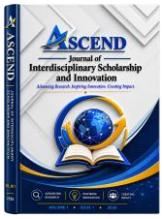
Journal of Interdisciplinary Scholarship and Innovation
Advancing Research. Inspiring Innovation. Creating Impact.
Volume 2 | Issue 2 | November | 2026



NAVIGATING THE INTEGRATION OF SOCIAL AND EMOTIONAL LEARNING (SEL) IN SCIENCE 9: A QUALITATIVE EXPLORATION OF TEACHERS' PERSPECTIVES

Oriel A. Sabado[1] and Armando S. Vinoya[2]

Authors' Affiliation:

[1]Cacawan National High School, Oriental Mindoro, Philippines
[2]Bogaoan Elementary School and Virgen Milagrosa University Foundation, San Carlos City, Pangasinan, Philippines

Corresponding Author:
oriel.sabado@deped.gov.ph

Article History:
Date Submitted: October 30, 2026
Date Accepted: November 22, 2026
Date Published: November 23, 2026

APA 7th Edition Reference:
Sabado, O. A., & Vinoya, A. S. (2026). Navigating the integration of Social and Emotional Learning (SEL) in Science 9: A qualitative exploration of teachers' perspectives. *Ascend: Journal of Interdisciplinary Scholarship and Innovation, 2*(2), 145–167. https://doi.org/10.5281/zenodo.24457898

Abstract. This study explored the lived experiences of Science 9 teachers in integrating Social and Emotional Learning (SEL) into classroom instruction in the Schools Division of Oriental Mindoro. Guided by a qualitative phenomenological research design, data were gathered through in-depth, semi-structured interviews with 15 purposively selected Science 9 teachers with direct experience implementing SEL in their instruction. Data were analyzed using Colaizzi's phenomenological method to identify significant statements, formulate meanings, and develop themes that captured the essence of participants' experiences. The findings revealed that teachers viewed SEL as an essential component of science education that supports holistic learner development, emotional regulation, positive relationships, collaboration, and responsible decision-making. Participants integrated SEL through collaborative and experiential learning activities, reflective and discussion-based strategies, and intentionally embedding socio-emotional competencies within science content and classroom routines. Despite its perceived value, teachers encountered challenges related to curriculum demands, time constraints, diverse learner needs, limited instructional resources, and insufficient institutional support. To address these challenges, participants relied on resilience, reflective practice, professional learning, and collegial collaboration. Teachers also observed that SEL integration improved learner engagement, positive behavior, self-confidence, interpersonal relationships, and a stronger sense of belonging. The study concludes that SEL is a transformative approach in Science 9 instruction, promoting both scientific literacy and socio-emotional development. The findings contribute to the limited body of Philippine literature on discipline-specific SEL implementation and provide insights for strengthening teacher support systems, professional development initiatives, and school-wide practices that promote holistic learner development.

Keywords: *emotional regulation, learner engagement, science education, Science 9 teachers, social and emotional learning, teacher experiences*

Introduction

Social and Emotional Learning (SEL) has become an increasingly important framework in contemporary education due to its recognized contribution to learners' academic success, emotional well-being, and interpersonal development. SEL refers to the process through which individuals acquire and effectively apply the knowledge, skills, attitudes, and behaviors necessary to understand and manage emotions, establish and maintain positive relationships, demonstrate empathy, make responsible decisions, and achieve personal and collective goals (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2023). Evidence continues to show that students who develop strong social-emotional competencies exhibit improved academic achievement, higher classroom engagement, better behavioral outcomes, and stronger

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interpersonal relationships (Cipriano et al., 2023; Durlak et al., 2011). Increasingly, SEL is viewed not as an add-on to schooling, but as a fundamental dimension of high-quality education that supports holistic learner development.

The growing emphasis on SEL reflects broader educational shifts toward preparing learners to navigate complex academic, social, and emotional demands. Contemporary educational research highlights that social-emotional competencies contribute significantly to learner motivation, self-regulation, resilience, collaboration, and overall school success (Mahoney et al., 2021). Similarly, Jones and Kahn (2017) argue that social-emotional competencies are essential for preparing learners to thrive in school, work, and civic life. These perspectives reinforce the importance of creating learning environments that support not only cognitive development but also learners' social and emotional growth.

Within science education, SEL has gained increasing attention because meaningful scientific learning extends beyond acquiring content knowledge. In fact, integrating SEL into K-12 science education enhances students' self-efficacy, emotional well-being, metacognitive skills, and engagement (Saroya & Buck, 2025). Science classrooms frequently require learners to engage in inquiry, experimentation, collaboration, communication, ethical reasoning, and problem-solving. Such activities often involve uncertainty, failure, persistence, and teamwork, making social-emotional competencies particularly relevant to successful participation in scientific inquiry. Research suggests that integrating SEL into science instruction promotes deeper engagement, productive collaboration, and greater confidence in learning science concepts (Cipriano et al., 2023; Rimm-Kaufman & Merritt, 2019). Furthermore, a curriculum-integrated SEL emerged as the most effective implementation strategy across science and STEM environments, with secondary learners showing the largest gains in motivation and persistence (Madera et al., 2026). Therefore, as science educators increasingly seek to develop scientifically literate and socially responsible learners, SEL has emerged as a promising approach to supporting both academic and socio-emotional development.

In the Philippine educational context, improving science education remains a national priority. Through the K–12 Curriculum and the recently implemented MATATAG Curriculum, the Department of Education seeks to develop scientifically literate learners capable of critical thinking, problem-solving, and responsible decision-making (Department of Education [DepEd], 2023). Despite these reforms, large-scale assessments continue to reveal persistent challenges in science achievement. Results of the Programme for International Student Assessment (PISA) indicate that Filipino learners continue to perform below the Organisation for Economic Co-operation and Development (OECD) average in science literacy, highlighting the need for instructional approaches that address both academic and socio-emotional dimensions of learning (Organisation for Economic Co-operation and Development [OECD], 2023). These findings suggest that strengthening learners' social-emotional competencies may complement ongoing efforts to improve science learning outcomes.

