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The Impact of Leader in Me on the School Climate and Student Behaviours: A Meta-Analysis

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Abstract

This meta-analysis investigates the impact of the *Leader in Me* process on teachers' perceptions of their school climates and student behaviour. Twelve studies involving 198,176 students resulted in an overall effect size of $d = .20$. The effect sizes for student climate ($d = .34$) and student behaviour ($d = .16$) were determined separately. The results of this meta-analysis connect the *Leader in Me* intervention with the whole-school implementation model for maintaining a supportive learning environment.

Résumé

Cette méta-analyse étudie l'impact du processus *Leader in Me* sur la manière dont les enseignants perçoivent le climat de leur école et le comportement de leurs élèves. Douze études portant sur 198 176 élèves ont abouti à une taille d'effet globale de $d = 0{,}20$. Les tailles d'effet pour le climat scolaire ($d = 0{,}34$) et le comportement des élèves ($d = 0{,}16$) ont été déterminées séparément. Les résultats de cette méta-analyse établissent un lien entre l'intervention Leader in Me et un modèle de mise en œuvre à l'échelle de l'école pour le maintien d'un environnement d'apprentissage favorable.

Keywords / Mots clés : teacher wellness, student behaviour, student attendance, school climate, school culture, life skills, supportive learning environment, effect size, *Leader in Me* / bien-être des enseignants, comportement des élèves, assiduité

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des élèves, climat scolaire, culture scolaire, aptitudes à la vie quotidienne, environnement d'apprentissage favorable, taille d'effet, *Leader in Me*

The need for systemic approaches to create supportive learning environments has increased significantly since the COVID-19 pandemic (National Center for Education Statistics, 2022). Creating a positive school climate or a supportive learning environment involves developing a welcoming culture and atmosphere. This includes how students and adults interact, the physical surroundings, and the policies and practices implemented. Researchers have shown that positive school climates lead to academic success, favourable student attitudes and behaviour, emotional regulation, and mental health (Aldridge & McChesney, 2018; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). It also leads to reduced absenteeism (Kuhfeld, Soland, Tarasawa, Johnson, Ruzek, & Liu, 2020; Van Eck, Johnson, Bettencourt, & Lindstrom Johnson, 2017) and a decrease in disruptive behaviours such as bullying, truancy, and risky behaviours (i.e., drinking and substance abuse), as well as disciplinary incidents (Institute of Education Sciences, 2020; Monteiro, Carvalho, & Santos, 2021; Niu, Cheng, Duan, & Zhang, 2022; Poulou, 2020; Reaves, McMahon, Duffy, & Ruiz, 2018).

Attendance and discipline policies significantly shape the school experience for students, families, educators, and the community. For instance, a school's zero-tolerance policy for discipline transgressions often disproportionally impacts racial-minoritized students (i.e., Black, Latino, Native American), males, students with disabilities, and individuals from underprivileged backgrounds and living in economically depressed homes and communities, thereby promoting inequality in academic achievements and postsecondary opportunities (Bradshaw, Pas, Bottiani, Debnam, Reinke, Herman, & Rosenberg, 2018; Lui, Hayes, & Gershenson, 2022; Okonofua, Goyer, Lindsay, Haugabrook, & Walton, 2022; Owens & McLanahan, 2020; Wang, Xiao, Li, & Yao, 2022). Alternatively, school leaders can implement less punitive approaches, prioritizing prevention and collaboration among schools, families, and communities. Proactive interventions often focus on improving classroom instruction and management, building relationships, and promoting emotional well-being through coaching and professional development. Ultimately, school leaders are responsible for making decisions and implementing programs that create and maintain positive school environments that support all students' academic success and emotional well-being. Therefore, researchers and leaders must identify evidence-based approaches that foster students' sense of belonging, physical and emotional safety, and trusting relationships with peers and adults to encourage the learning process and meet their teachers' high expectations (Institute of Education Sciences, 2020).

