



This paper was presented at the 2023 National Conference on Research in Teacher Education held at the UP College of Education from October 26-28, 2023.

Implementation of a School-Based Mindfulness Program and its Effects on Emotion Regulation and Empathy of Elementary School Students

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ABSTRACT

Introduction

This paper documents the implementation of a school-based mindfulness program and investigates its effects on emotion regulation and empathy among elementary school students. The ability to regulate emotions and empathize with others is crucial for a child's psychological and social development. As mindfulness is closely linked to both skills, a school-based program is a viable option for enhancing children's emotion regulation and empathy.

Methodology

A concurrent mixed-methods research was conducted to evaluate a 10-week mindfulness program that was integrated into the regular classes of 201 Grades 3 and 4 students. Questionnaires for emotion regulation and empathy were administered, with scores analyzed through a dependent-samples t-test. Concurrently, focus group discussions with students and teachers were conducted to complement the quantitative findings.

Results

Findings show that emotion regulation and empathy of the students significantly improved after the mindfulness program. Focus group discussions revealed anecdotes of improvement in emotion regulation, though empathy anecdotes

were lacking. Challenges and recommendations for the improvement of the program were also discussed.

Conclusion

This research highlights the potential of a teacher-led mindfulness program to advance emotion regulation and empathy in students. Additionally, implications for the program's relevance in the context of new normal schooling are discussed.

Keywords: *mindfulness, emotion regulation, empathy, school-based program*

Introduction

In recent decades, the ability to self-regulate emotions has received increasing attention as a key aspect in a child's healthy psychological and social development (Gullone & Taffe, 2012). Moreover, empathy has emerged as another agent that promotes prosocial behaviors and those that strengthen cooperation and cohesion in groups like a class (Rieffe et al., 2010). Based on insights shared by fellow teachers with whom the researchers have interacted in their capacity as practicing teachers themselves, there is a perception that today's students struggle more with managing their emotions and understanding others' feelings than previous generations. Out-of-control emotions and an inability to empathize with others frequently lead to social disputes in the classroom. Thus, elementary school teachers, particularly homeroom teachers, have taken on the responsibility of teaching children how to manage their emotions and relate to how others are feeling.

This generation of children's struggle to regulate emotions may be attributed to the heightened stress that they are subject to (Rempel, 2012). In this digital age, there are more mental and emotional pressures, and today's children, as digital natives, are exposed to them. In 2015, the World Health Organization reported that among Filipino children aged 5 to 15 years old, 10 to 15% are already affected by mental health problems. The pandemic may have increased this number or exacerbated existing ones because of fear of COVID-19, interruption of services and routine, and increasing poverty and inequality (Malolos et al., 2021). Moreover, adults' distress and negative moods during these times influence emotional support for children and are reflected in children's behavioral problems in self-regulation (Kwon et al., 2019, as cited in Bockmann & Yu, 2023). Even after the pandemic, chronic stress that was caused by the pandemic has reduced social motivation and interactions, consequently increasing social isolation. This may also be the reason why children act aggressively even when they return to school (Sandi & Haller, as cited in Wang et al., 2021). In addition, there is an increase of exposure to digital screens and addiction to computer games, sleep disturbances, and less physical activity (Ng & Ng, 2022) which led to children's physical and mental problems and worsened even so post-pandemic (Wang et al., 2021; Ng & Ng, 2022). This is especially true of Filipino youth spending two hours of undisciplined screen time more than the global average (Camus, 2018, as cited in Chua, 2022). These mental

and emotional pressures are on top of the academic demands, social conflicts, family troubles, economic concerns, and other stresses that children and teens have always faced in and out of school. These affect not only students' emotional well-being but also their academic achievement (Harpin et al., 2016). As these stressors are highlighted in schools, teachers need research-based methods and strategies to assist students in their emotional and social development so that they can cope with an increasingly challenging society.

Mindfulness is frequently regarded as a coping skill of young people in dealing with challenges, controlling emotions, and calming one's mind (Vo, 2015, as cited in Harpin et al., 2016). This makes a school-based mindfulness program a viable option to aid students in developing emotion regulation and empathy. Previous research has looked into school-based mindfulness programs, but there hasn't been much done with elementary students. Furthermore, because the available school-based mindfulness models are rarely integrated into regular class schedules, they frequently require additional class periods. There is also a dearth of studies on mindfulness in relation to emotion regulation and empathy. With these, the present research aims to describe the implementation of a school-based mindfulness program and to investigate its influence on elementary students' emotion regulation and empathy.

Mindfulness

The Oxford University Press (2014) in its Oxford Dictionaries defines mindfulness as "a mental state achieved by focusing one's awareness on the present moment while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations." It is traditionally connected with Eastern spirituality, but its secular applications are increasingly being investigated in places as diverse as the workplace, correctional facilities, and educational institutions (Leland, 2015). Mindfulness aims to bring a person's relationship to their experiences – their thoughts, feelings, and behaviors – into focus (Bostic et al., 2015). It is characterized by a focus on the breath, paying attention to events occurring within one's mind and body, and noticing and acknowledging one's own experience (Rempel, 2012).

For over 30 years, mindfulness has been utilized in therapeutic practice as a non-pharmacologic treatment (Harpin et al., 2016). However, children and adolescents have just recently been included in studies, many of which focus on mental health issues, such as anxiety and depression reduction, and behavioral issues. In school settings, it was found that mindfulness activities teach students coping and calming skills that help students navigate through their social ecology to alleviate stress and manage stressful situations (Harpin et al., 2016), and increase their self-awareness and self-control (Rodgers, 2014, as cited in Leland, 2015). Mindfulness is also recognized to improve students' focusing skills (Rodgers, 2014, as cited in Leland, 2015), critical thinking (Škobalj, 2018), creativity, and cognitive flexibility (Napoli et al., 2005), and so impact their academic performance. Moreover, lower peer-to-peer conflict and improved

positive social qualities such as compassion, patience, empathy, and generosity were observed (Nocero & Beckerman, 2014) among students who underwent a mindfulness program, thus reducing occurrences of school bullying. These studies suggest that including mindfulness activities into the school program may help teachers be better equipped to deal with various events, resulting in fewer in-class disruptions and teachers being able to focus on teaching and students on learning (Rempel, 2012).