Science 9 represents a particularly important context for examining SEL integration. Learners at this developmental stage experience substantial cognitive, emotional, and social changes that influence their learning experiences and interpersonal relationships (Santrock, 2022). At the same time, Science 9 introduces increasingly complex concepts related to biology, chemistry, physics, and environmental science that require learners to engage in critical thinking,

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collaboration, and evidence-based reasoning. Topics such as environmental stewardship, genetics, health, electricity, and ecological sustainability naturally create opportunities for discussions involving empathy, ethical responsibility, self-awareness, and responsible decision-making (DepEd, 2023). Consequently, Science 9 offers a meaningful context for intentionally integrating Social and Emotional Learning into classroom instruction.

Recent Philippine studies have likewise documented a range of challenges that hinder science teachers from delivering effective instruction. Although Social and Emotional Learning (SEL) is generally recognized as a valuable component of student development, it remains inadequately and inconsistently integrated into classroom practice. Existing evidence suggests that the implementation of SEL is constrained by the same systemic issues that affect science education more broadly, and among the most frequently reported barriers are insufficient teacher training on SEL integration, increasing curriculum demands and time constraints, limited institutional and administrative support, and inadequate instructional resources (Bautista, 2026; Inoncillo & Rodriguez, 2025; Madera et al., 2026; Penaso, 2026). These challenges collectively limit teachers' capacity to meaningfully incorporate SEL into science instruction, reducing its potential to enhance students' academic engagement, social competence, and overall learning outcomes. Anto et al. (2023) reported that secondary science teachers encountered difficulties related to inadequate laboratory resources, curriculum demands, and limited institutional support. Similarly, Besmonte (2024) identified challenges involving instructional materials, time management, assessment practices, and technology integration. Other studies have highlighted concerns about professional development opportunities, resource availability, and the organizational support systems needed for effective science teaching (Magtulis & Brunio, 2025). These challenges suggest that while innovative instructional approaches such as SEL may offer meaningful educational benefits, contextual and institutional factors may influence their successful implementation and shape teachers' instructional experiences.

Although a substantial body of literature has established the positive effects of SEL on learner outcomes, important gaps remain in understanding how SEL is implemented within specific academic disciplines. Existing studies have largely focused on evaluating SEL programs, measuring student outcomes, or examining classroom climate, with relatively limited attention given to how teachers experience the integration of SEL within content-specific instruction. Within the Philippine context, particularly in secondary science education, little research has explored the lived experiences of Science 9 teachers as they integrate SEL into their daily instructional practices. Consequently, limited evidence exists on how teachers understand SEL, how they embed social-emotional competencies in science lessons, the challenges they encounter during implementation, the strategies they use to address these challenges, and the insights they gain from the process.

Addressing this gap matters because teachers are the primary agents responsible for translating SEL principles into meaningful classroom experiences. Understanding their experiences may provide valuable insights into how SEL can be effectively integrated into science education while accounting for the realities of Philippine classrooms. Therefore, this study explores the lived experiences of Science 9 teachers as they integrate Social and Emotional Learning into their instructional practices. Specifically, it seeks to understand how teachers conceptualize SEL, how they integrate SEL competencies into science instruction, the challenges

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they encounter, the strategies they employ to address these challenges, and the insights they gain from the implementation process. The findings are expected to contribute to the growing body of literature on SEL and science education and provide practical implications for teachers, school leaders, curriculum developers, and policymakers seeking to promote holistic learner development.

Methodology

Design

This study employed a qualitative phenomenological research design to explore the lived experiences of Science 9 teachers in integrating Social and Emotional Learning (SEL) into science instruction. Phenomenology seeks to understand and describe the essence of a phenomenon as experienced by individuals who share a common lived experience. The approach enables researchers to examine how participants perceive, interpret, and make meaning of their experiences within a particular context.

The phenomenological design was appropriate because the study sought an in-depth understanding of how Science 9 teachers conceptualize SEL, integrate SEL competencies into science instruction, respond to implementation challenges, and derive insights from their experiences. Rather than measuring variables or testing hypotheses, the study focused on describing and interpreting the meanings that teachers associate with SEL integration in their instructional practices. Through participants' narratives, the study aimed to capture the essence of their experiences and provide a comprehensive understanding of the realities surrounding SEL implementation in Science 9 classrooms.

Environment

The study was conducted in the Schools Division of Oriental Mindoro under the Department of Education-MIMAROPA Region. The division consists of public secondary schools serving diverse educational settings, including rural, coastal, upland, and Indigenous Peoples (IP) communities. The participating schools were located in the municipalities of Pinamalayan, Gloria, Pola, Socorro, Victoria, Naujan, and Bongabong.

These varied educational environments provided a rich context for exploring teachers' experiences in integrating SEL into Science 9 instruction. The diversity of school settings, learner populations, and teaching conditions enabled the study to capture multiple perspectives and experiences regarding SEL integration across different educational contexts.

Participants

The participants consisted of fifteen (15) Science 9 teachers employed in public secondary schools within the Schools Division of Oriental Mindoro. Participants varied in age, sex, years of teaching experience, teaching position, and length of service in teaching Science 9. Such diversity facilitated the collection of rich and varied descriptions of the phenomenon under investigation.

The study utilized purposive sampling, supplemented by snowball sampling techniques, to identify participants who could provide relevant and information-rich accounts of SEL integration. Participants were selected based on the following criteria: (1) currently teaching Science 9 in a public secondary school; (2) possessed at least three years of science teaching experience; (3) had

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direct experience integrating SEL into Science 9 instruction; (4) were willing to participate voluntarily in the study; and (5) provided informed consent prior to participation.

The final sample size was determined through data saturation. Data collection continued until participants' responses no longer generated substantially new insights, meanings, or thematic categories related to the phenomenon being investigated.

To maintain confidentiality and anonymity, pseudonyms were assigned to all participants during transcription, analysis, and reporting.

Instrument

The primary instrument used in this study was a researcher-developed semi-structured interview guide designed to elicit rich descriptions of participants' experiences in integrating SEL into Science 9 instruction. The interview questions focused on participants' understanding of SEL, strategies used to integrate SEL into classroom practices, challenges encountered during implementation, coping and adaptation mechanisms, and lessons learned from their experiences. To encourage deeper reflection and generate detailed narratives, follow-up questions guided by the 5Ws and 1H framework were utilized during the interviews. The semi-structured format gave participants flexibility to share their insights while ensuring all research objectives were adequately addressed.

The primary data collection instrument was a researcher-developed semi-structured interview guide designed to explore participants' lived experiences in integrating SEL into Science 9 instruction.

