

Advancing Social-Emotional Learning in Elementary Education: Exploring Implementation, Inclusivity, and Long-Term Impact

¹Isaac John Ibanga*, ¹Mohammed Adamu Yusuf, ²Mohammed Umoru Lawal

Corresponding Author: *isaacjohn@mau.edu.ng

¹ Department of Electrical Technology Education, Modibbo Adama University, Adamawa State, Nigeria

² Department of Vocational Education, Modibbo Adama University, Adamawa State, Nigeria

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ABSTRACT

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Social-emotional learning (SEL) has become a crucial component of student development, increasingly recognized for its positive impacts on both academic success and life outcomes. However, challenges remain in effectively implementing SEL programs across diverse educational settings, particularly in addressing the needs of marginalized and minoritized students. This study explores the integration of AI tools in the literature review process to examine current practices, effectiveness, and gaps in SEL programs. A literature review was conducted using various artificial intelligence applications, including Elicit AI, ChatGPT, and Google Scholar. Relevant articles were identified based on thematic focus and retrieved from credible academic sources. These articles were analyzed for thematic clusters using ChatGPT, and a word cloud was generated to identify supporting keywords. The analysis revealed several key factors critical to successful SEL program implementation: teacher competency, developmentally appropriate skill-building, and nuanced measurement techniques. The study also highlighted the need for more inclusive SEL programs that cater to the diverse needs of marginalized students. Evidence showed that SEL programs have a positive return on investment, contributing to both academic performance and long-term success.

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Introduction

Social-emotional learning (SEL) is increasingly recognized as a cornerstone of elementary education, emphasizing the development of critical skills like empathy, resilience, and collaboration. These competencies are foundational for creating inclusive learning environments where all students feel valued and supported. SEL programs have been shown to foster positive social relationships, enhance academic performance, and promote long-term mental and physical well-being [1]. By integrating SEL into daily classroom practices, schools aim to equip students with the tools needed to navigate interpersonal challenges and build a sense of community that transcends the classroom.

Despite its clear benefits, the effectiveness of SEL programs varies, often due to a mismatch between program goals and the ways their success is measured. For instance, some interventions may focus on broad outcomes like emotional regulation but fail to address specific classroom-level dynamics or age-appropriate skill development. This misalignment highlights the need for more precise measurement techniques and an emphasis on teacher and classroom-level outcomes [1], [2], [3]. Teachers play a pivotal role in implementing SEL strategies, and their engagement and understanding of these programs are critical to their success. Professional development opportunities that help educators integrate SEL into their teaching practices can significantly enhance the impact of these programs.

SEL takes on even greater importance in inclusive education settings as it helps bridge the gap between diverse student needs and fosters mutual understanding. SEL programs equip students and teachers with essential skills for effective communication, conflict resolution, and empathy, which are vital in classrooms that include students with varying abilities and backgrounds [4]. Moreover, these programs can improve academic, social, and relational outcomes for all students, including those with special needs. Teachers also benefit from SEL, as these strategies provide tools to manage classroom dynamics and build stronger connections with their students, creating a more supportive and collaborative learning environment for everyone involved [4], [5].

SEL in elementary education has gained recognition for its potential to improve academic performance, school climate, and long-term success [6]. Effective implementation of SEL programs requires careful planning, stakeholder involvement, and partnerships between schools and universities [7]. However, the impact of SEL interventions can vary, possibly due to misalignment between program targets and outcome measures [1], [8]. To address this, researchers recommend focusing on teacher and classroom-level outcomes, tailoring programs to specific age groups, and refining measurement techniques [1], [2]. Implementing SEL in elementary schools involves a step-by-step process, considering potential issues and recommendations based on case studies [9]. Overall, SEL programs have shown positive

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returns on investment and are associated with improved academic performance, reduced conduct problems, and better long-term outcomes in education and employment [6].