Smith et al. (2014) compiled a list of the effective approaches for implementing mindfulness in elementary schools, which includes use of teacher-identified prompts, breathing exercises, transitional and calming strategies, and the preference for short but frequent sessions over longer yet less frequent ones. In a study by Amundsen et al. (2020), a 6-week mindfulness program among school children in the United Kingdom resulted in increased mindfulness that was theorized to be related to effective emotional regulatory and cognitive reappraisal strategies. In the Philippines, Chua's (2022) findings also revealed that mindfulness practice is feasible and advantageous to students when it is guided by well-trained practitioners. Galvez Tan and Alampay (2022) discussed possible moderators of mindfulness-based programs. According to their study, age and gender may be moderators of a mindfulness program for Filipino children. Some interventions, such as yoga-based mindfulness, may be effective for younger children and some methods may be targeted only at a particular gender among participants.

The preceding review shows that while there are studies on school-based mindfulness programs, little has been done with elementary pupils and in the Philippine context. Furthermore, available school-based mindfulness models are rarely integrated into regular class schedules, necessitating the use of additional class periods. More research on mindfulness in the school setting is needed to help lead the discussion on how it might be applied to have the greatest impact on pupils.

Emotion Regulation

Various studies explored the relationship between mindfulness and emotions. One study done during the pandemic by Sanchez et al. (2023) explored the effect of school-based yoga and mindfulness programs on psychological well-being of first-year college students. They found that there is an improvement in mood and affect in the experimental group compared to the control group. This was validated by Galvez Tan and Alampay (2022) who concluded that yoga-based mindfulness may also be effective for younger children.

Through the cognitive reappraisal method, or processing one's thoughts to modify behavior, practicing mindfulness improves emotion regulation (Berger et al., 2009). Porter et al. (2024) concurred with this theory by exploring the effects of mindfulness-based interventions on children's attentional, behavioral, and emotional self-regulation. Emotion regulation is defined as the conscious and unconscious strategies one employs to maintain,

increase, or decrease components of an emotional response (Amundsen et al., 2020). It includes skills and strategies for monitoring, analyzing, and altering emotional reactions that are both conscious and unconscious, automatic and effortful, and intrinsic and extrinsic (Cole et al., 1994; Gross & Thompson, 2007; Thompson, 1994). Emotion regulation entails not just minimizing the intensity or frequency of emotional states, but also strengthening the ability to generate and sustain emotions (Calkins & Hill, 2007; Cole et al., 1994). It is not simply concerned with the management of negative emotions, but also with the management of pleasant emotions (Gross & Thompson, 2007). Emotional, psychological, and social well-being throughout childhood have been found to influence adult quality of life, social prospects, mental health, and educational outcomes, indicating that healthy child development is dependent on effective emotion regulation (Amundsen et al., 2020).

Gross (1998) differentiated antecedent-focused and response-focused emotion regulation strategies. Antecedent-focused emotion regulation strategies relate to techniques used before the emotion-response tendencies are fully activated, whereas response-focused emotion regulation strategies refer to methods used after an emotion has actually been felt. These emotion regulation strategies have been operationalized as cognitive reappraisal, a cognitive modification strategy that involves redefining a potentially emotion-eliciting circumstance in such a manner that its emotional impact is changed, and expressive suppression, a type of response modulation that involves the inhibition of ongoing emotion-expressive activity. Research among young adults shows that re-appraisers are more likely to deal with stressful circumstances by viewing them in a more positive light and be more proactive in their efforts to improve their emotions. As a result, they experience and express more happy and less negative affect than persons who do not employ this method as often (Gullone & Taffe, 2012). Meanwhile, suppressors have less positive affect and are less successful at mood repair than non-suppressors. While suppressing negative emotions has been proven to keep the negative emotion intact, suppressors also tend to reduce their positive emotion experience (Gullone & Taffe, 2012).

Experts acknowledge that the middle childhood years are a period of tremendous change in terms of emotion regulation, since these years reflect crucial turning points in children's cognitive, social, and emotional development (Amundsen et al., 2020, Porter et al., 2024). Furthermore, developing self-regulation skills such as emotion regulation is linked to increased levels of social and emotional well-being, and even academic performance (Leland, 2015; Porter et al., 2024). Recent studies even validate that learning, specifically digital learning, which was utilized especially during and after pandemic, demands substantial self-regulation skills (Limniou et al., 2021, as cited in Bockmann & Yu, 2023). Thus, there is a need to update and validate research on emotion regulation in children and adolescents, as well as the potential positive impact of mindfulness on emotion regulation.

Empathy

Studies show self-regulation, which includes emotion regulation, is also linked to empathy (Janz et al., 2019). Empathy is defined as an inductive affective (feeling) and

cognitive evaluative (knowing) process that allows an individual to experience and understand the feelings and situation of another person (Neumann et al., 2015). Some definitions go beyond feeling and knowing to responding: empathy is characterized as the capacity to respond affectively to other people's feelings, with the goal of adapting to their needs, such as to console, assist, or spare the other person. However defined, literature agrees that empathy is a core human trait that presumably serves to regulate relationships, foster collaboration, and group cohesiveness (Rieffe et al., 2010). Prosocial behavior, which is crucial in peer acceptance, is also linked to empathy (Cheang et al., 2019; Crompton et al., 2024). A review of the prominent definitions of empathy over the last few decades demonstrates that while no single definition is consistently referenced, there is considerable connection across them (Neumann et al., 2015).