Creating a positive school climate for educators is equally important. Teachers working in a supportive environment are less likely to experience high-stress levels, burnout, and turnover (Mahoney, Weissberg, Greenberg, Dusenbury, Jagers, Niemi et al., 2021). Instead, they report higher rates of job satisfaction, instructional effectiveness, self-efficacy, motivation, and overall well-being (Alonso-Tapia & Ruiz- Díaz, 2022; Buonomo, Pansini, Cervai, & Benevene, 2022; Garcia-Torres, 2019; Harrison, King, & Wang, 2022; Jentsch, Hoferichter, Blomeke, Konig, & Kaiser, 2022; Lavy

& Bocker, 2018; Mahoney et al., 2021; Shibiti, 2020). While positive school climates have been shown to provide numerous benefits, there is still a need to explore how to establish them throughout an entire school or district (Mahoney et al., 2021). Therefore, educators and administrators need practical methods to promote growth and potential in all students while enhancing teachers' professional experiences. This article examines the effects of an evidence-based, school-wide program designed to create and maintain a supportive learning environment for all stakeholders.

A systemic approach to creating a supportive learning environment

To cultivate a positive school environment, it is imperative to involve all stakeholders, including teachers, students, administrators, and parents (National Center on Safe Supportive Learning Environments, 2016). Schools that aim to establish such a climate must proactively take measures that set them apart from those that struggle to maintain long-lasting changes. These measures involve creating a shared vision, providing opportunities for professional development, and collectively incorporating innovative approaches into the school-wide system (National Center on Safe Supportive Learning Environments, 2016). By doing so, schools can ensure that all members work towards a common goal and have the necessary resources to achieve it.

Establishing a shared vision is critical in providing a coherent sense of direction and purpose for the entire school community (Mahoney et al., 2021; National Center on Safe Supportive Learning Environments, 2016). This process involves identifying the core values, beliefs, and objectives that all stakeholders can rally behind and integrating professional development opportunities around this unified vision. Additionally, collaborating on this vision can promote trust and respect among school staff and help facilitate the successful execution of various professional development initiatives.

In education, professional development must focus on providing practical knowledge and skills that can help solve specific problems and motivate learners to apply what they have learned (Dierking & Fox, 2012). In light of the ongoing COVID-19 pandemic, it is equally important to consider the social and emotional environment of classrooms and schools where these practices are implemented (U.S. Department of Education et al., 2018). Teachers require support in addressing their students' social and emotional needs and managing their stress levels (Jones, Brush, Ramirez, Mao, Marenus, Wettje et al., 2021). By integrating these aspects into professional development, leaders can fill a critical skills gap in formal teacher training and better equip educators to support students dealing with classroom social, emotional, and behavioural challenges (Bottiani, Lindstrom Johnson, McDaniel, & Bradshaw, 2019; Mahoney et al., 2021).

Leader in Me program

Leader in Me (LiM) is a comprehensive Pre-Kindergarten to Grade 12 (PreK-12) whole-school model involving all staff in implementation training and shared leadership opportunities by integrating leadership development into the school's curriculum and culture (FranklinCovey, 2023). A recent report by the Harvard Graduate School of Education (Jones et al., 2021) identified LiM among a small set (three of 33 total programs) that offered the highest levels of professional development sup-

port and built educators' social and emotional competence as part of the professional development. Jones and colleagues (2021) noted that students participating in the program report increased confidence, improved social skills, and a greater sense of responsibility resulting from the whole-school approach. Similarly, Bradshaw, Cohen, Espelage, and Nation's (2021) systematic review of school climate research found that programs that began with adults and were delivered through classroom instruction positively impacted school climates.

The LiM program emphasizes developing positive relationships with peers, teachers, and the wider community. The LiM core training is facilitated for the entire staff over three years. Implementation coaching deepens the practices and supports targeted goal setting, while executive coaching supports administrators by providing the leadership and support needed for sustainable growth.

For students, developmentally scoped curriculum-based learning, empowering instructional practices, and shared leadership help them learn and apply personal and interpersonal leadership skills in increasingly larger real-world contexts. Students engage in LiM lessons throughout the school year. For example, pre-kindergarten students engage in 45 lessons lasting 15 minutes each. In contrast, students in grades K-8 participate in 35 learning modules, each comprised of four 15-minute lessons, for 140 lessons each school year. High school students participate in four courses, either through digital only, live only, or hybrid (digital and live) delivery, as determined by each school. Each course is designed to be delivered over one semester, totaling four semesters.

Beyond curriculum-based learning, students engage in authentic activities to practice their personal and interpersonal leadership skills at the classroom and school levels. Students select their roles and are provided with leadership opportunities to practice critical relational, communication, and leadership skills in meaningful contexts. Additionally, students create and expand leadership notebooks or portfolios to include details about themselves—including their strengths and interests and their personal and academic goals—and their progress toward their individual goals, evidence of their learning, celebrations of personal growth milestones, and experiences in leadership roles in the classroom, across the school, at home, and in the community.

