

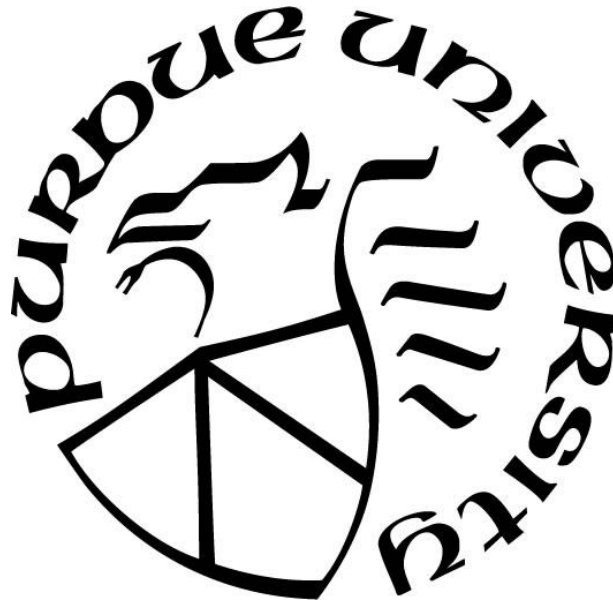
**NURTURING CONCERN FOR OTHERS IN ADOLESCENTS: A STUDY
OF EMPATHY, COMPASSION, AND PROSOCIAL BEHAVIOR**

by
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Dedicated to all educators striving to make this world a better place.
And to my loving family—Aai, Bappa, and Antara; my second family—Jnana Prabodhini; and
my beloved mentor Late Vivek Ponkshe, all of whom have boundlessly inspired me to become a
better educator every day.

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ABSTRACT

This dissertation investigated a psychoeducational intervention's effectiveness in nurturing concern for others in adolescents with high intellectual abilities. The intervention was implemented at two research sites in a city in western India with 130 participants. Concern for others was conceptualized as an interplay of empathy, compassion, and prosocial behavior, and interrelationships among them were examined using correlational and regression analyses of self-reported survey data. Results indicated that prosocial behavior is positively associated with empathy (i.e., perspective taking and empathic concern) and other-compassion (i.e., compassion for others and compassion for other living beings) with correlations ranging from medium to strong ($.46 \leq r \leq .79$). Compassion for self, however, is not associated with prosocial behavior ($r = .01$) or any other key variables of having a concern for others ($-.06 \leq r \leq .09$). Compassion for others and perspective taking are the strongest predictors of prosocial behavior. Predicted self-reported prosocial behavior in girls is, on average, significantly greater than that in boys. Participants were then randomly assigned to treatment and control (delayed treatment) groups. The intervention's effectiveness was evaluated using a convergent mixed-methods design by combining repeated-measures multivariate analysis of variance (RM-MANOVA) of self-reported survey data and thematic analysis of interview data. Classroom quality was perceived to be high. Moreover, on average, participants' level of adherence to the intervention was high, especially for session attendance (93%), and self-reported home activity completion (89%). The RM-MANOVA results showed that the self-reported concern for others varied significantly over the time of participants' participation in the intervention with a large effect (treatment group: $\eta_p^2 = .57$; delayed treatment group: $\eta_p^2 = .47$); however, the effects did not seem to sustain over the next three months. Univariate *post-hoc* analyses indicated significant differences with moderate effect size in prosocial behavior and compassion for others. Overall, the intervention was perceived to be a largely positive experience—appealing, meaningful, and supportive of belongingness—yet there is a scope for improvement, especially regarding active participation. Emotional regulation, mindful engagement, responsible communication, relationship building, kindness, and gratitude were described as key intervention affordances. The mixed-methods integration of results provided preliminary evidence for the effectiveness of the intervention.

CHAPTER 1 INTRODUCTION

In this chapter, I introduce the study and describe my motivation for conducting this study. I specify the broad goals of the study and present research questions. Additionally, I briefly introduce the methods of the study and explain the approach to attain the study goals.

Motivation Behind the Study

Most conceptions of giftedness focus more on cognitive abilities and the development of gifts in one or more domains and less on what individuals do with their gifts to contribute to the common good (Sternberg, 2017; Sternberg, Desmet et al., 2021; Sternberg & Karami, 2021). But in today's world, many human failures seem to evolve more from the lack of concern for others than from strictly individual cognitive abilities or domain expertise (Chowkase, 2022; Chowkase & Watve, 2022). Examples include the impending climate change caused by human actions and the ongoing wars around the world. Given that the current lop-sided focus on cognitive competence or expertise in gifted education, conceptions of giftedness should focus as much on how humans can work together toward a common good as on the development of competence in one's actions and achieving expertise in any specific talent domains (Bapat, 2013, 2017; Chowkase, 2022; Chowkase & Watve, 2022). Such widening of the current focus of gifted education seems unattainable without a commitment to the development of concern for others, especially through school education. Therefore, the key motivation behind this study is to examine what constitutes having a concern for others and how can it be developed in adolescents with intellectual gifts so that they can be prepared to work together toward a common good.

Leading scholars in the fields of intelligence, giftedness, creativity, and talent development are now proposing alternative conceptions of giftedness that transcend the academic, transactional, and materialistic achievements of individuals (Renzulli, 2020; Sternberg, 2017, 2020). Rather they are focusing on how the gifts are being used for the betterment of the world (see Sternberg et al., 2022, for review). Conceptual work produced by Renzulli (2020), Sternberg (2017, 2020), and Bapat (2017) highlights a growing need for educators to focus their attention on the purpose and contribution of an individual's gifts for the benefit of others—humans and nature alike, while also focusing on domain-specific talent

development. Despite growing interest, there is a dearth of research on this topic, especially, on the development of concern for others among adolescents with intellectual gifts. Although some efforts are being made to measure giftedness that contributes to the common good (Sternberg, 2021), few scholars have studied psychoeducational interventions to develop a concern for others in the field of gifted education. This study aims to fill the evident gap in the literature concerning the understanding and development of concern for others among adolescents with intellectual gifts.

Goals of the Study

The central goal of this study is to develop and examine the effectiveness of a psychoeducational intervention to nurture a concern for others in adolescents with intellectual gifts. Based on the review of literature presented in Chapter 2, I conceptualize concern for others as a complex interplay of *empathy*, *compassion*, and *prosocial behavior*. Adolescence presents a developmentally opportune time for nurturing empathy, compassion, and prosocial behavior (Davis, 1994; Hoffman, 2008; Jazaieri, 2018). Therefore, the second goal is to examine interrelationships among these three constructs as they pertain to adolescents with intellectual gifts. Results from this work will reveal the extent to which the intervention succeeds in developing a concern for others and what relationships exist among the three focal outcome variables of this study, namely, empathy, compassion, and prosocial behavior.

Paradigm Shifts in Gifted Education

Interventions focusing on the development of concern for others are rare in gifted education (Moran, 2020; Renzulli, 2020; Sternberg, 2020). This is not surprising, given the history of gifted education. The focus of the field has largely been on identifying and preparing individuals for personal achievements (e.g., high-stakes tests, elite college admissions--Sternberg, 2017; Sternberg, Desmet et al., 2021; Sternberg & Karami, 2021). Over the past century, gifted education has undergone three paradigm shifts, starting with studies of intelligence in the early 1900s, to the rise of psychometric testing for exclusive educational services in the mid-1900s, to broader conceptions of talent development in the late 1900s (Lo & Porath, 2017). The influence of IQ-based conceptions of giftedness still exists; however, many

scholars today view giftedness as dynamic and socially constructed (Borland, 2005; Sternberg & Ambrose, 2020). That is, giftedness comprises a malleable set of cognitive and non-cognitive capabilities that develop with optimal scaffolding from the environment (e.g., Feldhusen, 1994; Renzulli, 1978; Subotnik et al., 2011, 2018). This transition to a broader conception of giftedness has encouraged educators to examine giftedness with at least some focus on the role of non-cognitive aspects.