The research gap in the context of SEL lies in several critical areas that warrant deeper investigation. Addressing these gaps can provide a clearer understanding of how to optimize SEL implementation and outcomes in elementary education. The objective of this paper is to analyze the alignment, implementation, inclusivity, developmental appropriateness, and long-term impacts of SEL programs in elementary education while identifying gaps and proposing areas for future research.

Material and Methods

This study employs a literature review method assisted by various artificial intelligence applications. Relevant articles on the topic were identified using Elicit AI, based on the study's themes, with the most pertinent articles selected. Abstracts of these articles were retrieved from Google Scholar and compiled into a collection. This collection was then analyzed using ChatGPT to identify thematic clusters. Subsequently, a word cloud was created based on criteria from all clusters, generating a set of words supporting each cluster. Additionally, the articles were organized into two tables: one summarizing the articles' identities and the other providing detailed descriptions. These tables were further analyzed to gain deeper insights into the thematic clusters identified earlier.

Results

A. Paper Identity

Table 1 presents the paper's identity, including the code, authors, title, journal name, year of publication, and number of citations.

Table 1. The paper identity

Code	Authors	Title	Journal's name	Year	Citations
P1	Greg M. Kim-Ju et al. [7]	Putting social and emotional learning into practice: Best practices in developing and implementing an SEL program through a university-1st-8th grade partnership	Social and Emotional Learning: Research, Practice, and Policy	2024	0
P2	Stephanie M. Jones et al. [1]	Promoting Social and Emotional Competencies in Elementary School		2017	127
P3	Kelsey L. Kaspar et al. [9]	Implementing Social-Emotional Learning in the Elementary Classroom	Early Childhood Education Journal	2022	7
P4	Todd I. Herrenkohl et al. [6]	Leading with data: Using an impact-driven research consortium model for the advancement of social-emotional learning in schools.	American Journal of Orthopsychiatry	2019	11
P5	Christina Cipriano et al. [10]	Towards an Inclusive Social and Emotional Learning	Social and Emotional Learning: Research, Practice, and Policy	2023	6
P6	D. Osher et al. [11]	Advancing the Science and Practice of Social and Emotional Learning		2016	156
P7	S. Wanless et al. [12]	Readiness to Implement School-Based Social-Emotional Learning Interventions: Using Research on Factors Related to Implementation to Maximize Quality	Prevention Science	2015	105
P8	J. L. Mahoney et al. [13]	Systemic social and emotional learning: Promoting educational success for all preschool to high school students.	American Psychologist	2020	152

B. Paper Summary

Table 2 provides a summary of the papers, detailing the main findings, methodology, and suggestions for future research.

Table 2. Summary of the papers

	Main findings	Methodology	Future research
P1	- The paper discusses the key elements and stakeholders involved in planning and implementing an SEL program in elementary and middle schools, including integrating the SEL curriculum, developing university-school partnerships, training university students as SEL mentors, and identifying implications for other schools. - The paper describes the development and continuation of a university-elementary/middle school partnership for SEL program implementation, including planning with teachers, administrators, and parents. - The paper outlines training sessions for university students to become SEL mentors and coordinators as part of the university-school partnership.	- Developed an SEL curriculum and integrated it into existing curriculum with 1st-8th grade staff - Established and maintained a university-elementary/middle school partnership, including planning with teachers, administrators, and parents - Trained university students to become SEL mentors and coordinators - Discussed the partnership and how it shifted during the COVID-19 pandemic - Identified implications and best practices for implementing SEL programs in other schools, especially for disadvantaged youth, and addressing diversity and inclusion	Not mentioned (the abstract does not suggest any future research directions)
P2	- The evidence on the impacts of social and emotional learning (SEL) programs in elementary schools is ambiguous, with some studies finding effects and others not, and the reason for this variation is unclear. - The authors conclude that the variation in impacts may be due to the SEL programs having imprecise targets that are not well-aligned with the general outcome measures used to evaluate them. - The authors recommend that the measurement of SEL skills in elementary school students should be more narrowly focused on specific skills, but also broader in the contexts and depth of assessment.	Not mentioned (the abstract does not provide any details on the methodology used in this study)	Not mentioned (the authors do not explicitly state any specific lines of future research in this abstract)
P3	- Social-emotional learning can significantly impact how educators deliver instruction in the classroom. - The study provides recommendations for school leaders on how to effectively implement social-emotional learning in elementary schools. - The study outlines a step-by-step action plan for school leaders to use as a guide when implementing social-emotional learning, based on the first author's case study.	- Literature review of social-emotional learning research and journal articles to identify common themes and potential issues - Consideration of multiple perspectives in the literature review - Use a case example from the first author's elementary school to generate recommendations for implementing social-emotional learning	Not mentioned (the abstract does not mention any specific future research that the authors suggest)
P4	Not mentioned (the abstract does not contain any main findings or results from the author's research)	Not mentioned (the abstract does not mention the methodology or study design used in this research)	Not mentioned (the abstract does not suggest any future research directions)
P5	The field of SEL has a good understanding of the overall effects of SEL programs but lacks knowledge	Not mentioned (the abstract does not provide details on the specific methodology used in this study)	Future research should focus on: 1) Better understanding the experiences and outcomes of