Hoffman (1987) distinguished four levels of empathy: global empathy (emotion contagion), attention to others' feelings, prosocial actions, and empathy for another's life conditions. Global empathy refers to a similar affective response to witnessing another's emotions; attention to others' feelings refers to concern for another who is in distress; prosocial actions refer to prosocial actions such as helping, sharing, and comforting another; and empathy for another's life conditions refers to empathic responses not only confined to the situation but also to another's general level of distress or deprivation. Except for empathy for another's life circumstances, children have been found to display these levels of empathy (Rieffe et al., 2010). Important to the present research, empathy is physiologically linked to emotion regulation, among many other affective states (Eisenberg et al., 1994).

Given the importance of empathy in children's development, a developmentally appropriate program that supports empathy development is required. Mindfulness meditation is one method for developing empathy (Siegel, 2007). This is also validated by Cheang et. al (2019) who found convincing support in favor of mindfulness-based interventions increasing empathy in children and adolescents. However, Crompton and colleagues' (2024) findings suggest that mindfulness-based intervention may increase prosocial behavior as witnessed by peers and teachers, even without any significant effect on empathy. It is important to further explore how mindfulness activities impact children's empathy in different contexts, such as in the Philippines, to add to the growing literature about their relationship, and to better understand their effectiveness and cultural adaptability.

The preceding review of literature shows the need for school-based mindfulness programs that are integrated into regular class schedules, as well as the dearth of studies on mindfulness in relation to emotion regulation and empathy of children. The present study aims to fill these gaps. Specifically, this study aims to answer the following:

1. How does a school-based mindfulness program influence elementary school students'

- a. emotion regulation?
 - b. empathy?
2. What challenges were encountered in implementing a school-based mindfulness program for elementary school students, and what recommendations emerged for its improvement?

Methods

A concurrent mixed-methods research approach was applied. Descriptive statistics and comparisons of means were conducted, and these quantitative analyses were complemented by a thematic analysis of the responses in the focus group discussions with students and teachers. The concurrent mixed-methods approach was appropriate for the study as it allowed the simultaneous collection of quantitative and qualitative data that provided for a comprehensive understanding through an integrated analysis.

The sample

Purposive cluster sampling was implemented, with the program conducted among 201 elementary school students from six intact classes - three Grade 3 and three Grade 4 classes - at a laboratory school in Quezon City, Philippines. As students of a laboratory school, they regularly participate in school-based innovation studies. Nevertheless, parental consent was obtained, and students whose parents did not permit their participation were observers during the program's implementation in their respective classes. Data were not collected from these students. Moreover, data from students who were absent in either of the pre-test or post-test days were excluded from the analysis.

Eighteen Grades 3 and 4 teachers participated in the study and implemented the program. They were also purposely sampled as they were the subject and homeroom teachers of the sample classes. Before implementation, they underwent a one-day training on mindfulness conducted by a mindfulness expert, and afterwards attended an orientation about the program conducted by the researchers.

The Instruments

Emotion regulation and empathy were operationalized using self-report Likert-type scales. The scale on emotion regulation was a 5-point scale (Never – Always) that was adapted from Gullone and Taffe's (2011) Emotion Regulation Questionnaire for Children (ERQ-CA), which was available at Dr. Gullone's website for research and academic use at the time of access. It consisted of 10 statements describing emotion regulation techniques of both re-appraisers and suppressors. The items were translated to Filipino by the researchers who were also elementary school teachers and were then validated

by a language expert. A reliability analysis resulted in a Cronbach's alpha of .876. This suggests that the scale is reliable for measuring emotion regulation. The items grouped according to dimensions (reappraising and suppressing) are shown in Table 1.

Table 1

Emotion Regulation Questionnaire for Children, ERQ-CA (English version)

Dimension	Statement
I. Reappraising	When I want to be happy, I think of other things. When I want to lessen my negative feelings (sadness, anger, anxiety), I think of something else. When I worry about something, I think of it in a way that can make me feel better. When I want to be happy about something, I change the way I view it. When I want to lessen my negative feelings (sadness, anger, anxiety), I change my outlook about it.
II. Suppressing	I keep what I feel to myself. When I am happy, I am careful not to show it. I control my emotions by keeping them to myself. I control my emotions about things by changing the way I view them. When I have negative feelings (sadness, anger, anxiety), I am careful not to show it.

The empathy scale consists of 18 items adapted from the Empathy Questionnaire for Children and Adolescents (EmQue-CA) developed by Rieffe et al. (2010). At the time of access, the questionnaire was publicly available for research and academic use in the Focus on Emotions website, a website owned by the developers' institutions. It is a 3-point scale answerable by "not true," "sometimes true," and "always true." The items were likewise translated to Filipino, then language validated. The reliability coefficient, Cronbach's alpha, was .912. This suggests that the scale is reliable for measuring empathy. The items are classified into 3 dimensions: understanding others' feelings (emotion contagion), feeling what others are feeling (global contagion), and desiring to make others feel better (prosocial actions) (Gross, 1998). The translated items grouped according to dimensions are shown in Table 2.

Table 2*Empathy Questionnaire for Children, EmQ-CA (English version)*

Dimension	Statement
I. Understanding others' feelings	I understand that my friend is embarrassed when they do something wrong.
	When my friend is mad, I would like to know why.
	I understand that my friend is happy when they do something right.
	When my friend is sad, I often understand why.
	When my friend cries, I often understand why.
	I am happy giving my friend a gift.
II. Feeling what others are feeling	When my mother is happy, I am happy too.
	I don't feel good when people argue.
	When my friend laughs, I laugh too.
	I want everyone to feel good.
	When my friend feels bad, I feel bad too.
III. Desiring others to feel better	When my friend is sad, I want to make them happy.
	I want to help when my friend is mad.
	When my friend is sad, I also feel sad.
	When my friend is in an argument, I want to join in.
	When my friend cries, I cry too.
	When my friend is sad, I want to make ways to make them feel okay.
	When one of my family members is sad, I feel bad.