Purpose of the study

The purpose of the current study is to utilize research on the LiM program to explore the effect of a comprehensive approach to improving school climate and student behaviours. To do this, the researchers conducted a meta-analysis of the LiM program using studies that explored the program's impact on school climate and student behaviour. The researchers hypothesized that a) teachers participating in the LiM program would have a more favourable view of the school climate and b) students would demonstrate increased engagement in the school environment, resulting in improved behaviour. The research questions guiding this inquiry included: 1) What effect does the LiM program have on teachers' view of the school environment compared with educators in non-LiM schools? 2) What effect does the LiM program have on student behaviour in LiM schools compared with student behaviour in non-LiM schools?

Method

The researchers used several search strategies to locate the pool of publications eligible for study inclusion. The present study followed the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) to ensure transparency, accuracy, and completeness (Shamseer, Moher, Clarke, Ghersi, Liberati, Petticrew et al., 2015). In addition, when available, the researchers used the school and student characteristics to investigate the mediating effects of these components.

Inclusion and exclusion criteria

Eligible published or unpublished research reports consisted of studies that a) used randomized control or quasi-experimental, between-groups quantitative research designs; b) were published in peer-reviewed journals, dissertations, conference papers, or theses; c) used the LiM program as the independent variable; d) included sufficient data to complete an effect size; and e) were published in English. In addition, studies were eliminated if they included no pretest score, reported previously published data, or were qualitative or conceptual publications.

Search and coding procedures

The LiM literature consisted of research studies identified by researchers at FranklinCovey through exhaustive computerized database searchers. A trained coding team independently conducted an exhaustive electronic database search of Academic Search Complete, ERIC, ProQuest (dissertations and theses), PsycINFO, and Google Scholar. Additionally, to minimize researcher bias, the coding team examined the identified studies using a coding manual. Finally, the first author reviewed all identified studies and resolved discrepancies through discussion, ensuring inter-rater reliability.

Studies that implemented the LiM intervention encompassed the treatment group. Non-LiM schools made up the comparison group. Data collection included study characteristics (participants, school level, state, region), mean scores, and standard deviations for each outcome measure. The outcome measures were then organized into the school climate and behaviour domains. The behaviour domain involved attendance, discipline, leadership, and life skills data. The life skills data refer to social competence, communication, and decision-making. The climate domain included elements that impact the culture or school climates, such as staff and student perceptions of the learning and professional environments.

Data analysis

The statistical analysis was completed using the Comprehensive Meta-Analysis, Version 4 software (Borenstein, Hedges, Higgins, & Rothstein, 2022). First, each study's standardized mean difference effect was calculated using the difference of the treatment group's post-test mean score minus the control/comparison group's post-test mean score divided by the pooled standard deviation (Lipsey & Wilson, 2001). This standardization procedure is appropriate for group designs because it allows for

direct study comparisons. Additionally, the researchers computed mean effect sizes for each domain (school climate and behaviour) using the weighted invariance effect size methods, selected random-effects models, and calculated 95 percent confidence intervals (CIs) for each effect size to provide a more accurate range of fluctuation of the samples as compared with other samples and used the point estimates to evaluate the null hypotheses (Wampold, Mondin, Moody, Stich, Benson, & Ahn, 1997; Wampold, 2001). An alpha level of .05 was used to determine statistical significance.

A positive effect size implied that the intervention had a favourable impact on the treatment group. Studies with various outcomes allowed for the coding of multiple effect sizes. In all cases, the LiM program was the independent variable, and the designs examined the difference between participants who engaged in the LiM program versus participants who did not. Studies that assessed multiple outcome effect sizes were disaggregated to examine the differential effects of the LiM program. Finally, all results were interpreted using Cohen's benchmarks, which noted $d \leq .20$ as small, $d = .50$ as medium, and $d > .80$ as large (Cohen, 1988).

Cochran's Q statistic was used to estimate heterogeneity in the effect size. A significant Q ($p < .05$) indicates that the null hypothesis related to a common effect size among studies can be rejected. A non-significant Q suggests the reverse. Finally, the authors used the I^2 statistic to measure what proportion of the variance within the meta-analysis could be attributed to real differences between the studies and what could be attributed to sampling error. Because significant findings are more likely to be published, publication bias threatens any meta-analysis (Borenstein, Hedges, Higgins, & Rothstein, 2009; Rosenthal, 1991). Orwin's (1983) fail-safe N test was conducted to combat this threat.