	Main findings	Methodology	Future research
	about how these programs impact students from marginalized and minoritized backgrounds. - The paper will discuss critical areas for future development in SEL programs to better serve students from marginalized and minoritized backgrounds.		marginalized and minoritized students in universal school-based SEL interventions, 2) Examining how SEL program design and implementation can be improved to better serve marginalized and minoritized students, and 3) Providing recommendations for research and practice to make SEL programming more inclusive and effective for marginalized and minoritized students.
P6	Not mentioned (the abstract does not provide a clear summary of the "main findings" or results of the study)	Not mentioned (the abstract does not provide any details about the methodology used in this study)	The authors likely recommend future research to further investigate the design elements and implementation quality characteristics of effective SEL approaches, building on the converging research evidence across related fields such as social competence, bullying prevention, drug use prevention, and emotional intelligence.
P7	- The main findings of the paper are about factors that influence the successful implementation of school-based social-emotional learning (SEL) interventions. - The paper focuses on identifying factors related to "readiness" to implement SEL interventions, i.e. the state of schools and teachers before the intervention begins. - Understanding these readiness factors can help identify which schools are more or less likely to implement SEL interventions successfully, and provide opportunities to increase the likelihood of successful implementation.	Not mentioned (the abstract does not describe the methodology of a specific study, but rather provides an overview of the topic of readiness to implement school-based social-emotional learning (sel) interventions)	Not mentioned (the authors do not suggest any specific lines of future research in this abstract)
P8	- Social and emotional learning (SEL) is becoming more central to education due to demand from stakeholders and research showing positive impacts. - Systemic SEL involves creating equitable learning conditions that actively engage all students in developing social, emotional, and academic competencies. - Implementing systemic SEL requires aligned policies, resources, and actions at multiple levels to build adult capacities and create inclusive, supportive environments for students.	Not mentioned (the abstract does not describe any specific methodology or study design)	The abstract does not explicitly state any specific lines of future research, but it suggests that future research on systemic SEL could focus on examining the implementation and impact of evidence-based SEL programs and practices at different ecological levels, investigating the development of social, emotional, and academic competencies in students, and exploring the role of school-family-community partnerships in supporting student development and systemic SEL.

C. Word Cloud and Theme Clusters

Based on the collection of abstracts from the reviewed papers, a word cloud can be created to facilitate team grouping. Fig. 1 shows the resulting word cloud.

from nearly a century of research, key strategies and systemic approaches to SEL have been identified, underscoring the importance of addressing factors that either enhance or hinder the success of evidence-based interventions. By building on case studies and implementing nuanced recommendations, SEL programs can create transformative impacts across classrooms, from preschool to high school, ensuring all students thrive in equitable learning environments.