The School-Based Mindfulness Program

The implemented mindfulness program was integrated in the regular class schedules of the students for 10 weeks. The program consisted of five to ten-minute mindfulness exercises at the start of each period, just before the class started. These short yet frequent periods were consistent with the recommendations of Smith et al. (2014) in implementing mindfulness in elementary schools. The exercises were child-appropriate mindfulness activities based on what literature suggested, and were validated by an expert, a guidance counselor who had finished special training on mindfulness. Before implementation, all participating teachers underwent a one-day

training on mindfulness and orientation on the program. Led by the same expert who validated the activities, the training included a brief overview of the study, a discussion on mindfulness, a hands-on trial of the mindfulness activities to be implemented, and an open forum to clarify implementation nuances. The orientation addressed logistical components of the program, such as the necessary materials and the process for documenting participants' experiences.

A handout containing the weekly activities was distributed to guide the teachers on the implementation. An example of the activities and how they appeared in the teachers' handout are presented in Table 3. During the implementation, teachers were asked to keep a journal of observations, especially in terms of students' empathy and emotion regulation and the program implementation. These were not analyzed; however, these helped the teachers provide informed and meaningful reflections during the focus group discussions. Excerpts from the teachers' observations during the program can be found in Appendix 1.

Table 3

An excerpt from the implementing teachers' handout (English translation)

Week	1-2
Mindfulness Exercise	Shark's Fin
Description	Students will put their hand on top of their head like a shark's fin. They will then slowly run it down their face and their necks. Repeat 4-6 times.
Script/Guide	"Sit properly. Close your eyes. Relax. Put one hand above your head. Slowly, move it downwards near the neck. Notice the feeling your hand brings to your forehead*." *nose, lips, chin, and neck. Allow the students to do this independently. If you notice some doing the exercise too quickly, give them gentle reminders.

Focus Group Discussions

Two sessions of focus group discussions (FGD) were intended throughout the duration of the study – one, mid-implementation (after the fifth week of implementation) and another, post-implementation. However, the schedule of the post-implementation FGDs was at the onset of the pandemic when schools were indefinitely suspended, so it did not push through. With this, all FGDs mentioned in this paper pertain to mid-implementation FGDs only. Despite this, the mid-implementation FGDs provided rich qualitative data from students and teachers while they were actively engaged in the program, sufficiently addressing the study's primary aim of documenting the implementation of the mindfulness program. These discussions captured participants' immediate reactions and reflections, which contributed to meaningful analyses.

FGDs with both students and teachers were separately conducted – two groups for teachers and two groups for students. There were six students in each of the student groups who were randomly selected by their homeroom advisers. All subject and homeroom teachers were invited to the FGDs; however, due to scheduling conflicts, only five or six participants were present in each group. The FGDs were semi-structured discussions that aimed to get feedback from the teachers and students on the implementation of the program and to discuss observed changes in students' emotion regulation and empathy, if any, at that point of implementation. The questions used are presented in Table 4.

Table 4

Focus group discussion questions (English translation)

For students
1. Please share your experiences in doing mindfulness activities, be it in your homeroom or subject class. 2. How did you feel doing them? Did you look forward to the mindfulness activities? Were they boring to do? 3. In your opinion, why are we doing this? 4. After weeks of doing the mindfulness activities, did you notice changes in yourself or your classmates? 5. Those who get angry easily or are loud, are they still like that? How about you, have you noticed a change in your feelings and way of thinking? 6. What effect did you notice on you? What can these exercises do for you? 7. Do you feel more in control? 8. As we continue to do these exercises, what are you looking forward to? What do you expect from these activities?
For teachers
1. Please share your experiences in implementing mindfulness activities, be it in your homeroom or subject class. 2. What was it like to have students do them? 3. Were there noticeable changes in your students? 4. What positive changes did you notice? Negative? 5. What challenges did you face in doing the exercises? How did you overcome them? 6. What are your expectations for this in the future? By doing these activities, what do you want to achieve in class/homeroom?

Data Analysis Procedure

Descriptive statistics were used to examine the levels of emotion regulation and empathy among students. To determine if the emotion regulation and empathy of students improved after the mindfulness program, a dependent-samples t-test was conducted. To perform these statistical tests, the data from the scales were treated as ordinal approximations of continuous variables. Before statistical analyses were conducted, responses were matched, and the sample size was reduced to 91 for emotion regulation and 100 for empathy in the data analysis. The basis for matching was the completion of responses in the scales; data from students whose parents did not give consent, were unable to answer either the pretest or the posttest, and did not answer some items were excluded from the analysis.

The responses to the focus group discussions were transcribed, coded, and thematically analyzed to supplement the statistical results. A hybrid thematic analysis approach was employed, beginning with a deductive framework based on predefined categories of observed changes in students: whether in emotion regulation or empathy. As the analysis progressed, additional themes were observed inductively.

Ethical Statement

This study adheres rigorously to ethical standards. Students and their parents/guardians were informed of the study, and parents/guardians provided consent for their children's participation, with data confidentiality and anonymity ensured. The mindfulness program presented minimal risk and prioritized participant well-being, aiming to enhance empathy and emotion regulation in a respectful manner. Participation was voluntary and withdrawal had no consequences. The study received approval from the laboratory school's research office.

Results

Quantitative Findings

Table 5 summarizes the pretest and posttest means and standard deviations of students' responses in EmQ-CA and ERQ-CA. The mean scores of the sample in the posttests of both ERQ-CA and EmQ-CA are higher than those of the pretests. The same is true for all the dimensions of each scale. However, the scores are also more varied in the posttests, as reflected in the standard deviations. The significance of the differences in these means was tested using a dependent samples t-test. Results show significant differences in the mean scores of both scales and all their dimensions, with all p-values < .001, except for the Understanding Others' Feelings dimension of the EmQ-CA ($p = .029$), which is still significant at the 0.05 level.