In addition, conceptions of giftedness have been shaped by social, political, and economic movements, and the needs of the respective times (Borland, 2005; Sternberg & Ambrose, 2020). In recent decades, severe threats to humankind and nature have emerged from human activities (e.g., the COVID-19 pandemic and geopolitical wars in the Middle East and Europe). Therefore, it becomes important to assess the current realities and the contemporary needs of the world as scholars examine the conceptions of giftedness that exist today and the purposes they serve in current times. To that end, I present a conception of giftedness that highlights the need for fostering a concern for others, which is arguably a pressing need for a meaningful coexistence of human societies and nature today and in the future. This conception originally appeared in the writings of Bapat (2013, 2017), and I expand upon it in this study (see also, Chowkase, 2022; Chowkase & Watve, 2022).

The Three-C's Conception of Giftedness

Based on the work conducted at Jnana Prabodhini in India, Bapat (2013, 2017) has argued for incorporating the development of a concern for others in gifted education and making it a central focus of gifted education. Based on Jnana Prabodhini's work in this area, I have proposed an alternative conception of giftedness (Chowkase, 2022; Chowkase & Watve, 2022) that integrates cognitive, affective, and motivational aspects and focuses on the development of *concern for others* in addition to the two existing foci of giftedness theories—*competence in one's action* and *commitment to task* (Renzulli, 1978; Subotnik et al., 2011, 2018). See Figure 1 for a diagrammatic representation of this conception. However, the focus on developing a *concern for others* is rare and relatively new in the gifted education literature (e.g., Moran, 2020; Renzulli, 2020; Sternberg, 2020). The recent COVID-19 pandemic has revealed the deep interconnectedness of human lives concerning health, economy, and environment, which should no longer allow individuals to think myopically and selfishly about themselves. Instead, they

should have a concern for other humans, human societies, and nature collectively referred to as *concern for others* in this study.

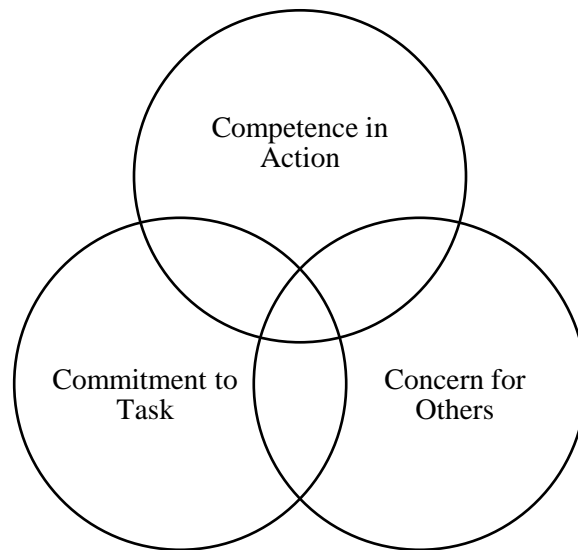


Figure 1. The 3C Conception of Giftedness

Concern for Others as a Multifaceted Construct

Although scholars have argued for developing gifts that would contribute to the well-being and progress of human society as a whole, there seems to be little consensus on what exactly will help educators achieve that goal (Renzulli, 2020). Therefore, in this study, I first attempt to make a case for a multifaceted understanding of developing a concern for others. Specifically, in Chapter 2, I review the extant literature on constructs related to the development of a concern for others with an emphasis on empathy, compassion, and prosocial behavior. Empathy is an individual's ability to mirror emotions and take the perspective of other beings around (Davis, 1980, 1983). Compassion is the capacity to perceive and desire to alleviate the suffering of others (Goetz et al., 2010). Although empathy involves empathic concern (i.e., affective empathy) and perspective taking (i.e., cognitive empathy), compassion is a response given to one's suffering and involves mindful attention to another's suffering, understanding of a shared human experience, and responding with kindness. Prosocial behavior is a broad range of actions intended to benefit people other than oneself—cooperating, sharing, helping, and comforting (Batson, 2011; Caprara et al., 2005). Scholars have theorized empathy and compassion as distinct yet overlapping constructs that serve as strong motivators of prosocial

behavior (Batson, 1991, 2011; Hoffman, 2000; Tomasello et al., 2005). Therefore, to begin with, I theorized *concern for others* as an interplay of *empathy*, *compassion*, and *prosocial behavior*. However, limited research exists examining interrelationships among these constructs, especially in adolescents with intellectual gifts (Spinrad & Eisenberg, 2017). To this end, as outlined in Chapter 3, I began this study with an examination of interrelationships among the three focal variables using correlational analysis. Next, I examined to what extent empathy and compassion predict prosocial behavior in adolescents with intellectual gifts using multiple regression analysis. In these analyses, social connectedness and gender served as two key covariates. An individual's degree of social connectedness may influence their empathy, compassion, and prosocial behavior (Lee & Robbins, 1995), thereby making it a relevant covariate. Also, several researchers (e.g., Caprara et al., 2005; Davis, 1980; Eagly & Crowley, 1986; Eisenberg & Fabes, 1998; Hawk et al., 2013) have reported gender differences in empathy, compassion, and prosocial behavior. Which makes the assessment of gender differences an important endeavor. Controlling for these two covariates can reveal unique relationships between empathy, compassion, and prosocial behavior. In addition, measures of empathy, compassion, and prosocial behavior can be prone to social desirability. Hence, I included social desirability as another covariate in the analysis of interrelationships among the three focal variables of this study. Whether these covariates revealed notable differences in focal outcome variables determined if they were included in further analysis, which concerned the examination of the effectiveness of the intervention.

Intervention to Nurture a Concern for Others

Developing effective interventions to nurture a concern for others and create an understanding of the underlying mechanisms presents a key research area for educators (Spinrad & Eisenberg, 2017). Scholars in the field of social emotional learning (SEL) have developed several frameworks (Collaborative for Academic, Social, and Emotional Learning, 2018; Dusenbury et al., 2019; Payton et al., 2000) to define key competencies of SEL. These frameworks have been used worldwide in schools and have been found effective in positively influencing academic outcomes (Corcoran et al., 2018; Durlak et al., 2011; January et al., 2011; Sklad et al., 2012), school success (Zins et al., 2007), mental wellness (Cook et al., 2015; Taylor et al., 2017), healthy relationships (Crooks et al., 2015; Wolfe et al., 2012), and life success

(Oberle et al., 2016). However, the existing body of SEL research has not yet included samples of adolescents with intellectual gifts. To that end, gifted education seems to have failed to make SEL one of its priorities (Jen, 2017). Moreover, SEL although SEL scholars have built and studied interventions targeting SEL competencies separately (see Durlak et al., 2011, for a review), few, if any, have holistically focused on the development of a concern for others (See Chapter 2, for a detailed review). Hence, the central goal of this study is to develop and examine the effectiveness of an educational intervention designed to nurture a concern for others in adolescents with intellectual gifts. With a team of teachers, I designed a 10-week intervention and implemented it at two research sites affiliated with a community organization in India. These two sites offer unique contexts for this study. One site is a formal school, and the other site is an outside-of-school talent development program, both dedicated to nurturing intellectual giftedness toward a broader goal of creating a positive social change.