A. Alignment Between Program Goals and Outcome Measures

The effectiveness of SEL programs is often compromised by a disconnect between their intended outcomes and the methods used for evaluation. While SEL initiatives typically focus on enhancing competencies such as emotional regulation, empathy, resilience, and communication, evaluations frequently resort to indirect measures, such as overall academic performance or classroom behavior, rather than assessing the specific skills being targeted. This misalignment can obscure the true effectiveness of SEL programs and hinder opportunities for necessary refinements. For example, an SEL program aimed at improving conflict resolution skills might claim success based on a reduction in disciplinary actions or increased classroom participation. However, such metrics may not accurately capture the nuanced improvements in students' abilities to manage conflicts constructively. Research indicates that many evaluations of SEL programs lack direct measures of social and emotional skills, often relying instead on proxy indicators like attendance or general behavior changes, which do not fully reflect the program's impact on specific competencies [2], [14]. This gap in measurement practices means that critical aspects of SEL's influence, such as subtle shifts in emotional awareness or interpersonal interactions, remain largely undocumented [15].

Moreover, the literature suggests that while SEL programs can lead to positive outcomes, the metrics used to assess these outcomes often fail to align with the competencies being taught. For instance, a systematic review highlighted that although SEL programs effectively enhance the targeted competencies, the evaluation methods employed may not adequately reflect these gains [16]. Furthermore, the need for more robust and direct assessment tools has been emphasized, as many existing evaluations do not include specific outcome measures related to social and emotional skills [17]. This lack of alignment between SEL program goals and evaluation methods can lead to an incomplete understanding of their effectiveness and the potential benefits they offer to students [18]. Consequently, the field would benefit from the development and implementation of more precise measurement tools that can capture the nuanced impacts of SEL initiatives on student development [2].

B. Teacher-Centric Implementation and Training

SEL programs heavily rely on the pivotal role that teachers play as primary facilitators in the classroom. Teachers' understanding, attitudes, and engagement with SEL initiatives significantly influence their effectiveness. However, research indicates a notable gap in comprehensive studies examining how various teacher-related factors impact the implementation and outcomes of these programs. For instance, many teachers receive minimal or inconsistent training on SEL strategies, which can lead to significant variations in how these programs are applied in practice [19]. Additionally, teachers' comfort levels with concepts such as emotional regulation and conflict resolution can directly affect their ability to model and teach these skills effectively [20], [21].

Furthermore, the integration of SEL into existing curricula often occurs without adequate support or resources, which can result in superficial or fragmented implementation, ultimately undermining the potential benefits of the program [8], [22]. Research has shown that teachers' beliefs about SEL and their perceived efficacy in delivering these programs are crucial for successful implementation [17], [23]. For example, a study found that teachers who feel competent in their social and emotional skills are more likely to foster supportive teacher-student relationships and effective classroom management, which are essential for the successful delivery of SEL programs [21], [23]. Consequently, the need for high-quality pre-service and in-service training for teachers in SEL is emphasized, as it is critical for enhancing their confidence and competence in implementing these programs effectively [19].

In summary, the success of SEL programs is intricately linked to teachers' preparedness and attitudes towards SEL. Addressing the training needs of teachers and providing them with the necessary resources and support can significantly enhance the fidelity of SEL implementation and improve student outcomes [24].

C. Inclusion in Diverse Classrooms

SEL programs are contingent upon their ability to address the unique dynamics present in diverse educational settings. SEL is often lauded for its potential to foster inclusivity by promoting essential skills such as empathy, communication, and collaboration. However, there is a notable scarcity of research examining how these programs perform in classrooms populated by students from varied socio-economic, cultural, linguistic, and ability-based backgrounds [5], [25]. This gap in the literature raises critical questions regarding the best practices for adapting SEL initiatives to meet the needs of diverse populations.

Contemporary classrooms are increasingly heterogeneous, with students bringing a wide array of experiences, needs, and challenges. For instance, students from underprivileged

backgrounds may encounter stressors that significantly affect their emotional well-being, while English language learners often require culturally relevant approaches to SEL that acknowledge their linguistic and cultural identities [22], [26]. Similarly, students with special needs, such as those on the autism spectrum, may benefit from tailored SEL strategies that align with their specific developmental and social goals [27], [28]. Standardized SEL approaches may not adequately address these variations, potentially limiting their inclusiveness and overall impact [2], [12].