Table 5*Descriptive Statistics for EmQ-CA and ERQ-CA and their Dimensions*

Scale	Pretest		Posttest		Mean Difference
	M	SD	M	SD	
ERQ-CA	3.3475	.52724	3.7005	.81518	.3530
Reappraising	3.5033	.73052	3.7764	.85642	.2713
Suppressing	3.1929	.64220	3.6236	.91883	.4307
EmQ-CA	2.3685	.26681	2.4815	.36658	.1130
Understanding others' feelings	2.3910	.31248	2.4625	.40771	.0715
Feeling what others are feeling	2.4367	.32836	2.5630	.40304	.1263
Desiring others to feel better	2.2931	.36481	2.4248	.41839	.1317

Qualitative Findings

The initial deductive analysis of the focus group discussions (FGDs) with students and teachers revealed that they observed changes in the students' emotion regulation during the implementation of the mindfulness program. For example, a student noted that they were able to manage their fidgeting, a manifestation of worry, when they practiced mindfulness exercises: *"Sometimes when I'm listening to Teacher, hindi mapakali yung kamay ko (my hand is restless). Tapos gumawa ng mindfulness, parang nag-stop (Then, we did mindfulness activities, and it seemed to have stopped)."* Another student commented that it helped them when they did mindfulness exercises before quizzes because it eased their nervousness: *"Nawawala yung kaba kapag may quiz (The anxiety over quizzes disappears)."* One teacher narrated how a student's anger was managed after being instructed to do mindfulness exercises: *"Yung nag-away na po sila ... lahat sila nag-iiyakan ... pinapapikit ko siya, pumipikit talaga siya, tapos nag-i-inhale, exhale din siya (When they were fighting ... they were all crying ... I made them close their eyes, they really closed their eyes, then did breathing exercises)."*

Notably, across all four FGDs, no explicit comments were made about changes in students' empathy.

Other themes inductively emerged during the discussions, particularly students' focus and motivation. Both students and teachers shared observations regarding attentiveness, ability to transition between subjects, and feelings of relaxation during mindfulness exercises. The FGDs with teachers also provided insights on the program's implementation, in terms of both challenges and recommendations.

Discussion

Improvements in Emotion Regulation and Empathy

The students reported significant improvement in their emotion regulation; however, the posttest means remained in the "neutral" response category (3 in the 5-point scale). Moreover, the larger contributor to the improved emotion regulation appears to be the increased mean in the suppressing dimension (mean difference = .4307). The students became more emotionally regulated largely by learning to inhibit ongoing emotion-expressive behavior. For children, this means not acting based on how they feel. Nevertheless, John and Gross (2004) cautioned that while expressive suppression may effectively keep reactions to negative emotions intact, it may also inhibit the full experience of positive emotions. Regardless of the mean difference, the students reported better reappraising than suppressing practices. While the students learned better expressive suppression, they balanced this with cognitive reappraisal by changing their perspective in situations so that the emotional impact on them was reduced. This analysis supports Amundsen et al. (2020), who concluded that changes in mindfulness are positively associated with changes in cognitive reappraisal. Specifically, Amundsen et al. (2020) found that increased mindfulness practices are linked to enhanced ability to reframe negative emotions and experiences positively. The present study's results reinforce this hypothesis by demonstrating that students who engaged in mindfulness activities showed improved emotion regulation, characterized by a significant rise in cognitive reappraisal practices and expressive suppression.

The statistically significant improvement in the students' emotion regulation after the mindfulness program was supported by the coded responses of both students and teachers in the FGDs. The students' ability to regulate their emotions was evident in how they described their experiences: some students noticed that mindfulness activities helped them control fidgeting, a manifestation of worry, while others found them useful in reducing test anxiety. Meanwhile, the teachers observed a shift in how students handled conflicts, with some being able to pause, practice breathing exercises, and calm down upon the teacher's instruction to practice mindfulness, instead of reacting impulsively. These anecdotes highlight how the students were able to integrate mindfulness activities into real-life situations.

On the other hand, the students consistently reported "sometimes true" (2 in the 3-point scale) in response to statements about how they empathize with others. Nevertheless, the observed increase in the posttest mean was significant. Both in the pretest and posttest, students empathized mostly in terms of global contagion. Among

the three dimensions, the greatest increase in mean was observed in the prosocial actions dimension. This suggests that while students became more aware of others' emotions, their empathy manifested primarily in desiring others to feel better rather than feeling what others are feeling. The mindfulness practices may have heightened students' responsiveness to others' distress. However, the persistence of "sometimes true" responses suggests that deeper, more consistent empathic engagement - such as actively considering another's perspective - may require longer exposure to the program or that the program could be complemented with other social-emotional learning interventions. The implementation of the program, as well as the study's design, need careful reevaluation, especially since no mention of empathy was made during the focus group discussions. The absence of references to empathy in the observed changes among children could be attributed to the fundamental nature of empathy. Unlike emotions, which make emotion regulation more directly observable, empathy is usually invisible unless shown through bold actions to respond to another person's emotions. It is possible that no relevant occurrence prompted students to express their empathy at the time of the FGD. This highlights why self-report measures are among the most effective ways to operationalize empathy (Neumann et al., 2015). Although students participated in focus group discussions, the general questioning may not have sufficiently encouraged them to reflect on their empathetic experiences. This result demonstrates the nuanced nature of empathy. While the statistical analysis shows significant improvement in empathy, this was not explicitly reflected in discussions. Similarly, in the study of Crompton et al. (2024), mindfulness activities did not lead to improved self-reported empathy, even though prosocial behaviors showed significant improvement. This suggests that students may experience empathy in ways that are difficult to articulate, which reinforces the idea that empathy does not always manifest through overt actions or verbal expressions. This highlights the need to explore more effective ways to measure empathy.