I assessed the effectiveness of the intervention in three ways. First, I assessed participants' perceptions of classroom quality, engagement, and motivation in the intervention using quantitative and qualitative methods. Second, I assessed the degree to which participants adhere to the intervention. Third, using a repeated-measures design involving randomly assigned students in treatment and control groups, I examined if participants differed on concern for others assessed using self-report measures of empathy, compassion, and prosocial behavior before, during, and after the intervention. I hypothesized that participation in the intervention will show an increase in concern for others. However, I hypothesized no significant gender differences in the intervention effects. Another important goal of this study was to examine if the intervention effect is sustained for at least three months. In addition, I examined to what extent prosocial behavior measured immediately after the intervention uniquely predicts future prosocial behavior measured three months after the intervention. Finally, I explored participants' experiences, affordances, and challenges in the intervention using interviews with student and teacher participants.

Research Questions

In this study, I collected survey data five times, and T1, T2, T3, T4, and T5 indicate the time points of data collection. Specifically, they indicate time references to pre-intervention (T1), mid-intervention (T2) after five weeks of participation, post-intervention (T3), six-week follow-

up (T4), and three-month follow-up assessments (T5). Next, I present research questions as they align with the key goals of the study. Specifically, the first goal was to examine interrelationships among key outcome variables of having a concern for others, that is, empathy, compassion, and prosocial behavior. The second goal was to assess the effectiveness of the intervention. I divided this goal into three sub-goals, that is, (a) to assess the intervention effects for the treatment and control (delayed treatment) groups, (b) to assess student engagement and adherence to the intervention and its relationship with the outcomes, and (c) to assess the sustainability of the intervention effects and feasibility of the intervention. The research questions as they align with these goals were as follows.

Interrelationships Among Key Outcomes

1. What relationships exist among the key variables, that is, empathy, compassion, and prosocial behavior, in having a concern for others at the first time of data collection (T1)?
 - a. What correlations exist among measured empathy (T1), compassion (T1), prosocial behavior (T1), social connectedness (T1), and social desirability (T1)?
 1. To what extent, if any, do these relationships vary by gender?
 - b. To what extent, if any, do measured empathy (T1) and compassion (T1) predict measured prosocial behavior (T1)?
 1. To what extent, if any, does this relationship vary by gender?

Intervention Effects

2. Does treatment and control group participants' self-reported concern for others change over the time of their participation in the intervention?
 - a. What descriptive patterns exist in the participants' change in self-reported concern for others over the time of their participation in the intervention?
 - b. To what extent does the participants' self-reported concern for others vary over the time of their participation in the intervention?
 - c. To what extent does gender explain the variability in the participants' self-reported concern for others over the time of their participation in the intervention?

Student Engagement in the Intervention and Its Relationship With the Outcomes

3. How do students perceive classroom quality, engagement, and motivation in learning during and after the intervention (T2 & T3, respectively)?
 - a. To what extent do students' perceptions of classroom activities differ from mid-intervention (T2) to post-intervention (T3)?
 - b. Do students' perceptions of classroom activities vary by gender at mid-intervention (T2) or post-intervention (T3)?
4. To what degree do students adhere to the intervention?
 - a. How frequently do students attend the intervention sessions, engage in formal and informal practice at home, and complete journal entries?
 - b. Is adherence associated with residual changes in self-reported empathy, compassion, and prosocial behavior from pre- to post-intervention assessment (T3 – T1)?

Sustainability of the Intervention Effects and Feasibility of the Intervention

5. To what extent does self-reported past prosocial behavior uniquely predict self-reported future prosocial behavior?
 - a. To what extent does post-intervention self-reported prosocial behavior (T3) uniquely predict future self-reported prosocial behavior (T5) beyond post-intervention self-reported empathy and/or compassion (T3)?
6. What are the participants' experiences in the intervention? How do students and teachers perceive the intervention? What affordances and challenges exist in the intervention for its future implementation?

Research Design

To find answers to these research questions, I conducted convergent mixed-methods community-based, participatory research (Creswell & Clark, 2017; Israel et al., 2013) through an equitable partnership with a community organization in a city in western India. In this study, first, I gathered the community's knowledge and values about developing a concern for others. Second, I co-designed the intervention with participating teachers from the two research sites.

The three-month-long intervention included weekly lessons targeting empathy, compassion, and prosocial behavior. These lessons incorporated perspective-taking skills, emotion-identification skills, communication skills, sensitization to social problems and prosocial values, kindness, gratitude, and mindfulness. The teachers used roleplays, discussions, picture interpretation, field visits, and modeling. After adequate co-training and practice within the group, the teachers implemented the intervention with their students, and I assessed the fidelity of implementation.

Next, I assessed the effectiveness of the intervention using an experimental design with equivalent treatment and control (delayed treatment) groups formed through a random assignment of participants. Participants were middle-school students ($n = 130$) from two gifted programs in India, one in a school setting and the other one in an out-of-school talent development program. The two research sites are co-located in a community organization. Students in the treatment group ($n = 64$) participated in the intervention during the first three months of the study. During that time, students in the control group ($n = 66$) received cognitive/art skills training (unrelated to the goals of the study). The control group started receiving delayed treatment immediately after the treatment group finished receiving the intervention. Meanwhile, the treatment group started receiving the same training the control group received previously (i.e., cognitive/art skills). I refer to the *control group* also as the *delayed treatment group* for better clarity. I collected data using existing self-report measures of empathy (Davis, 1980), compassion (Nas & Sak, 2021), and prosocial behavior (Caprara et al., 2005). The empathy scale includes two subscales--perspective taking and empathic concern (Davis, 1980). The compassion scale includes three subscales, that is, compassion for self, compassion for others, and compassion for other living beings (Nas & Sak, 2021). The prosocial behavior scale provides an overall score (Caprara et al., 2005). Using a variety of quantitative analyses such as correlations, multiple regression, and repeated-measures multivariate analysis of variance, I examined interrelationships among focal outcome variables and assessed the effectiveness of the intervention. I explain this in Chapter 3 in greater detail.

Concurrently, I also collected qualitative data from students and teachers through semi-structured interviews, journal entries, and classroom observations. I employed inductive and thematic analysis (Braun & Clarke, 2006; Saldaña, 2015; Strauss & Corbin, 1990; Thomas, 2006) of these data to explore the effectiveness of the intervention, participants' experiences during the intervention, their perceived benefits, affordances, challenges, and recommendations

for improvement. I describe and integrate the quantitative and qualitative results in Chapter 4 and discuss them in Chapter 5.

Significance of the Study

Results from this work can enhance understanding of how adolescents with intellectual gifts can develop a concern for others to actively contribute to human welfare. This research can inform educational interventions and teaching practices that aim to develop a concern for others, especially in gifted education. Moreover, this study can reveal interrelationships among empathy, compassion, and prosocial behavior as they concern this population. Most studies in gifted education and positive psychology have been done on samples from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) nations (Hendriks et al., 2019). However, this study will add a non-WEIRD context to the literature and will confirm or extend the current understanding of this topic. Overall, the results of this study will illuminate the possibility of initiating a new line of research and practice in gifted education that aims to broaden the current focus of the field to include the development of a concern for others and positively contribute to making this world a better place.

CHAPTER 2 LITERATURE REVIEW

In this chapter, I provide a detailed review of existing literature relevant to this study. I begin by presenting a review of studies on empathy, compassion, and prosocial behavior and interventions addressing each of these constructs.