Results

The initial search strategy returned 170 studies, 46 of which were found to be duplicates. Once duplicate studies were removed, raters reviewed the remaining 124 studies to determine whether they met the inclusion criteria. One hundred and twelve studies were excluded for failing to meet the inclusion criteria or presenting insufficient data to proceed. In addition, one peer-reviewed article, one conference paper, and 10 dissertations were retained, yielding 96 effect sizes. The final set of studies included data from 198,176 students, 291 schools, and 522 teachers from the Northeast ($n = 2$), Midwest ($n = 3$), and Southern ($n = 7$) regions of the United States. Ten studies occurred in elementary schools and two middle schools. Three studies followed an experimental design and randomly assigned participants to treatment and control groups (25%). The treatment group included 74,866 (38%) students, 66 (23%) schools, and 257 (49%) teachers participating in the LiM program.

Aggregated effect of the LiM program

The aggregated, weighted effect size was positive and statistically significant ($d = 0.20$; $p < .001$; 95% CI [0.15–0.25]), suggesting that the LiM program had a positive impact when considering the combined effects of the educator's views of the school climate and student behaviours. The expectation of variance is more than one would anticipate from sampling error, as evidenced by the homogeneity test (Q) and I-squared

statistic (I^2). Cochran's Q was statistically significant ($Q[95] = 2{,}466.85$, $p < .001$, and $I^2 = 96\%$), indicating a high variation among the observed effect sizes yet reflective of true effects rather than a sampling error (Borenstein et al., 2009; Higgins & Thompson, 2002). The variance of true effect sizes is represented by the Tau-squared (τ^2) of .051, and the prediction interval estimates indicate that 95 percent of all comparable populations would fall between -0.252 and 0.654. Inspection of the funnel plot of effect sizes and standard error combinations depicted a symmetrical pattern surrounding the mean effect near the top of the graph. In the trim-and-fill random effects model, the imputed point estimate is 0.079 (95% CI [0.016, 0.141]). This estimate suggests that 22 missing studies could fall on the left side of the plot (negative effect). Related to the analysis for aggregated effects, the authors conducted separate analyses to determine the potential effect when grouped by domains and outcome variables and answer the corresponding research questions. The results in Table 1 show significant effects for each domain and outcome area.

Table 1: Aggregated mean effects and confidence intervals by domain and outcome variable

Variable	*k*	*d*	95% CI	*Q*	*p*	I^2
Behaviour domain	58	.13	[0.068, 0.183]	2,008.842	0.001	97.00
Attendance	2	.24	[0.05, 0.43]	.615	0.010	0.00
Life skills	51	.07	[0.06, 0.09]	173.56	0.000	71.19
Discipline	5	11.05	[3.81, 18.28]	1,779.03	0.000	99.76
School climate domain	38	.34	[0.21, 0.48]	313.03	0.000	88.18

Note: *k* = number of study outcomes; *d* = effect size; CI = confidence interval; *Q* value = test of heterogeneity; *p* = significance; I^2= *measure* of homogeneity; Life skills = social competence, communication, and decision-making

School climate

School climate encompassed the educators' views of school cultures, learning environments, and support for teacher and staff professional roles, including shared leadership. The results indicate positive and significant effects in favour of the treatment group. The analysis of school climate, based on the random-effects model, yielded 38 effect sizes ($d = 0.34$; $p < .001$; 95% CI [0.208–0.447]). Cochran's Q was statistically significant $Q(95) = 313.027$, $p < .001$, and $I^2 = 88\%$). Using a criterion alpha of 0.100, we can reject the null hypothesis that the true effect size is the same in all these studies. The I-squared statistic is .88, which tells us that some 88 percent of the variance in observed effects reflects variance in true effects rather than sampling error. Assuming that the true effects are normally distributed (in *d* units), we can estimate that the prediction interval is 0.454 to 1.139.