Apart from improvements in terms of emotion regulation, both students and teachers have identified various benefits of the mindfulness program. For example, a student observed that since the implementation of the program, their attentiveness has improved. Another student observed that they were able to shift their focus from the previous subject to the next one because of the mindfulness exercises that were conducted at the beginning of each class. Another student stated that performing mindfulness activities allowed them to relax (physically).

Challenges and Recommendations for Implementation

Teachers highlighted their concerns about the program's implementation during the focus group discussions. One challenge was getting all students to take the exercises seriously, especially at the beginning of the program implementation. Because participation was optional, some students chose not to participate, and regrettably, some of them disrupted the flow of the exercises by commenting or laughing at what their peers were doing. One group suggested that teachers could encourage student

participation by undertaking the exercises themselves. When students witnessed their teacher doing the exercises and being serious about it, they were more likely to want to join in and be serious as well: *“Pag ginagawa ko yun, ako kalmado/mindful tapos napapansin ko ‘yung mga kids na-e-encourage din sila to do (When I do that, I become calm/mindful, then I notice the kids get encouraged to do it too).”* In relation to this, teachers observed that among those who dutifully completed the exercises, some did so only as a routine, performing the actions but no longer being mindful. Another issue was that the classrooms had an excessive amount of stimuli. The program was implemented at a time when construction around the school was underway. Furthermore, some classrooms were close to the canteen, while others were close to the gates. Because these areas provided a lot of stimuli depending on the time of day, it was challenging for the students to focus on the mindfulness exercise during certain periods.

Aside from the challenges, the teachers also presented their program recommendations. They expressed interest in using the exercises not only at the start of class but also at other moments throughout the period. For example, a teacher might decide that doing a mindfulness exercise before seatwork, which could occur in the middle or near the end of a class, would be beneficial. Another suggestion was to teach students how to incorporate mindfulness practices into their daily lives. A few teachers suggested that it would be good if students could do the mindfulness exercises on their own whenever they felt the need. These recommendations align with the strategies that Smith et al. (2014) identified in implementing mindfulness in schools. Their study emphasized that mindfulness activities are most needed when shifting from one activity to another, and that short but frequent mindfulness sessions are more effective than longer, less frequent ones. They also concluded that students who practice mindfulness outside school benefited most from the mindfulness program. The teachers' recommendations in the present study reflect these approaches, as they would like to embed mindfulness exercises at various points throughout the class, and encourage students to practice mindfulness independently when needed. These recommendations do not only reinforce mindfulness as a structured activity, but also promote mindfulness as a self-regulation tool that students can use beyond the classroom.

Conclusion

This paper documented the implementation of a school-based mindfulness program and explored its influence on the emotion regulation and empathy of elementary school students. The implemented program was administered by homeroom and subject teachers and was integrated into the regular class schedule. The findings from both quantitative measures and focus group discussions indicate marked improvements in students' emotion regulation and empathy following the program. Quantitative analysis using the Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA) and Empathy Questionnaire for Children and Adolescents (EmQ-CA) revealed that students' mean scores in both scales increased significantly from pretest to posttest. Notably, the largest improvement in emotion regulation was observed in the suppression dimension,

indicating that students learned to better inhibit their emotional responses. While this skill is valuable, it is important to balance it with cognitive reappraisal.

Focus group discussions provided qualitative support for these findings. Students and teachers reported noticeable changes in students' ability to manage emotions, with students sharing about reduced anxiety and better focus during classes and assessments. Teachers observed improvements in conflict management among students. However, empathy improvements were not discussed in focus groups, possibly due to the more subtle nature of empathetic behaviors which are less observable in routine interactions.

Despite these positive outcomes, challenges were noted in the program's implementation. Initial student participation was inconsistent, and some students disrupted the exercises. Additionally, environmental factors such as construction noise and proximity to busy areas of the school posed difficulties in maintaining focus during mindfulness exercises. Based on these insights, several at various points during the class, not just at the beginning, and teaching students to practice mindfulness independently recommendations were made to enhance the program's effectiveness. Teachers proposed integrating mindfulness exercises at various points during the class, not just at the beginning, and teaching students to practice mindfulness independently.

Overall, this study highlights the potential of a school-based mindfulness program to significantly improve emotion regulation and empathy among young students. By addressing the implementation challenges and incorporating teacher and student feedback, the mindfulness program can be refined to better support children's psychological and social development in diverse school environments.

The current study lacked methodological rigor due to the onset of the pandemic towards the end of the program evaluation. Furthermore, because the findings are based on a single pilot research in a particular urban school, caution should be taken when applying the results to other populations. In light of this, similar studies in the future may include post-implementation focus group discussions and even one-on-one interviews. Moreover, because there was no control group in the present study due to ethical concerns, future research could operationalize mindfulness as a measurable construct and examine whether increases in mindfulness are associated with improvements in emotion regulation and empathy. This approach could help clarify the potential impact of mindfulness in the absence of a control group. Finally, the relationship between emotional check-ins, mindfulness, self-regulation, and empathy may be explored. Excessive exposure to devices and social media platforms may be looked into as an additional source of stress as well.

In terms of implementation, future mindfulness programs might explore the flexibility of when to perform mindfulness exercises during class time, as well as the benefits of specifically teaching children how to incorporate mindfulness exercises into their daily lives. A monitoring checklist or journal may be used to track observable changes in

anxiety and other negative emotions caused by stress. Establishing regular feedback sessions with students and teachers to adjust the program as needed will help not just in monitoring the students' progress but also in ensuring the program's relevance and effectiveness.

Providing training to teachers and staff may be beneficial in implementing and institutionalizing mindfulness programs in schools. This will equip teachers and staff with the necessary skills and tools to monitor and evaluate the program. Other stakeholders in the school community may also be engaged to provide support and even participate in the mindfulness program. This may lead to a holistic approach to the implementation of the program. When everyone in the community is involved, it may foster a sense of ownership and responsibility among all members to ensure the success of the program. This will help ensure that the monitoring and evaluation of the mindfulness program remain sustainable.