Concern for Others

This study focused on the development of a concern for others in adolescents with intellectual gifts. Concern for others is defined as having concern for other people, society, and nature. Concern for others involves perceiving the needs and challenges of others, developing belongingness with them, experiencing an emotional urge to help, and cultivating motivation to act. Thus, empathy, compassion, and prosocial behavior are focal constructs of concern for others. There are several other important relevant constructs such as social connectedness (Lee & Robbins, 1995), social awareness (Lavalekar, 2001), and social responsibility (Wray-Lake et al., 2016), which are beyond the scope of this study. Few scholars in gifted education and talent development have highlighted the need to develop a concern for others in children with intellectual gifts. Based on Jnana Prabodhini's work in gifted education, Bapat (2013, 2017) and I (Chowkase, 2022; Chowkase & Watve, 2022) have argued that developing one's giftedness must essentially involve the development of competence in their actions; concern for others; and commitment to task and allegiance to ideals. This view puts the development of concern for others at the heart of talent development. Such a view of giftedness transcends the individual and places them as a part of a larger society and humanity.

In a similar view of giftedness, Sternberg and colleagues (Sternberg, 2017, 2020; Sternberg, Chowkase et al., 2021) made a case for transformational giftedness—giftedness that makes a positive, meaningful, and possibly enduring difference to the world. Such a transformation can be self-oriented or other-oriented. Self-realized giftedness refers to “people who have transformed themselves to find a sense of purpose and meaning in their lives, but who have not, at least yet, translated this self-transformation into a transformation that also impacts the world at some level” (Sternberg, Chowkase et al., 2021, p. 7). By contrast, other-realized giftedness refers to “a realization by people who have made a difference to others but who have

not transformed themselves” (p. 7). Further, this view posits that fully transformational giftedness involves transforming the self and others and places significant importance on finding a purpose in life and contributing to the common good (Sternberg, Chowkase et al., 2021). A greater emphasis is on the purpose for which individuals use their gifts, which is a unique new direction in the field of gifted education.

In a recent article, Renzulli (2020) made a call to broaden the conception of giftedness to promote social capital. He defined social capital as “a set of intangible assets that address the collective needs and problems of other individuals and our communities at large” (p. 4). He argued that social capital enhances community life and investing in it can benefit society as a whole. By placing human concerns and the common good at the center of the gifted education discussion, Renzulli drew attention to a pertinent question: How can educators develop social capital? In his Operation Houndstooth framework, Renzulli (2002) identified six categories of co-cognitive factors: optimism, courage, romance with a topic or discipline, sensitivity to human concerns, physical/mental energy, and vision/sense of destiny. In the category of *sensitivity to human concerns*, he placed a focus on moral courage, empathy, and altruism. By showing connections between empathic or altruistic tendencies and helping or prosocial behaviors in the literature, Renzulli highlighted the importance of the development of empathic tendencies to be able to inculcate among children the value of sensitivity to human concerns, which he argued, “must become an imperative” (p. 11). In another article, Renzulli (2012) summarized his thrust on developing social capital as follows:

If we can have an impact on social capital and effective and empathetic leadership, then we will be preparing the kinds of leaders who are as sensitive to human, environmental, and democratic concerns as they are to the traditional materialistic markers of success in today’s world. And the greatest payoff from focusing gifted education on investigative learning and using knowledge wisely will be a dramatic increase in the reservoir of people who will use their talents to create a better world. (p. 158)

Therefore, it is important for gifted education and talent development researchers to rethink the goals of the field and to focus their attention away from the educational models excessively driven by personal achievements to a collective future for the common good of humanity through placing concern for others at the core of the educational model, especially for children with intellectual gifts.

Bapat (2004) posited the development of a prosocial action from a concern for others involves five sequential processes. The first step is to perceive and pay attention to one's surroundings. The second step is to develop an awareness of similarities among and oneness in all human beings. This includes the feelings of commonness in emotions, needs, expectations, and aspirations. The third step is to understand the progress, desperation, and hardships of other individuals and groups of individuals around one. The fourth step is to develop a willingness to experience or empathize with the realities of others. And the fifth step is to find happiness in the progress of others and willingness to act toward their well-being. He argued these processes can be developed in children with intellectual gifts through psychoeducational interventions such as those conducted by Lavalekar (2001).

Lavalekar examined the development of an awareness of social problems in adolescents with intellectual gifts. Through a one-year intervention conducted with 8th-grade students, she found that children with gifts showed superior performance compared to non-identified peers in understanding the nature and scope of social problems, developing positive attitudes toward the problem, and absorbing information about them. However, the two groups did not show a significant difference concerning an urge for action. Results indicated although adolescents with intellectual gifts may have the greater intellectual prowess to understand social problems, they may not have a stronger urge for prosocial action when compared to their peers. This finding justifies the need to study processes by which adolescents can develop more prosocial behavior.

Scholars have theorized empathy and compassion as distinct yet overlapping constructs that serve as strong motivators of prosocial behavior (Batson, 1991, 2011; Hoffman, 2000; Tomasello et al., 2005). Therefore, I theorized *concern for others* as largely a complex manifestation of three human tendencies: *empathy*, *compassion*, and *prosocial behaviors*. However, limited research exists examining interrelationships among and the development of empathy, compassion, and prosocial behaviors in adolescents with gifts, which is the primary goal of this study.

Empathy

What is Empathy?

Empathy refers to an individual's ability to mirror the emotions and take the perspective of other beings around (Davis, 1980, 1983). In a recent incident in Aledo, Texas, the U.S., a group of ninth-graders at a predominantly White, affluent school were reported to set prices for students of color in a Snapchat group message called "Slave Trade" (Pietch, 2021). This incident epitomizes a lack of empathy among adolescents involved in this case in which a blatant disregard for concern for and well-being of others is evident. Empathy has emotive and cognitive aspects; therefore, it is often categorized into affective empathy (or empathic concern) and cognitive empathy (or perspective-taking). Davis (1983) defined empathic concern (EC) as feelings of warmth, compassion, and concern for others. Similarly, he defined perspective-taking (PT) as the tendency to adopt the point of view of other people in everyday life.

Empathy is a multifaced psychological construct. Social neuroscientists Zaki and Ochsner (2012) defined empathy as the ability and tendency to share and understand the internal states of others. They proposed there are three major facets of empathy. First is the tendency to take on, resonate with, or share the emotions of others, also known as experience sharing. Second is the ability to explicitly reason and draw inferences about the mental states of others, also known as mentalizing. Experience sharing and mentalizing are similar to affective and cognitive empathy, respectively. Further, individuals use experiencing and/or mentalizing to help others, which is the third facet of empathy, also known as prosocial motivation (Batson, 2011; Zaki & Ochsner, 2012). This view of empathy extended the view by Davis (1980, 1983) and added a dimension of motivation to empathy.

Experience sharing and mentalizing exhibit very different neural profiles (Zaki & Ochsner, 2016). The human brain processes the empathic subprocess of experience sharing using so-called mirror neurons (di Pellegrino et al., 1992; Rizzolatti & Sinigaglia, 2010) through a mechanism known as neural resonance that occurs in regions associated with sensorimotor, processing, visceral sensation, and affect. Neural resonance is the "tendency to engage overlapping neural systems when perceivers experience a given internal state and when they observe (or know that) targets (are) experiencing that same state" (Zaki & Ochsner, 2012, p. 675). However, different regions of the human brain are being used while mentalizing such as

midline and superior temporal structures broadly involved in self-projection. The existence of almost nonoverlapping brain systems for experience sharing and mentalizing, and the fact that humans holistically experience empathy, imply empathy likely involves a deeply interconnected deployment of empathic subprocesses (Zaki & Ochsner, 2016). Therefore, empathy interventions are better designed with a focus on both subprocesses, that is, experience sharing and mentalizing.

