the research questions.
Quantitative – Descriptive Study		
4.1. Is the sampling strategy relevant to address the research question?	Yes	All elementary and middle school students in a rural school district were included, with final participation depending on parental permission. This approach ensures coverage of the target population.

Category / Criteria	Yes / No / Can't Tell	Comments
4.2. Is the sample representative of the target population?	Partially	While students across grades 1-8 participated, only 56.1% of eligible students had complete pre/post-test data. The sample is from a single school district, limiting generalizability.
4.3. Are the measurements appropriate?	Partially	The self-report survey was tailored based on CASEL frameworks and validated through pilot testing. However, self-report measures for younger students have limitations, and there is potential bias in self-perceptions.
4.4. Is the risk of nonresponse bias low?	No	43.9% of students did not have complete pre/post-test data due to missing responses, lack of permission, or absence, introducing potential bias.
4.5. Is the statistical analysis appropriate to answer the research question?	Yes	The study used dependent t-tests to compare pre/post survey scores, which is an appropriate method for analyzing within-group changes. However, the interpretation of the adverse results in elementary students was complex, suggesting that statistical significance did not necessarily equate to a meaningful negative effect.

Study 11: The Randomized Controlled Trial of Head Start REDI Sustained Effects on Developmental Trajectories of Social–Emotional Functioning (Nix et al., 2016)

Design: Quantitative randomized controlled trials (RCTs)

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to determine whether the Head Start REDI program improves children’s developmental trajectories in social-emotional functioning from preschool through elementary school.
S2. Do the collected data allow addressing the research questions?	Yes	The study uses teacher ratings over five years, measuring multiple domains of social-emotional functioning. Latent class growth models were used to analyze sustained effects.

Category / Criteria	Yes / No / Can't Tell	Comments
Quantitative Nonrandomized		
2.1. Is randomization appropriately performed?	Yes	The 25 Head Start centers were stratified by location, program hours, and demographics, then randomly assigned to the REDI intervention or control. All classrooms in a center were assigned to the same condition.
2.2. Are the groups comparable at baseline?	Yes	There were no statistically significant differences between intervention and control groups at baseline on study outcomes, ensuring comparability.
2.3. Are complete outcome data available?	Mostly	Data were available for 91% of the original sample over five years. Missing data were addressed using latent class growth models, which help estimate missing values.
2.4. Are outcome assessors blinded to the intervention?	Partially	While teacher ratings were used as primary measures, it is unclear if teachers were blinded to study conditions. However, some observations were conducted by research staff who were blinded to study conditions.
2.5. Did participants adhere to the assigned intervention?	Yes	Teachers reported high fidelity in implementing the REDI intervention, with completion rates of key activities ranging from 84% to 88%. Observations confirmed moderate to large differences in classroom practices between groups.

Study 12: A Preschool Pilot Study of Connecting with Others Lessons for Teaching Social and Emotional Competence (Schultz et al., 2011)

Design: Quantitative descriptive

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study explicitly states its hypothesis: The program is expected to improve pro-social behaviors and reduce disruptive behaviors.

Category / Criteria	Yes / No / Can't Tell	Comments
S2. Do the collected data allow addressing the research questions?	Yes	The study uses pre-test and post-test scores from validated rating scales (BASC-2 and CORS) to assess behavioral changes, allowing it to address the research questions.
Quantitative Descriptive		
4.1. Is the sampling strategy relevant to address the research question?	Yes	The study uses a purposive sample of preschoolers from a federally funded, at-risk program, aligning with its aim to evaluate the intervention's effect in this population.
4.2. Is the sample representative of the target population?	Somewhat	The sample is small (18 children) and limited to one preschool setting in Northeast Nebraska, which may not fully represent broader preschool populations. However, it does reflect a diverse socio-economic and ethnic background relevant to the study's objectives.
4.3. Are the measurements appropriate?	Yes	The study uses validated tools (BASC-2 and CORS), which are widely used in assessing social-emotional and behavioral competencies in children.
4.4. Is the risk of nonresponse bias low?	Yes	Since all children in the preschool program who met eligibility criteria and had parental consent were included, the risk of nonresponse bias is minimal.
4.5. Is the statistical analysis appropriate to answer the research question?	Yes	The study employs paired t-tests to compare pre- and post-test scores, with appropriate significance adjustments ($\alpha = .008$). Effect sizes were also reported, demonstrating meaningful behavioral changes.