Finally, at this time when students have returned to face-to-face schooling, a school-based mindfulness program could assist children in re-establishing and/or improving their prosocial abilities like emotion regulation and empathy, which were adversely affected during the pandemic. The prolonged period of remote learning and social isolation disrupted crucial social interactions, leading to increased anxiety and emotional dysregulation. Developing information, education, and communication materials may empower students to practice mindfulness intentionally and use it for self-regulation with minimal or no prompts from teachers. This may facilitate at-home practice which will help students even outside the classroom. Mindfulness practices can help students improve emotional responses and foster empathy.

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Appendix A

'Yung start atsaka yung stop sobrang naging *helpful* po dahil talagang kumakalma sila ... ginagawa ko din po s'ya kapag bago mag-report.

Tapos minsan bago din mag-quiz para ah makalma sila ... Yung *quizzes* laging mas *effective* yun para sa kanila.

Yung nag-away na po sila, aligagang-aligaga na po talaga sila. Halos lahat sila nag-iyyakan so uhmm, ang ginawa ko nag circle kaming lahat ... tapos *inhale*, *exhale*, pipikit yung mga mata ... Lalo na yung si [student's name]. Kasi sobra talaga siyang ano, may *management* [issues] sya. So pag pinapapikit mo sya, pumipikit talaga sya, tapos nagi-*inhale*, *exhale* din sya.

Sa akin din po, *motivation* din na parang pag sinabi lang na mindfulness, mabuti na yun. Yun yung iniisip nila na okay, ito yung gagawin natin. After that, wala na, parang balik na din tayo sa ano ...

In *fairness* po iba po talaga yung energy nila dun sa nung hindi ako nagsimula with the *mindfulness activity* compared dun sa nagsimula ako with it ... Pag hindi ko sila nasimulan, sobrang taas nung energy nila na nahihirapan na akong pababain sya.

Mas ginagawa ko siya kapag *every after* na lang magdiscuss as a group ... Pagkatapos nilang mag-settle down sila mag *inhale and exhale*, then tsaka tsaka kami mag-di-discuss. So sobrang kalmado sila habang nagpi-present yung mga *classmates* nila, sobrang nakaka-focus sila. Yun yung naging talagang *positive*.

Naging *helpful* po dahil talagang kumakalma sila sa *reporting* at *quizzes*.

Appendix B

Teacher's Observations About the Mindfulness Program

Ang pangit nga po ng *acoustics* nung room, parang kahit ako hirap akong ma-*identify* - mahaba ba yung *sound*?

Hindi na po talaga nila ma-*differentiate* kung ano, tapos na ba yung *drill* o iba na ba? Yung marami pong ingay na nakaka-*distract*.

Before po ang *suggestion* sa umpisa ay na-na-*realize* ko po na bukod sa umpisa maganda rin po na mula *in-between* tsaka pag napansin ko po na medyo magulo na sila then *okay stop* muna tapos minsan bago din mag-*quiz* para, ah, makalma sila.

Pag binanggit mo na yung pangalan nung ano *exercise*, alam na nila, *ready* sila agad, hindi naman sila yung parang KJ na ayaw gumawa, merong iilan lang pero *at least* di po sila na-*didistract* sa katabi nila. Nung una medyo na-*di-distract* pero eventually na-*realize* nila na yung ibang kaklase nila ay gustong mag-*participate* parang medyo natauhan sila, [laughs] hindi na sila nanggugulo.

Yung sa *Homeroom* po, ang nagawa pa lang po ay *glitter jar*. Yung mga sumunod po ay talagang wala na, parang dalawang *homeroom* po yung nawalan ng klase, tapos yung isa po ay naggamit for *Dengue*. So talagang *glitter jar* lang tapos talagang gustong-gusto po nila, tuwang-tuwa po sila sa *glitter jar* hanggang ngayon yung iba ayun nagdadala pa rin.

Meron lang pong iba na naiyak nung may ibang nabasagan, yung nabasag yung ibang *glitter jar*. Baka po mas *okay* talaga yung *plastic bottle* since medyo magulo po sila pero generally na-enjoy nila po.

Yung pinaka madaling i-*implement* is yung sa *bell*, kasi yung parang nasa *bell* syempre pipindutin mo na lang sya or papatunugin mo lang tapos diba parang *concentration*, makikinig sayo sa *sound* saka magtataas ng kamay.

Sa akin po nadalian po ako sa *bell* kasi merong *app* po na *download* para sa tunog ng *bell*. Tapos may iba't-ibang tunog yung *bell*. *Everytime* na gagawin namin sya, iba-ibang *sounds* ng *bell* yung naririnig ng mga bata. Tapos makikita mo sa bata na nag-*co-concentrate* sya pag tahimik sya, tapos yung pag naka-*forward* sya parang gustong-gusto nyang marinig yung *bell*. Tapos di ko alam kung nagpapaunahan sila na magtaas ng kamay kasi bigla-biglang nag-gaganun [gestures] eh. Pag nararamdaman nila yung sa katabi nila, gaganunin nila [gestures] [laughs].

May mga bata na hindi nag-*pa-participate*... kunwari sa'kin, merong anim? Dun sa *side* ng *room* hindi gagawa tapos parang magsesenyas na ahh, parang ayaw nila. Sila yung mga nag-uusap, *usually boys*. Nung tinanong ko *after* ba't hindi nila ginagawa yung

practice, hindi raw sila pinayagan.

Kapag hapon na *last*, parang gusto nilang minamadaling matapos lahat. Parang gusto nang umuwi talaga. Yun po yung *observation* ko.

Dahil sa *suspension*, medyo nase-set aside natin... *Hoping* na mapahaba po yung oras.

Parang naging *routine* na lang sa kanila ... Paano ito magiging *effective* kung wala *direct* na pagbabago?