The interview guide consisted of open-ended questions aligned with the study's objectives. Specifically, the questions focused on: (1) teachers' understanding and conceptualization of SEL; (2) strategies and practices used in integrating SEL into science instruction; (3) challenges encountered during implementation; (4) coping mechanisms and adaptation strategies; and (5) reflections, lessons learned, and insights gained from the integration process.

To encourage deeper reflection and elicit rich narrative descriptions, the researcher used probing questions guided by the 5Ws and 1H framework (what, why, when, where, who, and how) when necessary. The semi-structured format provided enough flexibility for participants to elaborate on their experiences while allowing the researcher to stay focused on the study's objectives.

Prior to data collection, the interview guide underwent expert validation by specialists in qualitative research and science education to ensure clarity, appropriateness, and alignment with the study objectives.

Data Collection Procedure

Upon securing the necessary approvals from the Schools Division Office and participating school administrators, participant recruitment commenced. Eligible participants were informed about the purpose of the study, the nature of their involvement, and their rights as research participants. Written informed consent was obtained prior to data collection.

Data were gathered through individual semi-structured in-depth interviews utilizing a storytelling approach. This approach encouraged participants to narrate and reflect on their experiences integrating SEL into Science 9 instruction in their own words.

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Interviews were conducted at mutually agreed-upon venues and schedules and lasted approximately 45 to 60 minutes. With participants' permission, all interviews were audio-recorded to ensure the completeness and accuracy of the data collected. Field notes were also maintained to document observations, contextual information, and emerging reflections relevant to the research process.

Following each interview, audio recordings were transcribed verbatim. Participants were subsequently provided with copies or summaries of their transcripts to verify the accuracy of the recorded information through member checking. This process helped ensure the authenticity and credibility of the participants' accounts.

Data Analysis

The researchers used Colaizzi's (1978) phenomenological method to analyze the interview data. After data collection, all interview recordings were transcribed verbatim and carefully reviewed to ensure accuracy.

The researchers immersed themselves in the data by repeatedly reading and rereading the transcripts to gain a comprehensive understanding of the participants' experiences. The researchers then identified and extracted significant statements directly related to the integration of Social and Emotional Learning (SEL) in Science 9 instruction. From these significant statements, meanings were formulated and interpreted while remaining faithful to the participants' descriptions of their experiences. The researcher then organized the formulated meanings into clusters of themes that reflected common patterns and shared understandings across participants' narratives. These thematic clusters served as the basis for developing exhaustive descriptions of the phenomenon, allowing the researchers to capture the essence of teachers' lived experiences in integrating SEL into science instruction. The themes and descriptions were continuously reviewed and refined to ensure their alignment with the participants' accounts. To enhance the credibility and trustworthiness of the findings, the researchers conducted member checking by returning the interpreted descriptions and thematic findings to selected participants for validation and confirmation.

Through this systematic analytical process, the study generated rich thematic insights that accurately represented the meanings participants attached to their experiences of integrating SEL within Science 9 classrooms.

Ethical Considerations

The study strictly adhered to established ethical principles governing qualitative research. Prior to participation, all participants received an informed consent form explaining the purpose of the study, research procedures, potential benefits and risks, confidentiality measures, and their right to withdraw from the study at any stage without penalty. Participation was entirely voluntary, and no form of coercion or undue influence was employed.

To protect participants' privacy and confidentiality, pseudonyms replaced all identifying information in transcripts, field notes, and reports. Audio recordings, transcripts, and research documents were stored in password-protected files accessible only to the researcher. All collected data were used solely for academic and research purposes.

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Administrative approval and ethical clearance were secured from the appropriate authorities before data collection commenced.

To ensure trustworthiness, the study adopted the criteria of credibility, transferability, dependability, and confirmability.

Credibility was established through prolonged engagement with participants, member checking, and careful verification of emerging interpretations.

Transferability was enhanced through the provision of thick descriptions of the research context, participants, and findings, enabling readers to determine the applicability of the results to similar settings.

Dependability was maintained through detailed documentation of the research process, including data collection procedures, analytical decisions, and theme-development processes.

Confirmability was achieved through the maintenance of an audit trail, reflexive journaling, and continuous self-reflection to minimize researcher bias and ensure that findings emerged from participants' experiences rather than researcher assumptions.

By adhering to these ethical and trustworthiness standards, the study sought to ensure the integrity, rigor, and credibility of its findings.

Results and Discussion

Theme 1: Understanding and Valuing Social and Emotional Learning

The findings revealed that Science 9 teachers possessed a comprehensive understanding of Social and Emotional Learning (SEL) and regarded it as a vital component of effective science instruction. Participants viewed SEL as an approach that supports learners' emotional, social, and academic development by helping them regulate emotions, establish positive relationships, demonstrate empathy, and make responsible decisions. Rather than regarding SEL as an additional instructional requirement, teachers perceived it as an essential element of holistic education that complements the development of scientific knowledge and skills.

Analysis of the participants' narratives generated three subthemes: (1) SEL as a Foundation for Holistic Learner Development, (2) Promoting Emotional Awareness and Self-Regulation, and (3) Building Positive Relationships and Social Skills.

Subtheme 1: SEL as a Foundation for Holistic Learner Development

Participants perceived SEL as an educational approach that extends beyond academic instruction and contributes to learners' overall development. They emphasized that science education should not only focus on acquiring scientific concepts but also foster the emotional and social competencies needed to navigate everyday life and future challenges.

One participant shared: *"Children should not only learn scientific knowledge. It is also important for them to learn how to interact with others and face the challenges in their lives."* Another participant explained: *"When SEL is integrated into Science teaching, students' learning becomes more responsible and meaningful."*

These accounts suggest that teachers view SEL as a way to develop well-rounded learners who can apply academic knowledge alongside life skills. Participants emphasized that meaningful science learning involves preparing learners not only for academic success but also for responsible citizenship and effective participation in society. The findings indicate that teachers understand

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education as a holistic process that integrates cognitive, emotional, and social dimensions of learning.

This perspective aligns with the CASEL (2023) framework, which underscores the interconnected nature of academic, social, and emotional development. The findings also support Mahoney et al. (2021), who argued that SEL contributes to learners' overall success by promoting competencies that support both academic achievement and personal well-being. Similarly, Jones and Kahn (2017) emphasized that effective education should cultivate social-emotional competencies alongside academic skills to prepare learners for lifelong success.