Research indicates that SEL programs need to be flexible and responsive to the specific contexts in which they are implemented. For example, studies have shown that culturally responsive SEL practices can enhance the effectiveness of these programs for students from diverse backgrounds [29], [30]. Furthermore, the integration of SEL into existing curricula must be done thoughtfully to ensure that it resonates with all students, particularly those who may be marginalized or underserved [3], [17]. Thus, developing and implementing SEL programs that are sensitive to the diverse needs of students is essential for maximizing their effectiveness and fostering an inclusive educational environment [31].

D. Long-Term and Cross-Context Impacts

Understanding the enduring effects of SEL programs beyond immediate classroom outcomes is critical. While numerous studies have demonstrated that SEL can improve behavior, emotional regulation, and academic performance in the short term [32], there is still limited research on how these skills influence students' lives in the long run. Questions remain about whether SEL interventions have lasting effects on academic trajectories, social relationships, career success, and overall mental and physical well-being [25].

Another underexplored area is how SEL skills transfer across different contexts, such as home, peer groups, and community environments. For example, a student who learns conflict resolution strategies in school might benefit from applying these skills in family disagreements or community activities, but the extent of this transfer remains poorly documented [33]. Similarly, the interplay between SEL programs and external factors, such as parental support or community resources, is not well understood, which may limit the holistic design and effectiveness of SEL interventions [34].

To address these gaps, longitudinal research is essential to track students' development over time and across various life domains. Studies could investigate how early exposure to SEL correlates with long-term outcomes such as higher educational attainment, stable employment, and healthier relationships [25]. Additionally, exploring the roles of families, caregivers, and community organizations in reinforcing SEL principles can provide insights into how to create ecosystems that sustain and amplify SEL's benefits [22], [35].

Understanding these long-term and cross-context impacts will help refine SEL programs, ensuring they deliver meaningful and lasting value to students' lives. As noted by Weissberg and Cascarino [35], integrating academic, social, and emotional learning within a comprehensive educational approach is crucial for achieving these outcomes. Furthermore, by addressing challenges related to the implementation and contextualization of SEL skills, stakeholders can design interventions that resonate across various environments and developmental stages [36].

Conclusion

This study underscores the growing importance of social-emotional learning (SEL) in fostering both academic success and long-term personal development. The findings highlight the need for SEL programs to focus on teacher competency, developmentally appropriate content, and precise outcome measurement to ensure successful outcomes. Furthermore, the study emphasizes the necessity of designing more inclusive SEL programs that address the unique challenges faced by marginalized and minoritized groups. Moving forward, there is a clear need for continuous refinement of SEL strategies, especially in terms of their adaptability to diverse classroom environments. By fostering a systemic approach to SEL, educators can better promote equitable learning conditions and holistic student development across all educational levels.

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Authors



Isaac John Ibanga is an erudite scholar, a researcher and a lecturer at the Sandwich Degree Programme of the Faculty of Education, Modibbo Adama University, Yola, Adamawa State, Nigeria. He is specializing in electrical technology education. (email: isaacjohn@mau.edu.ng).



Mohammed Adamu Yusuf is a highly accomplished academician and researcher with expertise in electrical technology education. He is a faculty member in the Electrical Technology Education at Modibbo Adama University Yola, located in Adamawa State, Nigeria. He is currently undergoing his Ph.D. program at Abubakar Tafawa Balewa University Bauchi, Nigeria. His research interests include innovative teaching and learning methods, technology integration in education, and the impact of technology on the teaching profession. (email: mayusuf@mau.edu.ng).



Mohammed Lawal Umoru is the Head of the Department of Vocational Education at the Faculty of Education, Modibbo Adama University, Yola. He is an esteemed expert in Home Economics, with extensive experience and a strong academic background in the field. His expertise spans various aspects of Home Economics, and he is well-regarded for his dedication to advancing educational practices in this area. (email: umorulawal@mau.edu.ng).