Feeling ko rin kasi baka yung *start* ng *implementation* natin ayun yung malaking event na sobrang *emotional* nung mga bata kaya hindi agad talaga nila masyadong ma-*absorb*. Kasi ay *emotional* silang talaga.

Kahit *everyday* yung *class* ko, may mga *times* na ako *oh my God*, nakalimutan ko syang gawin. Pero parang *in a week* naman magawa ko sya ng [*minimum*] dalawang beses hanggang apat.

Tinry ko na sya sa *Grade 12* ko, may mga ano rin sila na *stressful projects* eh, marami ... Mararamdaman mo sa kanila na iba rin yung *level* ng *maturity* nung nagpa-*practice* nun ...

Yung *glitter jar* kasi medyo hindi sya naging *helpful*, naging *distraction* sya... *to the point* na pinauwi ko na sya [*laughs*] kasi *instead* na makinig sila at ay pinaglalaruan, so hindi na sila nakakapag-*pay attention* sa *instructions*... Parang *stressful* [sa *teacher*] yung *effect*.

Helpful in itself yung matutunan nila yung konsepto ng *mindfulness*.

Minsan habang nag i-*intro inhale* sabay sabay sila... Hihinto po sila... pero parang saglit lang po minsan sila kumakalma tapos minsan po babalik po ulit sila dun sa pagiging masaya [*laughs*].

Mas gusto po nung *kids* yung *bell*. Mas napansin ko po na mas *effective for them* yung *bell*... nag-*re-request* pa sila na ulit-ulitin ko na parang, "*teacher one more, one more ring, one more ring.*" Towards the end parang napansin ko parang nahihiya na yung mga makukulit na bata na hindi sumunod. *Because everyone likes it.*

Yung *sharks fin* po, at *first okay* sila pero yun nga, dumating yun sa *for example* diba *two weeks* po nating ginawa yun. Pagdating ng *second week* parang ehha wala na.

Pero nakakatuwa yung sa *coin*... Sige tingnan nga natin kung sino dito yung, yung malakas ang pandinig. Na-*cha-challenge* sila. So dun sila nagiging *mindful*. At napansin ko parang kapag dinagdagan nyo sya ng *challenge*.

Mas ginagawa ko siya kapag *every after* na lang mag-*discuss as a group*... Pagkatapos nilang mag-*settle down* sila mag *inhale and exhale*, then tsaka tsaka kami mag-*di-discuss*. So sobrang kalmado sila habang nag-*pi-present* yung mga *classmates* nila, sobrang nakaka-*focus* sila. Yun yung naging talagang *positive*. At ska para siyang naging mas magandang *tool* sya *for classroom management*.

Pag ginaya mo sya with the *kids*, ako mismo, natutulungan ako na mag-*settle down*. Si *teacher* din nakakapag-*settle down*. Napansin ko nung hindi ko sya ginagawa parang, paang naiinis ako dito sa batang to, hindi sumusunod. [*crosstalks*] Masyado ko syang iniisip. Ino-*overthink* ko sya. Pero nung ako na mismo, nag *let go* ako kumbaga. Ako na-*settle* din ako.

First quarter hindi ko pa rin kilala yung mga anak ko kasi wala kaming *quality time spent together*... Parang nagiging *struggle* din po yan for me na parang *this was supposed to be a time for homeroom, for getting to know the kids*. Kaya lang kailangan mo syang isingit.

Ang iniisip ko lang, kung hindi siguro kapit sa time talaga, ma-*appreciate* mo sya kasi yung mga time na medyo maluwag yung *schedule* namin sa klase, natutuwa akong i-*observe* sila.

Appendix C

Teacher's Recommendations for the Improvement of the Program

Makita mo silang gagawin nila kahit di mo sabihin, kunwari kung talagang *stressed* sila.

Sana di na dumami yung *distractions*

Baka kasi iba yung iniisip nung mga bata, okay lang naman pala na hindi mag-*participate*, kaya nagkakahawaan eh. Kung meron kaya tayong way para ma-*encourage* sila...

Sabi ko, paano ba mas mai-*integrate* nang maayos yung para ang dating ay [hindi] *separate* dun sa *subject* ko talaga... para *at least* naa-*attach* nila, ah, *part* 'to ng *English class* namin.

Sana po kapag tumagal na, parang ma-a-*appreciate* na rin ng yung *activity* at parang magamit nila ... na kahit kunwari nasi-*stress* sila sa, pagdating sa mga *quizzes*, talagang ma-a-*appreciate* nila at tsaka maaalala nila na pwede namin itong gawin talaga. Hindi lang yung "ni-re-*require* sa amin or yung pinapagawa sa amin ni *teacher*." Yung parang *natural* lang na nagsi-*seek* sila ng pagiging *mindful*. Yung hindi sya yung dahil sinabi lang.

Yung talagang nakabase sya dun sa sitwasyon hindi yung ni-re-require mo lang syang gawin. Parang kunwari, ito kasi yung kailangan nila. Kung kunwaring umiiyak na kasi nawawala yung *pencil case* nya, hinga muna. *Inhale exhale. At least helpful* talaga siya. Yung *mindfulness*, sobrang mas *helpful* talaga, so parang *something to think about*. Baka pwede ring pag-isipan na yung pag-implement ba nya dapat *every beginning or as needed* lang?

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AI Use Declaration:

During the development of this manuscript, the authors used ChatGPT. This was used for language refinement and grammar correction. After using the AI and AI-assisted technologies, the authors reviewed and edited the content. The intellectual content of this manuscript remains entirely the responsibility of the authors.

How to cite this article:

Rocena, L.A.M., Danao, J.S., & Jamon, K.G.G. (2025). Implementation of a School-Based Mindfulness Program and its Effects on Emotion Regulation and Empathy of Elementary School Students. *Philippine Journal of Education Studies*, 3(1), pp. 80 - 105
<https://doi.org/10.61839/29848180la10j7kg13>

Date submitted: 31 July 2024

Date accepted: 22 November 2024