The findings further imply that Science 9 teachers view SEL as an educational philosophy rather than a discrete intervention. Their understanding highlights the importance of integrating emotional and social dimensions into science instruction to foster learner development that extends beyond classroom performance.

Subtheme 2: Promoting Emotional Awareness and Self-Regulation

Teachers consistently identified emotional awareness and self-regulation as essential outcomes of SEL integration. Participants noted that science learning often involves situations that may trigger frustration, anxiety, uncertainty, or disappointment, particularly during laboratory activities, experiments, and classroom presentations. According to the participants, SEL helps learners recognize these emotions and develop constructive responses to challenges.

One participant stated: *"When an experiment does not succeed, students learn to accept mistakes and try again instead of giving up."* Another participant remarked: *"I have noticed that students become calmer and better prepared when they know how to manage their emotions."*

These statements suggest that teachers view emotional regulation as an important factor in sustaining learner engagement and perseverance. Participants observed that learners who develop greater self-awareness are better able to maintain focus, regulate emotional responses, and overcome setbacks encountered during scientific inquiry. The findings indicate that SEL supports the development of resilience, persistence, and adaptive coping skills essential for meaningful learning experiences.

The findings align with Cipriano et al. (2023), who found that SEL interventions strengthen students' emotional regulation and ability to cope with academic stressors. They also support the conclusions of Taylor, Oberle, Durlak, and Weissberg (2017), whose meta-analysis demonstrated that SEL contributes to positive long-term outcomes in emotional well-being and behavioral adjustment.

From a science education perspective, the findings suggest that emotional regulation may play a critical role in learners' willingness to engage in scientific inquiry. Science learning often requires risk-taking, experimentation, and accepting failure as part of the learning process. As a result, learners who possess strong self-regulatory skills may be better equipped to persist in challenging learning situations and achieve deeper conceptual understanding.

Subtheme 3: Building Positive Relationships and Social Skills

Participants likewise emphasized SEL's role in promoting positive interpersonal relationships and social competence among learners. Teachers observed that science instruction

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frequently requires collaborative learning experiences that depend on effective communication, cooperation, and mutual respect.

One participant shared: *"Through group activities, students learn to listen to the opinions of others and respect different perspectives."* Another participant explained: *"Students develop better relationships with one another when they are taught to be understanding and considerate toward their classmates."*

These responses indicate that teachers see SEL as a way to foster constructive social interactions and strengthen classroom relationships. Participants noted that learners who develop empathy, respect, and communication skills become better able to work collaboratively and contribute positively to group activities. The findings further suggest that positive relationships create supportive learning environments that facilitate meaningful academic engagement.

The results align with the CASEL (2023) framework, which identifies relationship skills and social awareness as core components of social-emotional competence. Likewise, Jennings and Greenberg (2009) emphasized that supportive classroom relationships contribute significantly to student engagement, classroom climate, and learning outcomes. The findings also support previous research indicating that SEL promotes cooperation, empathy, and positive peer interactions, ultimately creating classroom environments that support both academic and social growth.

An important implication is that science classrooms serve as social learning spaces where students develop not only scientific knowledge but also interpersonal competencies. By promoting collaboration and mutual respect, SEL may strengthen learners' ability to participate effectively in scientific discourse and collective problem-solving activities.

Overall, Theme 1 shows that Science 9 teachers view SEL as an indispensable part of holistic science education. Participants viewed SEL as a foundation for learner development, a way to cultivate emotional awareness and self-regulation, and a means of strengthening social relationships and collaborative skills. These findings suggest that teachers understand scientific literacy and social-emotional competence as complementary rather than separate educational goals. Consistent with contemporary SEL literature, participants' experiences indicate that effective science instruction nurtures learners who are not only academically capable but also emotionally resilient, socially responsible, and prepared to navigate complex personal and societal challenges. Through this perspective, SEL emerges not simply as an instructional strategy but as a transformative approach that enhances the overall quality and purpose of science education.

Theme 2: Integrating SEL Through Intentional Classroom Practices

The findings revealed that Science 9 teachers intentionally incorporated Social and Emotional Learning (SEL) into their classroom instruction through a variety of teaching strategies designed to promote both scientific understanding and socio-emotional development. Participants described using collaborative learning activities, reflective exercises, real-world applications, and guided classroom discussions to foster empathy, emotional expression, critical thinking, and responsible decision-making among learners. Teachers recognized that SEL integration does not require separate lessons but can be embedded within existing science activities and daily classroom interactions.

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Analysis of the participants' narratives generated three subthemes: (1) Collaborative and Experiential Learning Activities, (2) Reflective and Discussion-Based Strategies, and (3) Embedding SEL in Science Content and Classroom Routines.

Subtheme 1: Collaborative and Experiential Learning Activities

Participants emphasized the importance of collaborative and hands-on learning experiences as effective avenues for integrating SEL into Science 9 instruction. Laboratory activities, group investigations, and project-based tasks were commonly utilized to develop teamwork, communication, problem-solving, and interpersonal skills among learners.

One participant shared: *"When we conduct group experiments, students learn to share ideas, listen to one another, and work together to complete the task."* Another participant explained: *"Through investigation activities, students learn not only scientific concepts but also how to work with others and solve problems as a group."*

The findings suggest that collaborative and experiential learning activities serve as effective pathways for integrating SEL competencies into science instruction. Through laboratory investigations, group projects, and inquiry-based activities, learners are provided opportunities to develop teamwork, communication skills, empathy, and collective problem-solving while constructing scientific understanding.

These findings align with social constructivist views that learning occurs through interaction, collaboration, and shared meaning-making. Participants recognized that scientific inquiry often requires students to negotiate ideas, resolve disagreements, and work toward common goals. Consequently, collaborative science activities became opportunities for strengthening both scientific competencies and interpersonal skills.

The findings support Rimm-Kaufman and Merritt (2019), who found that integrating SEL into science instruction enhances collaborative discourse and student engagement. Similarly, Cipriano et al. (2023) emphasized that collaborative learning environments provide meaningful contexts for developing social awareness, relationship skills, and responsible decision-making.

An important implication is that science educators may not need separate SEL lessons to promote socio-emotional development. Instead, teachers can intentionally structure existing instructional activities to nurture collaboration, communication, and empathy while achieving science learning outcomes.