Student behaviour

Student attendance, discipline, and life skills (social competence, communication, and decision-making) are reflected within the behaviour domain. Fifty-eight effect sizes

were calculated using the random-effects model, resulting in a mean effect size of 0.13 with a 95 percent confidence interval of 0.068 to 0.183. The Cochran's *Q* Q-value is 2,008.842 with 57 degrees of freedom and $p < 0.001$, and $I^2 = 97$ percent; therefore, the null hypothesis was rejected. Again, assuming the true effects are normally distributed (in *d* units), we estimate the prediction interval is -0.299 to 0.550. Within the behaviour domain, Table 1 shows that decreases in absences ($d = .24$) and discipline referrals ($d = 11.05$) accounted for the largest effects.

Moderating effects of the LiM program

Next, the researchers conducted moderating analyses for various study characteristics. Table 2 presents the results of the moderating analyses for data level (school, student, and teacher), school level (elementary, middle, and elementary to middle [grades 4–8]), and geographic region (Midwest, Northeast, and South). Specifically, the null hypotheses were rejected for significant differences in the student and teacher data levels, elementary and middle schools, and Midwest and Northeast regions, indicating that the null hypothesis related to a common effect size can be rejected. Related to the data level, the highest effects were reported when data came from the school ($d = .23$) and teacher ($d = .38$) levels. Studies conducted at the elementary level attributed to nearly all the effects at the school level ($d = .99$). Lastly, studies conducted in the Midwest ($d = 2.56$) and Northeast ($d = .50$) had the highest impact on school climate and student behaviours.

Table 2: Moderating analysis for aggregated effect

Moderators		*k*	*d*	95% CI	*Q*	*p*	I^2
Data level	Schools	16	0.23	[0.13, 0.34]	12.186	0.665	0.000
	Students	58	0.13	[0.07, 0.18]	2,018.71	0.000	97.18
	Teachers	22	0.38	[0.20, 0.57]	289.08	0.000	92.74
School level	Elementary & middle	50	0.07	[0.06, 0.09]	131.19	0.000	62.65
	Elementary	44	0.99	[-0.02, 0.60]	2,155.94	0.000	98.01
	Middle	2	0.33	[-0.32, 0.54]	0.019	0.890	0.000
Region	Midwest	17	2.56	[1.48, 3.62]	1,810.557	0.000	99.116
	Northeast	18	0.50	[0.27, 0.73]	313.253	0.000	94.573
	South	61	0.08	[0.06, 0.09]	175.670	0.000	65.845

Note: *k* = number of study outcomes; *d* = effect size; CI = confidence interval; *Q* value = test of heterogeneity; *p* = significance; I^2 = measure of homogeneity

Publication bias

Orwin's (1983) fail-safe *N* test was used to estimate the likelihood that any existing bias could be solely responsible for the observed effects (Borenstein et al., 2009; Rosenthal, 1991). The results of the fail-safe *N* test indicated that the researchers would need to add another 180 studies with null effects to the current analysis to reduce the average impact of the LiM program ($k_{fs} = 180$).

Discussion

The purpose of the current study was to utilize research on the LiM program to understand the effect of a comprehensive approach to improving school climate and student behaviours. The overall mean effect size of d = .20 demonstrates that LiM positively impacted the students and teachers participating in the intervention. Using Cohen's (1998) effect size rubric, this finding would suggest that the LiM had a modest influence on the outcomes of the program participants. However, from a practical perspective, education leaders must also consider their specific goals and objectives of utilizing the program the populations served, and even a small improvement can provide meaningful insights into the real-world application to their school communities (Sink & Stroh, 2006). To explore the overall effect in greater depth, the following will review the results of the guiding research questions regarding the educators' view of the school climate and student behaviours.

Research question 1 examines how the LiM program impacts the teachers' views of the school environment compared with educators in non-LiM schools. The comprehensive literature search yielded 38 effect sizes that addressed the educators' views of the school climate and resulted in an effect size of d = .34, suggesting the LiM program positively influences teachers' views of the school environment. This finding supports well-established connections between school climate and teacher satisfaction (Bradshaw et al., 2018). School climate research often relies on student beliefs about the school environment (Bradshaw et al., 2021), observations within the classroom (Perlman, Falenchuk, Fletcher, McMullen, Beyene, & Shah, 2016), and relationships between students and adults (Perlman et al., 2016; Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). However, the positive effect of the school climate in this study (d = .34) suggests that teachers working in LiM schools were more likely to have favourable views of their school cultures, learning environments, and support for teacher and staff professional roles, including shared leadership, compared with those in non-LiM schools. Practically speaking, in this study, the school leaders who chose to use the LiM program had a greater chance of impacting the school climate factors necessary for supporting teachers' ability to balance their professional (instructional effectiveness, self-efficacy, motivation) and personal needs, such as stress management, burnout, and overall well-being (Alonso-Tapia & Ruiz- Díaz, 2022; Buonomo et al., 2022; Garcia-Torres, 2019; Harrison et al., 2022; Jentsch et al., 2022; Lavy & Bocker, 2018; Mahoney et al., 2021; Shibiti, 2020) than leaders who did not use the intervention. The LiM approach of beginning with teacher professional development and continued support through trained coaches is also consistent with researchers who found that professional learning, combined with coaching, increases teachers' sense of efficacy (Bradshaw et al., 2018) and is necessary for fostering consistent engagement and their relationship with their principals (Belay, Melese, & Seifu, 2021).