Individual differences exist in empathy, which is why some people are more empathic than others. An example is individuals with autism spectrum disorders show a reduced engagement of brain areas associated with empathy (Philip et al., 2012) and exhibit lesser scores on clinical measures (Dapretto et al., 2006). Empathy is also situational, that is, some situations are more likely to arouse empathic subprocesses than others (Zaki & Ochsner, 2012). Therefore, it is important to consider intraindividual and situational aspects of empathy in its assessment and development.

Why is Empathy Important?

Empathy has many benefits for perceivers and those being perceived (targets). More empathetic people are more likely to help others, despite any costs they may incur to their self-interest (Batson, 1991, 2011). Empathy can help individuals engage in *support provision* such as spending money on others and providing emotional support when in distress (Batson, 2011; Davis, 1994; Morelli, Lieberman et al., 2015). Empathy can have lasting effects on the well-being of those providing support to others (Morelli, Lee et al., 2015). Empathy can also help human societies in the global fight against racism and prejudice (Todd et al., 2011).

Moreover, empathy can help an individual foster and maintain close relationships (Davis & Oathout, 1987; Morelli, Lieberman et al., 2015). In a study with first-year undergraduates, Morelli and colleagues (2017) found empathic individuals are sought out for trust and support; whereas those who radiate positive emotions are sought out for excitement and fun. Empathy is also a moral force; it can provide emotional meaning to moral actions (Zaki, 2018). That is, empathy-based morality can have a multitude of benefits over actions driven only by moral principles.

More broadly, empathy is important to social cohesion. Former President of the United States, Barack Obama (2006), often made references to an empathy deficit in American society.

To that end, Konrath and colleagues (2011) studied changes in empathy in American college students over three decades. Their findings revealed a sharp drop in empathic concern and perspective-taking. This decline was found to be more pronounced in samples of college students after 2000.

In summary, rising political polarization worldwide (Carothers & O'Donohue, 2019; Gomez, 2021; Pew Research Center, 2014; Prior, 2013), the surge of bullying among adolescents (Wang et al., 2009) as characterized by the Texas incident at the beginning of this chapter, the distress caused by the current COVID-19 pandemic across the globe (Galea, 2020), and many other developments in the world warrant educators' attention to undertaking efforts to build more empathetic future citizens. These efforts are especially needed in gifted education and talent development fields as individuals with gifts and talents are more likely to become future leaders—from local to global levels—and have an influence on the future of many others around them.

Empathy Assessments

In the past 50 years, psychometricians have developed several self-report measures of empathy, which is the most popular way to assess empathy. One of the most widely used instruments of empathy is the Interpersonal Reactivity Index (IRI; Davis, 1980, 1983; 28 items), which measures empathy on four subscales—perspective taking, empathic concern, personal distress, and fantasy. Perspective taking and empathic concern (7 items each) subscales are closely related to cognitive and affective empathy, respectively, and are commonly used in empathy research.

The Toronto Empathy Questionnaire (TEQ; Spreng et al., 2009) is a 16-item, single-factor measure of affective empathy. However, some of the items of TEQ tap altruism (items 5, 14, and 16) and prosocial behavior (item 13) (Spreng et al., 2009). Although the scores on affective empathy on TEQ have been found to correlate with cognitive empathy, a scale of affective empathy cannot fully measure the multifaceted nature of empathy as affective and cognitive empathy exhibit largely non-overlapping neural systems (Zaki & Ochesner, 2016).

Another empathy measure is The Questionnaire of Cognitive and Affective Empathy (QCAE; Reniers et al., 2011). QCAE is a 31-item, two-factor (cognitive and affective empathy) instrument that measures five different empathy components—perspective-taking, online

simulation, emotion contagion, proximal responsivity, and peripheral responsivity. Other measures of empathy include the Hogan Empathy Scale (HES; Hogan, 1969; 15 items), Balanced Emotional Empathy Scale (BEES; Mehrabian, 2000; 12 items), Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004; 40-items), and Basic Empathy Scale (BES; Jolliffe & Farrington, 2006; 20 items). However, besides measuring affective and cognitive empathy, IRI by Davis (1980) has the benefit of brevity. I elaborate on the psychometric properties of IRI in Chapter 3.

Empathy-Building Interventions

Empathic capacities develop during childhood and grow in adolescence (Davis, 1994; Hoffman, 1984, 2008). As children mature cognitively, they develop perspective-taking, self-other distinction, and regulation of negative emotion (Eisenberg, 2000; Hoffman, 2008). Further, engaging in perspective-taking increases empathic concern (Batson, Early et al., 1997; Hoffman, 2008).

Empathy may be a stable trait concerning personality differences. For example, in several studies, researchers (e.g., Davis, 1980, 1983; Hawk et al., 2013) have found gender differences in empathy across stages of development with women showing greater levels of empathy than men. However, additional evidence exists to show empathic responses can be situational and susceptible to change across contexts (Ickes et al., 2000; Klein & Hodges, 2001; Thomas & Maio, 2008). Findings of several intervention studies indicate empathy is malleable and can be developed. However, notably, the strength of the situation, that is, its power to invoke an emotional response from observers, is an important consideration in developing empathic responses (Davis & Begovic, 2014). For example, a face-to-face exposure to a distressing situation involving helpless and blameless targets who are also similar to the observer (observer similarity) is likely to count as a strong situation and may engender a stronger empathic concern compared to a weak situation involving indirect exposure for dissimilar targets (Davis & Begovic, 2014).

Empathy consists of cognitive, affective, motivational, and behavioral outcomes. One common cognitive outcome of empathy interventions includes *interpersonal accuracy*, that is, developing an accurate understanding of the feelings of others and the ability to distinguish between various emotions and their expressions (Davis, 1994). This includes, for example, the

ability to gauge if a friend is experiencing sadness, fear, or anger. Affective outcomes of empathy include *parallel emotions* (to feel the same emotion as others) and *compassion for others* or *empathic concern*. Examples include experiencing happiness when your classmate is happy about winning a competition or feeling distressed when witnessing the suffering of others in a pandemic.

Motivational outcomes of empathy may include forgiveness and valuing the other person's perspectives (Davis, 1994). Last, behavioral outcomes of empathy include enhanced *prosocial behavior*, reduced *aggression behavior*, enhanced *social relationships* (e.g., providing social support to friends and family), and *communication* of empathy. The wide variety of empathy outcomes indicates empathy interventions are likely to have diverse and multiple aims; however, by nature, these interventions are most similar in one aspect, that is, perspective-taking or developing an understanding of the thinking and feeling of others (Davis & Begovic, 2014).

Davis and Begovic (2014) conducted a review of empathy interventions and categorized interventions into four techniques: (a) perspective taking, (b) instructional approaches, (c) the use of audio/visual media, and (d) skills training. In the first category, researchers have used two kinds of perspective-taking interventions—direct and indirect perspective-taking. Direct perspective-taking involves active role-playing aimed at experiencing, at least to some extent, the real experience of target populations. For example, in several studies with medical students, researchers exposed the participants to the actual sensory experience of elderly people (Pacala et al., 1995) or schizophrenic patients (Bunn & Terpstra, 2009). Some others had their participants stay overnight at the hospital to experience a life of an admitted patient (Wilkes et al., 2002). Another form in which role-playing has been used to enhance empathy for a target population (e.g., a rival group) is through letter writing. For example, in a study with Arab students, participants were asked to respond to a letter by a Jewish mother who had lost her child in a terrorist attack (Shechtman & Tanus, 2006). Direct perspective-taking interventions are popular in empathy interventions and have been found to be generally effective when conducted rigorously such as through a 10-week program (Davis & Begovic, 2014).