Subtheme 2: Reflective and Discussion-Based Strategies

Participants also reported utilizing reflection and classroom discussions to promote emotional awareness, empathy, and critical thinking. Teachers encouraged learners to share their thoughts, experiences, feelings, and perspectives related to science topics and classroom activities.

One participant stated: *"After the experiment, I ask them to write reflections about what they learned and what they felt while doing the activity."* Another participant remarked: *"During discussions, I encourage them to share their opinions and respect the viewpoints of their classmates."*

The findings indicate that reflective activities and guided discussions support learners' emotional awareness, perspective-taking, and critical thinking. By encouraging students to reflect

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on their experiences, feelings, and learning processes, teachers created opportunities for learners to connect scientific experiences with personal growth and emotional understanding.

Participants observed that reflection helps learners process successes, failures, challenges, and interpersonal interactions encountered during scientific investigations. This suggests that reflection serves not only as a cognitive exercise but also as a mechanism for socio-emotional growth. Through reflection, learners become more aware of their emotions, behaviors, and responses to challenging situations.

The findings are consistent with the work of Schonert-Reichl (2017), who emphasized that reflective dialogue supports emotional intelligence, self-awareness, and responsible decision-making. Likewise, CASEL (2023) identifies self-awareness and self-management as critical competencies that are strengthened when learners regularly engage in reflective practices.

From a pedagogical perspective, the findings suggest that meaningful discussion and reflection can transform science classrooms into spaces where learners are encouraged to examine not only scientific concepts but also their values, emotions, and social responsibilities.

Subtheme 3: Embedding SEL in Science Content and Classroom Routines

Participants further explained that SEL was integrated not only through instructional activities but also through science content and everyday classroom routines. Teachers intentionally connected scientific concepts to real-life situations that encouraged learners to consider ethical responsibilities, environmental stewardship, empathy, and personal decision-making.

One participant shared: *"When discussing environmental issues, I encourage students to think about how their decisions can affect other people and the environment."* Another participant explained: *"It has become part of our classroom routine to give students an opportunity to share their thoughts and feelings before the lesson begins."*

The findings show that effective SEL integration goes beyond instructional strategies and includes intentionally incorporating social-emotional competencies into science content and classroom routines. Participants connected scientific topics with ethical considerations, environmental responsibility, empathy, and decision-making while simultaneously establishing routines that promoted emotional expression, trust, and inclusion.

This finding suggests that teachers view SEL as an integral aspect of classroom culture rather than a stand-alone instructional activity. Participants deliberately created opportunities for learners to develop social awareness and ethical responsibility through discussions of environmental issues, health concerns, and real-world scientific applications.

The findings reinforce the perspective that SEL is most sustainable when embedded within everyday teaching practices and learning environments. This observation aligns with the CASEL (2023) framework and supports research indicating that classroom routines significantly influence learners' sense of belonging, engagement, and emotional safety (Mahoney et al., 2021).

Overall, Theme 2 demonstrates that Science 9 teachers intentionally integrated SEL into science instruction through collaborative learning experiences, reflective practices, and contextualized classroom routines. The findings suggest that effective SEL integration occurs when socio-emotional learning opportunities are embedded within authentic educational experiences. Such practices enable learners to develop scientific literacy alongside emotional

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competence, social responsibility, and critical thinking, reinforcing the complementary nature of academic and socio-emotional development.

Theme 3: Addressing Challenges Through Adaptation and Support

The findings revealed that while Science 9 teachers recognized the value of Social and Emotional Learning (SEL), they encountered various challenges in integrating it into classroom instruction. Participants identified time constraints, extensive curriculum requirements, limited instructional resources, and diverse learner needs as significant barriers to effective implementation. Despite these difficulties, teachers demonstrated adaptability by modifying instructional strategies, seeking professional support, and utilizing available school resources.

Analysis of the participants' experiences generated three subthemes: (1) Curriculum and Time Constraints, (2) Diverse Learner Needs and Classroom Realities, and (3) Professional and Institutional Support Mechanisms.

Subtheme 1: Curriculum and Time Constraints

Participants consistently identified the limited time available for instruction and the demands of the Science curriculum as major obstacles to SEL integration. Teachers explained that balancing content coverage with the intentional development of social-emotional competencies often proved difficult given the prescribed learning competencies and assessment requirements.

One participant shared: *"Sometimes there is not enough time to simultaneously teach Science concepts and develop students' social and emotional skills."* Another participant explained: *"Because of the numerous competencies that must be covered, it is difficult for us to allocate more time for SEL activities."*

The findings suggest that curriculum requirements and limited instructional time remain significant barriers to SEL integration. Participants reported difficulties balancing content mastery, competency requirements, assessment demands, and the intentional development of social-emotional competencies.

This finding reflects an ongoing challenge within educational systems where academic achievement often receives greater emphasis than socio-emotional development. Teachers expressed concerns regarding instructional pacing and curriculum expectations, suggesting that the integration of SEL requires additional flexibility in curriculum implementation.

The findings support those of Besmonte (2024) and Anto et al. (2023), who identified curriculum overload and instructional time limitations as persistent concerns among science educators. The results may also indicate that institutional structures need to provide greater support for integrating holistic educational approaches within existing curricular frameworks.

Subtheme 2: Diverse Learner Needs and Classroom Realities

Participants also emphasized the challenges associated with addressing diverse learner needs and managing varying classroom realities. Teachers reported differences in students' academic abilities, emotional maturity, learning preferences, and socio-economic backgrounds, all of which influenced how effectively SEL was integrated.

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One participant stated: *"Students have different needs. Some readily participate, while others have difficulty expressing their feelings."* Another participant remarked: *"Some students face personal or family problems that affect their learning and interaction in class."*

The findings reveal that learner diversity significantly influences SEL implementation. Participants reported varying academic abilities, emotional readiness, personal experiences, and socio-economic circumstances among students, requiring teachers to continually adapt their instructional approaches.

These findings suggest that effective SEL integration requires flexibility, responsiveness, and sensitivity to learners' unique circumstances. Teachers recognized that students experience different emotional and academic challenges, underscoring the need for differentiated support and inclusive teaching practices.

The findings are consistent with Jones and Kahn (2017), who emphasized that effective SEL implementation requires attention to learners' developmental, social, and cultural contexts. The results further highlight the important role played by teachers in fostering learning environments that accommodate diverse needs while promoting equity and inclusion.