Research question 2 explored how the LiM program impacts student behaviour in LiM schools compared with student behaviour in non-LiM schools. In this study, the result of the aggregated mean for the LiM studies (d = .20) showed a positive combined effect of teachers' view of the school climate and the student behaviour outcomes. Taken independently, data from the behaviour domain resulted in a .13 small yet positive effect for students enrolled in a LiM school. Other researchers have noted the re-

lationship between school climate and student behaviour (Niu et al., 2022; Okonofua et al., 2022; Poulou, 2020; Reaves et al., 2018), including fewer incidences of violence and bullying (Cornell, Shukla, & Konold, 2016), while promoting students' sense of belonging, respect, and value (Bradshaw et al., 2021). The positive effect in the behaviour domain suggests that student behaviour is malleable to school-wide leadership development, such as the LiM program.

The current findings add to the growing literature examining how school-wide leadership development programming can impact student behaviours. Specifically, students at the LiM schools were likelier (d = .13) to demonstrate proactive behaviours (reduced absences, fewer discipline referrals, and positive life skills) than non-LiM schools. In this study, favourable attendance (d = .24) and discipline rates (d = 11.05) among the treatment group are promising outcomes. Previous research indicates that adverse school climates are associated with chronic absence (Kuhfeld et al., 2020; Van Eck et al., 2017). Importantly, these results suggest that students participating in the LiM program attended more school days and were removed from the classroom or school on fewer occasions than their peers. Given that some students are disproportionally impacted by zero-tolerance attendance and discipline policies, the current study's positive results on students' behaviours provide leaders with a viable alternative to punitive disciplinary practices.

The LiM program helps students develop competencies that lead to personal and interpersonal effectiveness (e.g., social competence, communication, and decision-making). In the current study, the authors conceptualized these competencies as life skills. The small yet positive effect on life skills (.07) suggests the LiM program increased students' ability to communicate appropriately with peers and adults and manage their thoughts and emotions, leading to increased responsibility for one's actions and decision-making. This result is consistent with previous research that found evidence that weekly/daily exposure to leadership development services in third grade was associated with positive effects on social skills (.06 – .11), student-teacher relationships, (.06), and impulsiveness (-.06 – -.09) (Zhai, Raver, & Jones, 2015). Finally, increases in student's development of life skills align with previous meta-analytic research (Durlak et al., 2011) that finds when stakeholders create safe and welcoming environments, students' abilities to hone their personal and interpersonal leadership skills also increase. Together, these findings can provide important implications for leaders seeking to promote active engagement, foster genuine relationships with peers and adults, and amplify student opportunities for growth.

Implications

This meta-analysis had several implications for education leaders, researchers, and policymakers. Firstly, school and district-level education leaders can use the findings to improve practice through comprehensive interventions that create a safe and supportive learning environment for adults and students (Bradshaw et al., 2021). To ensure effectiveness, educators need valid and reliable instruments to accurately assess continuous improvements and program outcomes (Bradshaw et al., 2021).

Secondly, the findings of this meta-analysis can help shape education policy decisions since these data show the impact of a comprehensive, whole-school improve-

ment approach, such as LiM, on teachers' views of the school environment and student behaviour. Education policymakers can apply these findings as they revise or develop new policies to ensure educators feel supported and empowered. The findings show that creating a supportive learning environment that begins with supporting the adults can also support students. Furthermore, the LiM program provides leaders with a proactive approach to improving student attendance and behaviours rather than using zero-tolerance discipline policies.