Contrary to direct interventions, indirect perspective-taking interventions focus on instructing or encouraging the participants to imagine the thoughts, feelings, or situations of the target. Researchers have conducted several studies to encourage perspective-taking for stigmatized groups such as AIDS patients, the homeless, murderers, jailed drug addicts, and

sexually abused individuals (Batson et al., 2002; Batson, Polycarpou et al., 1997; Lee, 1987). Two common methods of indirect perspective taking are *Imagine Target* and *Imagine Self* instruction sets. Imagine Target instructions encourage the participants to think about the target's current thinking and feeling. On the other hand, Imagine Self instructions ask the participants to think of themselves if they were in the situation of their targets. Although imagining targets may invoke feelings of sympathy, imagining the self is more likely to invoke personal distress (Batson, 2009). Although instructional sets are most popular in perspective-taking interventions, other methods like asking participants to imagine and write a journal entry about a day in another person's life are also used.

The second category of interventions identified by Davis and Begovic (2014) focuses on instructional approaches. Lack of empathy can emerge from a lack of information about others and their situation. Major instructional approaches are didactic instruction, discussion groups, and activity-based learning. Didactic instruction involves straightforward classroom lectures, in which discussion group activities consist of topic discussions, brainstorming activities, case-study discussions, and empathetic listening (e.g., Garaigordobil, 2004; Malhotra & Liyanage, 2005). Activity-based learning goes beyond listening and discussing by engaging participants in doing activities about the topic, which is more likely to engage them deeply. Some examples include collaborative group work involving decision-making (e.g., Garaigordobil, 2004), interviewing members of out-groups/rival groups and presenting their life stories (e.g., Bar-On & Kassem, 2004), and small group discussion on an imaginative situation resembling the real-life experiences of homosexuals (Hodson et al., 2009). However, most interventions typically use a mix of these instructional strategies to encourage the active participation of participants while also conveying information on the topic.

In the third category of empathy interventions (Davis & Begovic, 2014), educators have effectively used realistic and fictional audiovisual material from popular entertainment sources such as movie clips (e.g., Shechtman & Tanus, 2006). Audiovisual materials are known to be dramatic, narrative, and hence, engaging. Some interventions have employed videos or audiotapes of victims describing their firsthand experiences. Other interventions have used material from professionally produced television programs and entertainment movies.

The fourth category of empathy interventions (Davis & Begovic, 2014) takes a skills-training approach, which focuses less on experiencing empathy and more on expressing or

communicating empathy from the observer to the target. Three central skills are observing, listening, and responding. Specifically, observation skills consist of interpreting facial expressions, gestures, and the underlying meaning behind the target's words. Listening skills include non-judgmental listening and showing interest through verbal and non-verbal behaviors. Responding skills consist of repeating or paraphrasing statements as a way of verifying understanding (e.g., "If I am understanding this correctly, are you saying that...") and validating the target's statements (e.g., "I hear you"). Analyzing silent videos of non-verbal communication and several theatre games have been used to teach empathic communication skills (e.g., voice tone, body movements). The skills-training approach allows facilitators to focus on a specific set of skills they aim to develop; however, the central focus is not much on building empathy as such but on communicating empathy to the target. Therefore, it is only logical for educators to include the experiencing and expressing parts of empathy-building together in empathy interventions.

Similar to Davis and Begovic (2014), Weisz and Zaki (2017) reviewed existing empathy-building interventions and found most interventions focused on developing an individual's ability to empathize. They defined empathetic responses as the capacity to experience empathy (e.g., perspective-taking) or to express empathy to others. However, another less explored approach to empathy-building focuses on a motivated account of empathy (Zaki, 2014), that is, developing people's motivation to empathize (Weisz & Zaki, 2017). In that sense, empathy is an individual's choice. Although certain forces may act as drivers of empathy (i.e., approach motives), certain other forces such as goal conflict, perceived pain, and perceived cost of empathizing, may discourage empathizing (i.e., avoidance motives). In acts like bullying or inter-group conflict, individuals may fail to empathize not because of a lack of empathy but because of a lack of willingness to empathize. Therefore, Weisz and Zaki (2017) suggested integrating motive-based approaches with the traditional experience and expression-based empathy interventions. They suggested targeting participants' implicit beliefs about the malleability of empathy; highlighting empathy as socially desirable and valued; emphasizing personal benefits of empathy; addressing concerns about the affective costs of empathy; and showing how empathy may facilitate their existing goals (goal relevance).

In a study with first-year college students, Weisz and colleagues (2020) implemented empathy interventions to encourage empathy by addressing empathic motives, influencing

mindsets, and social norms. The mindset intervention focused on the belief that empathy is not completely a stable trait and can grow over time with effort. The social norm intervention stressed how most people value and practice empathy. Each intervention and control condition included three one-hour lab sessions consisting of two letter-writing sessions and a speech-drafting session and an 8-week follow-up assessment. The findings of this study suggested that motive-based interventions may effectively produce long-term changes in the malleability of empathy and accuracy while evaluating the positive emotions of others. Although the findings highlight empathy interventions should account for motivation, the authors called for future research in exploring how motive-based interventions can be integrated with experience- and expression-based interventions to build empathy more effectively.

I conclude this section by reviewing the effectiveness of empathy-building interventions. A recent meta-analysis of 18 randomized control trials of empathy training revealed empathy interventions were effective, overall, with a medium effect (Hedges's $g = 0.51$ to 0.73 ; Teding van Berkhout & Malouff, 2016). These authors found studies using objective measures (e.g., ratings by independent others) showed significantly larger effect sizes than those using self-report. However, the six studies that used self-report measures reported effect sizes (Hedges's g) ranging from 0.118 to $.824$, indicating the usefulness of self-report measures. Moreover, self-report measures have an additional benefit when used with a large group such as a classroom.

Further, Teding van Berkhout and Malouff (2016) found non-significant associations between effect size and hours of training or time between pre- and post-assessments. Studies with health professionals and university students revealed significantly larger effect sizes than those with youth or other adult groups. However, 18 is a small sample size limiting the power of the meta-analysis to detect small effects. Also, only four of the 18 studies involved youth, and three of those were youth with special needs. Neither these studies involved youth with intellectual gifts nor were the participants of these studies representative of a broader range of youth. To that end, no recent reviews exist on the effectiveness of empathy interventions for children and adolescents, making it difficult to assess the effectiveness of empathy interventions for this population. This study may add to the limited literature on the effectiveness of empathy interventions for youth and especially youth with intellectual gifts.

Davis and Begovic (2014) summarized important findings on the effectiveness of interventions. First, empathy interventions were often effective; however, the interventions have

shown mixed levels of effectiveness. Longer-term interventions consisting of multiple sessions (e.g., 8 weeks or more) were more successful than one-time interventions. Interventions targeting specific empathy skills were typically more effective than general all-encompassing interventions; however, this is less helpful as most interventions implement holistic approaches. And last, little is known about the longevity of the effects of empathy interventions as almost all interventions only examined immediate post-intervention effects. Therefore, a clear gap exists in assessing the long-term effects of empathy-building interventions. Although Davis and Begovic (2014) did not define the duration for long-term effects, they indicated the need to examine follow-up data gathered after the intervention. To that end, one of the goals of this study is to assess the effectiveness of the intervention after three months.