Subtheme 3: Professional and Institutional Support Mechanisms

Participants highlighted the importance of professional collaboration and institutional support in facilitating SEL integration. Teachers emphasized that support from school administrators, colleagues, and professional development opportunities helped them address challenges and improve their instructional practices.

One participant shared: *"Collaboration with fellow teachers is very helpful because we can exchange ideas and strategies about SEL."* Another participant explained: *"SEL implementation becomes more effective when there is support from school heads and professional training opportunities."*

The findings indicate that successful SEL integration extends beyond individual teacher initiative and depends substantially on professional and institutional support. Participants consistently emphasized the value of administrative encouragement, professional development programs, and collaboration with colleagues.

The results suggest that school-wide commitment to SEL strengthens teachers' confidence, competence, and capacity to sustain implementation efforts. Teachers viewed support systems as critical resources that helped them overcome instructional challenges and refine their approaches.

The findings align with Paul (2022) and Schonert-Reichl (2017), who highlighted the importance of supportive leadership and professional learning in promoting successful SEL implementation, leading to a positive teacher well-being, including job satisfaction, reduce burnout, anxiety, stress, and positive relationships (Dou et al., 2026). Similarly, Jennings and Greenberg (2009) suggest that supportive school environments enhance teacher effectiveness and contribute to positive educational outcomes.

Overall, Theme 3 highlights the realities and challenges Science 9 teachers face in integrating Social and Emotional Learning into classroom instruction. While curriculum demands, time limitations, and diverse learner needs created implementation barriers, participants demonstrated resilience and adaptability through instructional adjustments, collaboration, and continuous learning. The findings further reveal that effective SEL integration depends not only

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on individual teacher efforts but also on sustained professional and institutional support. These insights underscore the importance of providing adequate resources, professional development opportunities, and supportive school structures to ensure successful SEL implementation in Science 9 classrooms.

Theme 4: Strengthening Teaching Practices Through Resilience and Reflection

The findings revealed that successfully integrating Social and Emotional Learning (SEL) in Science 9 instruction required teachers to demonstrate resilience, adaptability, and a commitment to continuous improvement. Participants emphasized that integrating SEL involved more than implementing specific strategies; it required patience, flexibility, self-reflection, and a willingness to learn from both successes and challenges. Teachers reported that reflecting on their experiences and collaborating with colleagues helped them strengthen their instructional practices and better respond to learners' diverse needs.

Analysis of participants' narratives generated three subthemes: (1) Teacher Resilience and Adaptability, (2) Reflective Practice and Continuous Learning, and (3) Collegial Collaboration and Knowledge Sharing.

Subtheme 1: Teacher Resilience and Adaptability

Participants emphasized that resilience and adaptability were essential to sustaining SEL integration in Science 9 instruction. Teachers acknowledged that challenges such as diverse learner needs, limited resources, and classroom management issues required them to remain flexible and responsive in their teaching approaches.

One participant shared: *"It is necessary to be patient and willing to adjust because every student has different needs."* Another participant explained: *"There are times when a strategy is not effective, so we need to find alternative ways to address the needs of the class."*

The findings suggest that teacher resilience serves as a critical factor in sustaining SEL integration despite instructional challenges and contextual constraints. Participants continuously modified strategies, adjusted instructional approaches, and responded to changing learner needs.

These findings indicate that effective SEL implementation requires teachers to remain flexible and responsive rather than relying solely on predetermined instructional plans. Participants viewed resilience as the ability to adapt while maintaining commitment to learners' holistic development.

The findings align with research highlighting teacher resilience as an important determinant of instructional effectiveness and educational innovation (Jennings & Greenberg, 2009). In fact, Chen and Lee (2022) indicated that teacher resilience can boost positive job resources, promoting their well-being and performance in a specific societal and educational context. Teachers' adaptability enabled them to sustain SEL practices despite classroom complexities and implementation obstacles.

Subtheme 2: Reflective Practice and Continuous Learning

Participants highlighted the importance of reflection and professional learning in improving their ability to integrate SEL into science instruction. Teachers described regularly

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evaluating their teaching practices and using learner feedback and classroom experiences as opportunities for growth.

One participant stated: *"After every lesson, I reflect on whether my approach was effective and what aspects I can further improve."* Another participant remarked: *"I continue learning through seminars, reading articles, and exploring new approaches related to SEL."*

The findings underscore the importance of reflective practice as a mechanism for professional growth and instructional improvement. Participants regularly reflected on classroom experiences to evaluate the effectiveness of their SEL strategies and identify areas for development.

This suggests that reflection allows teachers to become more intentional and responsive practitioners. Through self-assessment and professional learning, teachers refined their understanding of SEL and improved their ability to address evolving learner needs.

The findings support literature emphasizing reflective teaching as a cornerstone of professional practice and lifelong learning. Reflection enabled participants to transform instructional experiences into opportunities for continuous growth and improved practice.

Subtheme 3: Collegial Collaboration and Knowledge Sharing

Participants further emphasized the value of collaboration with colleagues in enhancing their understanding and implementation of SEL. Teachers reported that sharing experiences, strategies, and best practices with fellow educators contributed significantly to their professional development.

One participant shared: *"I learn a great deal when I exchange ideas with other teachers regarding their experiences with SEL."* Another participant explained: *"Collaboration with colleagues provides new strategies that we can apply in our classes."*

The findings demonstrate that collaboration among educators contributes significantly to effective SEL integration. Participants described professional interactions as sources of support, innovation, and practical knowledge.

These experiences suggest that knowledge-sharing fosters collective problem-solving and professional growth. Teachers benefited from exchanging strategies, discussing classroom experiences, and learning from colleagues who faced similar challenges.

The findings support research on professional learning communities, which emphasizes collaboration as a catalyst for instructional improvement and educational innovation (DuFour & Fullan, 2013). Also, teacher collaboration is consistently identified as an essential condition for school improvement and innovation, but the evidence is equally clear that not all collaboration is equal—its effects depend on the depth of engagement, shared values, and the leadership and structures that support it (Crichesky & Murillo, 2017; Wullschleger et al., 2022)

Overall, Theme 4 highlights the importance of resilience, reflection, and collaboration in strengthening teachers' capacity to integrate SEL effectively. Participants' experiences suggest that sustained implementation depends not only on instructional knowledge but also on professional growth, adaptability, and supportive professional relationships.