Study 13: Promoting Social and Emotional Learning in Second Grade Students A Study of the Strong Start Curriculum (Caldarella et al., 2009)

Design: Quantitative non-randomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to evaluate the effects of the Strong Start SEL curriculum on second-grade students' social-emotional competence.
S2. Do the collected data allow addressing the research questions?	Yes	Teacher ratings of student behaviors (internalizing, externalizing, and peer-related pro-social behaviors) were collected pre- and post-intervention, allowing for analysis of the curriculum's effects.
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Partially	The study used a convenience sample from one suburban elementary school in Utah. While demographic information is provided, generalizability is limited due to the small sample size (n=26) and lack of diversity.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	Teacher ratings were used as the primary measure, employing validated subscales (SSBS Peer Relations, SSRS Internalizing/Externalizing). Internal consistency values were provided, supporting reliability. However, reliance on teacher ratings introduces potential bias.
3.3. Are there complete outcome data?	Yes	Data were collected pre- and post-intervention for all participants. The study reports statistical results for both within-group and between-group analyses, suggesting complete data collection.
3.4. Are confounders accounted for in the design and analysis?	Partially	The quasi-experimental, non-equivalent control group design did not use random assignment or matching. While pretest equivalence was assessed, potential confounders (e.g., teacher differences, classroom environments) were not fully controlled.

Category / Criteria	Yes / No / Can't Tell	Comments
3.5. During the study period, is the intervention administered (or exposure) as intended?	Yes	Treatment fidelity was measured, with 95% of lesson components completed. Observations and social validity ratings suggest the intervention was delivered as planned. Minor deviations occurred due to time constraints in some lessons.

Study 14: Multilevel Prospective Dynamics in School-Based Social and Emotional Learning Programs (Meyers and Hickey, 2014)

Design: Qualitative

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study explores the multilevel and cross-level effects of school-based SEL interventions, examining their impact on both individual child outcomes and broader classroom/school environments.
S2. Do the collected data allow addressing the research questions?	Yes	The study systematically reviews evidence from various SEL programs, documenting their effects on both person-centered and systemic outcomes.
Qualitative		
1.1. Is the qualitative approach appropriate to answer the research question?	Yes	A qualitative review of studies is suitable for exploring the complex ecological interactions between SEL interventions and school environments.
1.2. Are the qualitative data collection methods adequate to address the research question?	Yes	The study employs a literature review method, synthesizing findings from multiple SEL program evaluations, which is an appropriate approach for assessing multiscale intervention effects.
1.3. Are the findings adequately derived from the data?	Yes	The study presents a structured review of SEL interventions, linking findings from different programs to support its conclusions on multilevel effects.

Category / Criteria	Yes / No / Can't Tell	Comments
1.4. Is the interpretation of results sufficiently substantiated by the data?	Yes	The conclusions are backed by references to multiple empirical studies and meta-analyses, strengthening the validity of the interpretations.
1.5. Is there coherence between qualitative data sources, collection, analysis, and interpretation?	Yes	The study integrates findings from various SEL programs, analyzing their multilevel effects and ensuring consistency in data interpretation.

Study 15: Maximizing Mindful Learning Mindful Awareness Intervention Improves Elementary School Students Quarterly Grades (Bakosh et al., 2016)
Design: Quantitative non-randomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to examine the feasibility and effectiveness of an audio-guided mindful awareness training program on elementary school students' quarterly grades.
S2. Do the collected data allow addressing the research questions?	Yes	The study collected quarterly grades, classroom behavior logs, and teacher feedback to assess the impact of the intervention. Data analysis involved hierarchical multiple regression to measure the effect of the intervention.
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Partially	The participants were third-grade students from two public elementary schools in a Chicago suburb. While the sample size (N=191) is reasonable, the study is limited to a specific age group and geographic area, potentially limiting generalizability.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	Quarterly grades were measured on a standardized 0-100 scale, and behavioral incidents were logged daily by teachers. The intervention was delivered as a 10-minute daily audio-guided program based on the MBSR protocol.

Category / Criteria	Yes / No / Can't Tell	Comments
3.3. Are there complete outcome data?	Yes	The study reports quarterly grades and behavioral incident logs across the 8-week intervention period. Some behavioral data were missing due to school holidays and field trips, but these were accounted for in the analysis.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study controlled for pre-intervention grades using hierarchical multiple regression. However, selection bias may exist, as teachers self-selected into the intervention and control groups, and student grouping was based on pre-existing classrooms.
3.5. During the study period, is the intervention administered (or exposure) as intended?	Yes	The intervention was administered daily for 8 weeks with structured implementation. Teachers documented program usage, participation, and any disruptions, ensuring fidelity to the intervention protocol.