Based on this summary of findings on the effectiveness of empathy interventions, I decided to develop a 10-session intervention consisting of weekly one-hour sessions and a mix of empathy-building inputs targeting participants' cognitive, affective, motivational, and behavioral outcomes. Like most other intervention studies reviewed earlier, the intervention in this study consisted of multiple instructional techniques (e.g., role-playing, discussion, didactic instruction, home practice, skill training) rather than relying on any one technique.

Compassion

What is Compassion?

Compassion is a mental state or an orientation toward the suffering of others. It is the capacity to perceive and desire to alleviate the suffering of others (Goetz et al., 2010). Compassion is state-like (i.e., episodic) and trait-like (i.e., enduring) (Goetz et al., 2010). Many scholars interchangeably use the terms *empathy* and *compassion for others* (Batson, 1991); however, such use is incorrect. For example, Davis (1994) in his model of empathy, listed compassion for others as an affective outcome of empathy. The feeling of compassion for others has also been called empathic concern (Davis, 1980) and sympathy (Wispé, 1986). Yet others consider empathy as a part of compassion, largely because compassion involves taking an action toward the alleviation of the suffering of others beyond experiencing empathic concern (Jinpa, 2014). Although compassion and empathy seem to share evolutionary roots, they are two related yet different constructs (Zaki, 2014).

Compassion is categorized into four parts: (a) cognitive, (b) affective, (c) intentional, and (d) motivational (Jazaieri, 2018). The cognitive aspect of compassion relates to bringing awareness or attention to recognizing there is suffering. The affective aspect of compassion refers to feeling emotionally moved by that suffering. The intentional aspect of compassion deals with wishing for relief from suffering. And the motivational aspect of compassion relates to a readiness to take action to relieve that suffering. Based on a review of compassion definitions, Strauss and colleagues (2016) proposed a five-element compassion definition: (a) recognizing suffering, (b) understanding the universality of suffering in human experience, (c) feeling empathy for the person suffering and connecting with the distress (emotional resonance), (d) tolerating uncomfortable feelings aroused in response to the suffering person (e.g. distress, anger, fear) so remaining open to and accepting of the person suffering, and (e) motivation to act/acting to alleviate suffering.

Most compassion research today emerges from the ancient literature and practices in Buddhist philosophy (Jinpa, 2015; Lavelle, 2017). From a Buddhist perspective, compassion is an extension of wisdom that requires mindfully engaging with the suffering of others, experiencing a kind response to their suffering, and recognizing human interconnectedness that leads to a sincere yearning to lessen suffering (Jinpa, 2015; Lavelle, 2017; Neff, 2003; Pommier et al., 2020). In this view, self- and other-compassion have three subcomponents: Kindness, common humanity, and mindfulness (Neff, 2003; Pommier et al., 2020). Kindness means being caring toward and concerned for others who are suffering, accompanied by a desire to support them. Common humanity emphasizes recognizing the oneness of all human experiences--hardship and a sense of connection--in response to suffering. Mindfulness is the awareness of the present moment; a type of balanced awareness of the pain of others, willingness to listen, and pay attention to others when they are suffering.

Although empathy involves experiencing a range of emotions, compassion is related to specific negative emotional states such as pain (Weisz & Zaki, 2017). However, compassion is different from pity. Pity involves feeling concern for someone considered inferior to the self (Fiske et al., 2002). Also, unlike empathy, compassion does not necessitate a perceiver to vicariously share the target's feelings (Weisz & Zaki, 2017). Compassion is also different from love. Compassion is a quick and appropriate response to signals of suffering and does not necessarily accompany love, although it may catalyze love (Goetz et al., 2010). Compassion is a

meaningful cognitive, affective, intentional, and motivated response to the suffering of others. Further, some scholars in the West believe though compassion is other-oriented, it is not purely unconditional or unbound; it involves cost-benefit analyses (Henrich, 2004). Buddhist scholars disagree with this view and suggest practitioners can develop unlimited or unconditional compassion (Lavelle, 2017). Also, compassion involves distinguishing between the self and others (Batson, 1991), gauging the target's deservingness of help, and the perceiver's perceptions of self-efficacy in helping the target (Goetz et al., 2010). It is communicated through non-verbal expressions, touch, and voice.

Why is Compassion Important?

Like empathy, compassion motivates altruistic and caring behavior, concern for others, and a desire to alleviate the suffering of others (Batson, 1991). Compassion is also a strong motivator of prosocial behavior, and even short-term compassion training can influence prosocial behavior toward strangers (Leiberg et al., 2011). Compassion is also a predictor of moral judgments and harm-reducing actions (Haidt, 2003; McCullough et al., 2001).

Besides prosocial benefits, compassion can have several intrapersonal benefits for mental and physical health. Compassion training can be effective in reducing self-criticism, depression, and anxiety and increasing self-soothing abilities, feelings of warmth (Gilbert & Procter, 2006); warm and positive feelings for others and social connectedness (Hutcherson et al., 2008); positive mood and life satisfaction (Fredrickson et al., 2008); and sustained gains in happiness and self-esteem (Mongrain et al., 2011).

Moreover, experiencing compassion can fuel heroism in people, which can lead to social transformation (Zimbardo et al., 2017). Heroism is taking compassionate action when it involves risk to oneself. Experiencing compassion can provide the necessary moral courage needed for voluntary heroic actions in service to others in need. Compassion, when transformed into the social action of heroism such as in opposing police brutalities and racial discrimination in the United States, or in opposing religious fundamentalism and promoting girl-child education in Afghanistan, has the potential to combat the societal evils and bring about a possibly enduring positive change in the world.

Experiencing compassion, unlike empathy, does not necessitate an observer to have the same (or nearly the same) emotional experience as what the target is feeling or expected to feel

(Weisz & Zaki, 2017). Compassion emerges from seeing suffering in the world. Therefore, in challenging times such as those presented by social injustice, experiencing compassion can motivate people to work toward the alleviation of suffering without themselves having to experience it. Therefore, scholars argue that humans today need compassion more than empathy to navigate many of the issues in the world they do not directly face (Galea, 2020). Compassion is key to improving healthcare, governance, education, corporations, and almost every unit of life including families.

Compassion Assessments

Unlike empathy assessments, which have existed for over 50 years, compassion assessments have only emerged recently. Psychometricians have developed few self-report measures of compassion for adults and even fewer for children and adolescents. Strauss and colleagues (2016) recently reviewed existing compassion measures and concluded that “no scale exists that comprehensively measures compassion and provides scores with acceptable levels of reliability and validity” (p. 25). This is a serious limitation in compassion research; however, this topic is gaining increasing attention from researchers in several countries.

One recent measure of compassion for others is the Compassion Scale (Pommier et al., 2020), which is based on Neff’s (2003) model of self-compassion. This 16-item scale measures kindness, common humanity, mindfulness, and indifference on a 5-point scale. Each subscale has 4 items. This scale was designed using the Buddhist perspective of compassion. However, the scale has not yet been validated with youth, and therefore, it is not known if the scale is appropriate to be used with adolescents (K. Neff, personal communication, April 13, 2021). Also, Neff and Germer (2013) found a ceiling effect on compassion scores in the uses of the previous version of this scale.