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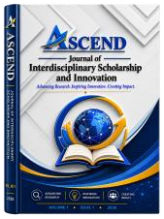

Theme 5: Enhancing Learner Engagement and Development

The findings revealed that teachers perceived the integration of Social and Emotional Learning (SEL) as positively impacting learner engagement, classroom participation, interpersonal relationships, and overall well-being. Participants observed noticeable improvements in students' motivation, responsibility, confidence, and sense of belonging within the classroom. Teachers reported that when learners felt emotionally supported and valued, they became more willing to participate in class activities, collaborate with peers, and engage in meaningful learning experiences.

Analysis of the participants' narratives generated three subthemes: (1) Improved Learner Engagement and Participation, (2) Positive Behavioral and Social Development, and (3) Increased Confidence and Sense of Belonging.

Subtheme 1: Improved Learner Engagement and Participation

Participants consistently reported that SEL integration increased learners' interest and participation in Science 9 activities. Teachers observed that students became more attentive, involved, and willing to contribute during discussions, laboratory activities, and collaborative tasks.

One participant shared: *"Students become more active in class when they feel that their opinions and ideas are valued."* Another participant explained: *"I have observed that students are more willing to participate in activities when there are positive relationships within the classroom."*

The findings indicate that SEL promotes increased learner engagement by creating emotionally supportive and inclusive learning environments. Participants reported that students became more willing to participate in discussions, ask questions, and engage in collaborative activities when they felt respected and valued.

This suggests that emotional safety serves as an important foundation for meaningful participation. Learners who perceive classrooms as supportive environments may be more willing to take academic risks and contribute actively to learning activities.

These findings support Durlak et al. (2011) and Cipriano et al. (2023), who found that SEL significantly enhances student engagement, academic participation, and educational outcomes.

Subtheme 2: Positive Behavioral and Social Development

Teachers also reported that SEL integration improved student behavior and social interactions. Participants observed that learners demonstrated greater empathy, cooperation, respect, and responsibility in their dealings with classmates and teachers.

One participant stated: *"Students become more respectful and sensitive to the feelings of their classmates when we regularly integrate SEL into our lessons."* Another participant remarked: *"I noticed improvements in how they interact with one another, especially during group activities and collaborative tasks."*

The findings show that SEL improves social interactions and positive behavioral outcomes. Teachers observed increased empathy, cooperation, responsibility, and respect among students following SEL integration.

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These outcomes suggest that SEL fosters social awareness and prosocial behavior by helping learners better understand themselves and others. Participants perceived that improved interpersonal relationships contributed to more supportive and collaborative classroom environments.

The findings are consistent with CASEL (2023) and Taylor et al. (2017), who reported long-term improvements in social behavior, relationship skills, and emotional well-being among students exposed to SEL interventions.

Subtheme 3: Increased Confidence and Sense of Belonging

Participants further observed that SEL helped learners develop greater self-confidence and a stronger sense of belonging within the classroom community. Teachers described how emotionally supportive learning environments encouraged students to express their ideas, take academic risks, and participate in classroom discussions without fear of judgment.

One participant shared: *"Students become more confident in answering questions and sharing their ideas when they know they will not be judged."* Another participant explained: *"Students feel that they belong in the classroom, so they become more open to participating and interacting with others."*

The findings reveal that SEL contributes to learners' confidence and sense of belonging by creating environments characterized by psychological safety, acceptance, and support. Participants observed that students became more confident in expressing ideas, participating in activities, and interacting with peers.

These findings suggest that a strong sense of belonging encourages learners to engage more actively in academic and social experiences. Students who feel accepted and valued may be more likely to develop positive attitudes toward learning and school participation.

The findings align with Mahoney et al. (2021), who found that SEL promotes self-confidence, school connectedness, and student well-being through supportive educational experiences.

Overall, Theme 5 demonstrates the transformative influence of SEL on learner engagement and development. Participants observed improvements in participation, social behavior, confidence, and belongingness, suggesting that SEL contributes to both academic and socio-emotional outcomes. The findings reinforce the growing body of evidence that effective SEL integration promotes holistic learner development and creates classroom environments where students can thrive academically, emotionally, and socially.

Synthesis of the Discussion

The findings revealed that Science 9 teachers recognize Social and Emotional Learning (SEL) as an essential component of effective science instruction. Through intentional classroom practices, teachers integrated SEL to promote learners' self-awareness, emotional regulation, collaboration, and responsible decision-making, reinforcing the view that meaningful learning extends beyond academic achievement. These findings support existing literature emphasizing the role of SEL in fostering holistic learner development and positive classroom environments.

Despite recognizing its importance, teachers encountered challenges related to curriculum demands, limited instructional time, and diverse learner needs. Nevertheless, participants

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demonstrated resilience by adapting instructional strategies, engaging in reflective practice, and seeking support from colleagues and school leaders. These adaptive practices highlight teachers' commitment to sustaining SEL integration even within constrained educational contexts.

Furthermore, the study showed that SEL integration contributed to improved learner engagement, stronger interpersonal relationships, and increased classroom participation. Teachers observed positive changes in students' confidence, behavior, and academic involvement, suggesting that SEL enhances both social-emotional competencies and learning outcomes. Overall, the findings underscore the importance of ongoing professional development, collaborative support, and institutional commitment to strengthen SEL integration in science education.

Conclusion

The lived experiences of Science 9 teachers demonstrate that the successful integration of Social and Emotional Learning (SEL) is sustained through intentional instructional practices, teacher resilience, and a commitment to holistic learner development. Despite curriculum demands, time constraints, and diverse classroom needs, teachers continually adapt their strategies to foster students' social, emotional, and academic growth. Their experiences highlight the importance of reflective practice, collaboration, and flexibility in creating supportive learning environments that promote meaningful engagement and positive learner outcomes.

More importantly, the findings address a significant gap in the literature by showing how Science 9 teachers in the Philippine secondary school context understand, implement, and sustain SEL within science instruction. The study revealed the specific classroom practices teachers employ, the challenges they encounter, the strategies they use to overcome these barriers, and the lessons they derive from the integration process. These findings contribute to the limited body of local research examining SEL within a specific content area and offer a deeper understanding of teachers' lived experiences in integrating socio-emotional competencies into Science 9 instruction.

However, long-term, effective integration of SEL in science education requires stronger institutional support, ongoing professional development, adequate resources, and school-wide initiatives that empower teachers to address both learners' academic and socio-emotional needs. Strengthening these support systems will help ensure the sustainability of SEL implementation and further promote holistic learner development in science education.