**Study 16: Improving the social and emotional climate of classrooms A clustered randomized controlled trial testing the RULER approach (Rivers et al., 2013)
Design: Quantitative Randomized Controlled Trials (RCTs)**

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to test whether the RULER approach improves the social and emotional climate of classrooms through a clustered RCT.
S2. Do the collected data allow addressing the research questions?	Yes	Data collection involved observational assessments, teacher surveys, and student surveys, which were appropriate for assessing classroom climate changes.
Quantitative Randomized Controlled Trials (RCTs)		
2.1. Is randomization appropriately performed?	Yes	Schools were randomly assigned to either the RULER intervention or comparison group. Baseline data were compared to ensure effectiveness.

Category / Criteria	Yes / No / Can't Tell	Comments
2.2. Are the groups comparable at baseline?	Partially	While most variables were comparable, student-reported teacher affiliation was higher in the intervention group, and program schools had smaller sizes. These were accounted for as covariates.
2.3. Are complete outcome data available?	Yes	Data collection included multiple sources (observational, teacher, and student reports). Missing data were not explicitly discussed but appear minimal.
2.4. Are outcome assessors blinded to the intervention?	No mention	The study does not explicitly state whether assessors analyzing observational data were blinded to intervention status.
2.5. Did participants adhere to the assigned intervention?	Mostly	Teachers completed an average of 7.38 out of 12 units, and students reported completing 6.97 units, indicating reasonable adherence to the intervention.

Study 17: Exploring changes in student engagement through the RULER approach An examination of students at risk of academic failure (Cipriano et al., 2019)

Design: Quantitative non-randomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study investigates whether the RULER SEL program improves student engagement and conduct for students at risk of academic failure.
S2. Do the collected data allow addressing the research questions?	Yes	Longitudinal data was collected across three waves (fifth, sixth, and seventh grades) to examine shifts in student engagement and conduct in relation to the RULER program.

Category / Criteria	Yes / No / Can't Tell	Comments
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Partially	The sample consists of students identified as at risk for academic failure (n=318) within a larger study (N=1,352) in a Catholic school district in the northeastern United States. While the sample is well-defined, it may not be generalizable to all at-risk students due to the specific school district context.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	The study uses validated measures: the Engagement vs. Disaffection Scale ($\alpha=0.89$) for student engagement and teacher-reported conduct grades. The intervention (RULER) was systematically implemented, with training and coaching provided to teachers.
3.3. Are there complete outcome data?	Yes	Data were collected across three waves, and full-information maximum likelihood (FIML) estimation was used to handle missing values, ensuring robust analysis.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study includes student-level covariates (gender, race/ethnicity) and school-level covariates (school size, student-teacher ratio) in the analysis. However, causal claims are limited due to the correlational nature of the study.
3.5. During the study period, is the intervention administered (or exposure) as intended?	Yes	Schools were randomly assigned to either the RULER or control group, and the intervention was implemented through structured training sessions, coaching, and lesson plans over the academic year.

**Study 18: Social and Emotional Learning as a Universal Level of Student Support
Evaluating the Follow-up Effect of Strong Kids on Social and Emotional Outcomes
(Harlacher and Merrell, 2010)**

Design: Quantitative non-randomized

Category / Criteria	Yes / No / Can't Tell	Comments
Screening Questions		
S1. Are there clear research questions?	Yes	The study aims to evaluate the impact of the "Strong Kids" SEL curriculum on social and emotional learning outcomes in third- and fourth-grade students.
S2. Do the collected data allow addressing the research questions?	Yes	The study uses pretest, posttest, and follow-up assessments with validated measures (e.g., SK Knowledge Test, SEARS-C) to examine SEL knowledge, perceived use of SEL skills, and social functioning.
Quantitative Nonrandomized		
3.1. Are the participants representative of the target population?	Partially	The study sample (N=106) is predominantly White (84%) from one elementary school in the Pacific Northwest, limiting generalizability. However, the recruitment process was systematic, involving district-wide invitations.
3.2. Are measurements appropriate regarding both the outcome and intervention?	Yes	Multiple standardized and validated instruments were used to measure SEL outcomes. Internal consistency was acceptable for most measures, but some reliability coefficients were lower (.56 at pretest for SK Knowledge Test).
3.3. Are there complete outcome data?	Yes	The study reports results for all participants who completed the assessments at pretest, posttest, and follow-up. Attrition, if any, is not reported.
3.4. Are confounders accounted for in the design and analysis?	Partially	The study controls for confounding by using a wait-list control group, but randomization was not possible at the student level, which introduces potential classroom-level biases. Other confounders (e.g., teacher effects) are not explicitly controlled for.

Category / Criteria	Yes / No / Can't Tell	Comments
3.5. During the study period, is the intervention administered (or exposure) as intended?	Yes	Fidelity of implementation was over 85%, verified through curriculum component observations. Teachers received training and adhered to the planned intervention schedule.

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