Thirdly, there continues to be a need for more rigorous randomized and quasi-experimental studies that measure the impact of the LiM program. As schools continue to address the post-pandemic needs, including teacher shortages, high stress and burnout, student learning recovery, and mental wellness, district and school leaders must identify evidence-based programs that improve school environments and student engagement. Leaders can use the current results and determine how their school and student data align with their local goals to leverage programs and opportunities to improve learning environments (Sink & Stroh, 2006).

Finally, school districts and school leaders can collaborate and form university–school partnerships to design program planning and evaluation studies to explore the various school and student characteristics that influence the findings. Educators and policymakers must know that cultivating district and school relationships to conduct rigorous research is an investment. Creating opportunities for collaborations that are mutually beneficial is necessary to maintain an open relationship. Understanding the importance of participating in research studies, data sharing, analysis, and disseminating findings is a hallmark of best practices. Mutually beneficial relationships where skills and knowledge are developed for multiple stakeholders support the improved delivery of services and local practices.

Limitations

To understand the impact of the LiM program, researchers must account for all relevant data when reporting program design and protocols (Erford, Savin-Murphy, & Butler, 2010; Lipsey, 2003). In the current study, missing statistical information and a lack of school characteristics and student demographics could have limited the analysis. Many excluded studies failed to meet inclusion because they needed to include a quantitative design, with the majority following a qualitative approach (n = 53). Most of the studies included published dissertations (n = 10). The absence of additional peer-reviewed publications conducted with diverse populations in K-12 settings may have impacted the results. The included studies were limited to publications in the United States with elementary and middle school settings in the South, Midwest, and Northeast.

Additionally, the accumulated research exclusively evaluated school climate and student behaviour; other outcomes to explore could include effects related to district policies, the collaboration between teachers, counsellors, and caregivers, teacher and principal relationships, teacher and student perspectives, and parental involvement. Limited student and school characteristics also restricted the opportunity to explore the potential influence of moderators. Finally, the inclusion criteria for eligible studies were restricted to peer-reviewed manuscripts, conference papers, and published/unpublished dissertations due to the research questions investigated.

Future research

This meta-analysis focused on the school climate and student behaviour (including attendance, discipline, and life skills) as a precursor to improving academic learning. More research is needed to explore the relationships between LiM school environments, student behaviour, and student learning outcomes. Researchers should include students' and educators' demographics (e.g., sex, ethnicity, exceptionalities, and socioeconomic status) and study characteristics (e.g., geographic location, school setting—urban, suburban, rural) necessary to evaluate their effects on the student, teacher, and school outcomes. Future researchers should measure and report on data from multiple perspectives, including diverse and marginalized student populations, families, and communities, to explore how these variables can influence intervention opportunities and outcomes. Gathering school and student-level data allows researchers to examine how their existing LiM program and practices encourage or inhibit program implementation and continuous improvement.

This meta-analysis included one study that identified schools with LiM Lighthouse designation. This designation is given when schools have fully implemented and provided data demonstrating high fidelity with program delivery. Future researchers should investigate the impact of LiM across the various stages of program implementation and overtime. Similarly, the studies focused on the whole school curriculum only. Future research that includes other programming (online curriculum, parent programs) is warranted.

Additionally, district and school leaders are encouraged to partner with researchers to conduct program and outcome research studies within the current educational and social contexts. Gathering and sharing data is essential for identifying who selected programs to impact all stakeholders. Helping teachers, caregivers, and students create social environments that encourage positive student behaviours and engagement in academic learning can help mitigate pandemic-related learning losses. Understanding how the LiM program can assist students in developing life skills related to academic, college, and career readiness can help strengthen the rationale for data-driven decision-making and program improvements.

Conclusion

To foster a positive and thriving school environment, it is essential to involve all key stakeholders, including educators, pupils, school leaders, and parents. Schools committed to this goal must establish a shared vision aligning with the values and objectives, providing relevant and practical professional development opportunities and incorporating innovative, evidence-based programs throughout the school system.

The connection between a supportive learning environment and improved teacher and student outcomes is demonstrated through this meta-analysis. The findings support that the whole school improvement approach can improve teachers' views of the school climate and student behaviour. By utilizing the LiM program, schools can provide leaders with an evidence-based approach that encourages stakeholders to work collaboratively to foster a positive school climate, strong relationships, and personal growth for all involved.

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* Included in the meta-analysis.