This study explored the lived experiences of Science 9 teachers in integrating Social and Emotional Learning (SEL) into classroom instruction. The findings revealed that teachers perceive SEL as an essential component of science education that promotes holistic learner development by strengthening emotional regulation, social skills, collaboration, responsible decision-making, and meaningful learner engagement. Teachers intentionally integrated SEL through collaborative and experiential learning activities, reflective and discussion-based strategies, and the incorporation of socio-emotional competencies into science content and classroom routines. Despite recognizing its value, participants encountered challenges related to curriculum demands, limited instructional time, diverse learner needs, inadequate resources, and the need for stronger institutional support. Nevertheless, teachers demonstrated resilience, adaptability, reflective practice, and professional collaboration in addressing these challenges and sustaining SEL

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integration. Participants further observed that SEL positively influenced learner participation, behavior, confidence, interpersonal relationships, and sense of belonging within the classroom.

The study therefore concludes that the successful integration of SEL in Science 9 instruction is not solely dependent on instructional strategies but is deeply influenced by teachers' commitment to holistic education, their capacity for reflection and adaptation, and the presence of supportive professional and institutional environments. The findings suggest that SEL functions as a transformative educational approach that enriches science learning by simultaneously supporting students' academic development and socio-emotional growth. Effective science instruction extends beyond content mastery and should include opportunities for learners to develop emotional awareness, responsible behavior, empathy, collaboration, and resilience.

Furthermore, the study contributes to the limited body of Philippine literature on discipline-specific SEL implementation by providing an in-depth understanding of how Science 9 teachers conceptualize, implement, and sustain SEL within their instructional practices. The findings address an important gap in the literature by highlighting the realities, challenges, adaptive practices, and professional insights of teachers who serve as the primary implementers of SEL in science classrooms.

However, the findings should be interpreted within the context of several limitations. The study was limited to fifteen Science 9 teachers from selected public secondary schools in the Schools Division of Oriental Mindoro; therefore, the findings may not fully represent the experiences of science teachers in other regions, school types, or educational settings. Additionally, the study focused exclusively on teachers' perspectives and did not include the experiences of learners, school leaders, parents, or other stakeholders who may also influence SEL implementation. As a qualitative phenomenological inquiry, the study aimed to provide depth of understanding rather than broad generalization of findings.

Overall, the study underscores the importance of strengthening institutional support, professional development opportunities, collaborative learning communities, and school-wide SEL initiatives to ensure the sustainable integration of Social and Emotional Learning in science education. By fostering supportive learning environments that address both academic and socio-emotional needs, schools may better prepare learners to become scientifically literate, emotionally resilient, socially responsible, and actively engaged members of society.

Recommendations

Based on the findings of the study, the following recommendations are proposed to strengthen the integration of Social and Emotional Learning (SEL) in Science 9 instruction and address the challenges experienced by teachers.

For School Administrators and Instructional Leaders. Since participants identified limited training opportunities, curriculum demands, and insufficient institutional support as barriers to SEL integration, school heads and instructional leaders should establish sustained professional development programs focused specifically on SEL implementation in science education. Learning Action Cell (LAC) sessions, mentoring programs, classroom observations, and peer coaching initiatives may be designed to help Science teachers develop practical strategies for integrating socio-emotional competencies within science lessons. Emphasis should be placed

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on classroom-based applications of SEL rather than solely on theoretical discussions to ensure immediate relevance and applicability to teachers' instructional contexts. Furthermore, school administrators should incorporate SEL into school improvement initiatives, instructional supervision programs, and teacher development plans. Providing structured support systems will help teachers sustain SEL implementation while balancing curriculum requirements and diverse learner needs.

For Science Teachers. The findings revealed that collaborative activities, reflective exercises, classroom discussions, and real-world applications were effective approaches for integrating SEL. Science teachers are therefore encouraged to continue embedding socio-emotional competencies within existing science lessons and classroom routines rather than treating SEL as a separate instructional component. Providing opportunities for learners to engage in group investigations, reflective writing, collaborative problem-solving, and discussions on ethical and environmental issues may further promote emotional awareness, empathy, teamwork, and responsible decision-making. Teachers are likewise encouraged to regularly engage in reflective practice by evaluating their instructional strategies, examining learner responses, and identifying opportunities for continuous improvement. Maintaining reflective journals and participating in peer collaboration activities may support professional growth and strengthen SEL implementation.

For Schools and Educational Stakeholders. Given the importance of professional and institutional support identified by participants, schools should establish professional learning communities (PLCs) that allow Science teachers to share successful practices, discuss implementation challenges, and collaboratively develop SEL-integrated learning activities. Such collaborative structures may strengthen teachers' confidence and competence in addressing socio-emotional learning needs within science classrooms. Schools may also strengthen partnerships with parents, guidance personnel, and community stakeholders to support learners' socio-emotional development beyond the classroom. Since participants emphasized the influence of learners' personal and social circumstances on SEL implementation, coordinated support systems may contribute to more responsive and holistic educational experiences.

For Curriculum Developers and Policymakers. Considering participants' concerns regarding curriculum demands and limited instructional time, curriculum developers and educational policymakers may explore opportunities to explicitly integrate SEL competencies within Science learning competencies, instructional guides, and teaching resources. Providing clearer curriculum guidance and SEL-aligned teaching materials may help teachers incorporate socio-emotional development more systematically without compromising content coverage. Policies that recognize and support the integration of social-emotional competencies within content-area instruction may likewise encourage wider adoption of SEL practices across schools and grade levels.

For Future Researchers. Since this study focused on the lived experiences of Science 9 teachers in selected public secondary schools, future researchers may examine the perspectives of learners, school leaders, parents, and guidance counselors to obtain a more comprehensive understanding of SEL implementation. Comparative studies involving different learning areas,

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school contexts, and educational levels may also further enrich understanding of discipline-specific SEL integration. Additionally, future studies may employ mixed-methods or longitudinal designs to examine how sustained SEL integration influences learner engagement, science achievement, social behavior, emotional well-being, classroom participation, and school connectedness over time. Investigations focusing on specific SEL competencies, such as self-management, emotional regulation, empathy, or relationship-building, may likewise provide deeper insights into how these competencies can be effectively developed through science education.

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