Nas and Sak (2021) recently developed a measure of compassion specifically for children. This 20-item instrument measures compassion on three dimensions: (a) compassion toward other people (9 items), (b) compassion toward oneself (5 items), and (c) compassion toward other living things (6 items). Unlike the Compassion Scale by Pommier and colleagues, this scale measures compassion toward self and others. I used the scale by Nas and Sak (2021) in this study for its appropriateness for adolescents (ages 12-18). However, the scale has not yet been validated on samples outside of Turkey, which is a limitation. Researchers are currently

using this scale in some studies; however, those are yet to be published (R. Sak, personal communication, April 15, 2021). Also, Nas, one of the developers of the instrument, is currently using the scale in his dissertation research on compassion development in 8th-grade students (R. Sak, personal communication, April 15, 2021). I elaborate on the psychometric properties of this scale in Chapter 3. This scale is new and underused, which is a limitation of my study. However, other existing compassion instruments have only been used with adults and, therefore, may be inappropriate to be used with adolescents.

Further, based on a review of existing compassion-based interventions, Kirby (2017) recommended including qualitative outcomes in the measurement of compassion interventions by examining qualitative feedback regarding experience, acceptability, and barriers to specific strategies. Jazaieri (2018) made a similar recommendation to use a rigorous multi-method approach involving quantitative and qualitative data. This justifies the use of a mixed-methods research design in this study.

Compassion-Building Interventions

Although some debate exists on whether compassion is an innate trait or if it can be developed, there is ample evidence showing compassion, like empathy, can be cultivated (Richardson et al., 2015). Adolescence is arguably the most opportune time for compassion-building interventions (Jazaieri, 2018) given the neural and psychological plasticity in this developmental stage (Roeser & Pinela, 2014). Moreover, adolescence is often marked by self-criticism, feelings of isolation, and over-identification with emotions, indicating the most need for self-compassion during this time (Neff, 2003). Further, compassion education is particularly important during adolescence given the developmental need for purpose and self-transcendence (Roeser & Pinela, 2014).

Compassion researchers and practitioners have developed several compassion-building interventions across the globe. Followers of Buddhist traditions have for centuries emphasized a regular practice of mindfulness and compassion meditation (Lavelle, 2017). Yet others have focused on compassion modules involving knowledge and training of compassion. Compassion interventions are most popular in medical training, especially with trainee doctors and nurses. The aim of these interventions is typically to develop healthcare professionals who act compassionately toward their patients. However, increased demand for compassion interventions

in other settings exists, such as for personal wellbeing (Kirby, 2017), in education (Jazaieri, 2018; Welford & Langmead, 2015), and in organizational workplaces (Kanov et al., 2014).

In a study with Australian nursing students, Hofmeyer and colleagues (2016, 2018) implemented an online learning module of compassion designed around eight key questions and evidence-based responses to them. These questions were about understanding compassion and its importance, barriers to compassion, practicing compassion, leading with compassion, understanding self-compassion and self-care, compassion fatigue, and cultivating resilience. Each session consisted of reflective questions aimed at raising participants' awareness. Reading materials were provided at the end of each session. Participants shared reflections on module topics in tutorials or the online discussion forum. A video on compassionate care was also included. Post-intervention responses indicated a deeper understanding of the topics.

Another widely used approach is called Cognitive-Based Compassion Training (CBCT), a secularized form of compassion meditation derived from the Tibetan Buddhist tradition of *lojong* (Lavelle, 2017; Negi, 2009). *Lojong* refers to systematically conducted mind training or thought transformation from self-centeredness to enlightened other-centeredness and places a focus on the cultivation of compassion, love, forbearance, and perseverance (Jinpa, 2014). CBCT incorporates intellectual analysis into the meditation session to bring a deeper awareness of one's perspective on a particular topic. Using this contemplative pedagogy, Ozawa-de Silva and Dodson-Lavelle (2011) developed a curriculum for elementary school children and adolescent youth consisting of practices of self-compassion, equanimity, empathy, and engaged compassion for others.

Basic training in mindfulness techniques or concentrative meditation is essential to CBCT; however, CBCT goes beyond that. Although mindfulness-based meditation interventions (e.g., Mindfulness-Based Cognitive Therapy or MBCT; Teasdale et al., 2000) focus on changing one's relationship to thoughts, compassion training requires the practitioner to release resentment, hostility, and indifference toward others and develop a deep feeling of affection for and positive connection with others. Therefore, CBCT protocols begin with developing attention and stability of mind using breath-focused meditation, followed by cultivating insight into the nature of mental experience, cultivating self-compassion, developing equanimity, developing appreciation and gratitude for others, developing affection and empathy, realizing wishing and aspirational compassion, and finally, realizing active compassion for others (Negi, 2009; Ozawa-

de Silva & Dodson-Lavelle, 2011). Equanimity refers to impartiality, that is, an awareness that everyone is alike in seeking happiness and avoiding unhappiness. Further, developing appreciation and affection are essential for fostering one's concern for the welfare of others (Lavelle, 2017). The process of developing appreciation involves practitioners reflecting on the kindness and generosity of countless others, including ways in which their existence is dependent on the support of other people. Thus, reflections on gratitude and interdependence are central to CBCT to increase a sense of affection and concern for others. CBCT programs include the aforementioned eight steps, and participants are assigned weekly home practice assignments around meditative techniques taught every week.

The CBCT for pre-adolescents program (ages 5-8) was a surprising success in which children were engaged in an 8-week group intervention focused on the eight topics mentioned above (Ozawa-de Silva & Dodson-Lavelle, 2011). A typical 30-minute session, twice a week, incorporated into the school's timetable began with a short meditation practice and a brief introduction to the week's topic, followed by a relevant story, game, or activity. In the end, children were able to grasp the concepts well when presented in age-appropriate ways using stories, plays, and games rather than plain lecturing. Similarly, researchers have effectively used CBCT with several different groups of participants such as adolescents in foster care (Reddy et al., 2013), cancer survivors (Dodds et al, 2015), and African American suicide attempters (LoParo et al., 2018).

Another similar approach to compassion building that stems from the Tibetan Buddhist contemplative traditions is known as Compassion Cultivation Training Program (CCT; Jazaieri et al., 2013; Jinpa, 2010). CCT cultivates compassion through six steps typically taught in nine weeks: (a) focusing and settling the mind; (b) cultivating loving-kindness and compassion for a loved one; (c) cultivating loving-kindness and compassion for oneself; (d) cultivating compassion for others through a recognition of common humanity; (e) cultivating compassion for all beings; and (f) developing active compassion through the practice of *tonglen* or sending-receiving (Jinpa, 2010). Like CBCT, CCT aims at building compassion through a process of reasoning and analytical meditation. Analytical meditation-based practices of compassion such as CBCT and CCT may be more suited to adolescents with intellectual gifts because of their cerebral prowess. However, the use of CBCT or CCT has not yet been empirically studied with adolescents with intellectual gifts. In this study, I incorporated elements of CBCT and CCT,

specifically the practice of analytical meditation on topics of kindness, gratitude, common humanity, interdependence and connectedness, and impartiality.

Yet another popular approach stemming from Buddhist traditions is called the Loving-Kindness Meditation program (LKM; Shonin et al., 2015). In contrast to the cognitive approach of CBCT, LKM takes an affective approach focusing on love and affection. Practitioners of this approach generate the wish that others be happy and have the causes of happiness. This affection is then extended outwardly to encompass ever-broadening circles of individuals (Lavelle, 2017; Ozawa-de Silva & Dodson-Lavelle, 2011). Although some LKM programs may teach compassion, their direct focus is on loving-kindness, which is different from compassion in the sense compassion practices focus on relieving the suffering of others (Lavelle, 2017). Therefore, LKM programs do not seem directly helpful in compassion-building interventions.

Jazaieri (2018) made four recommendations for teachers of adolescents. These are listening compassionately to others, being with suffering, having compassion for oneself, and having loving-kindness for oneself. According to Jazaieri's (2018) review, compassionate listening exercises can be conducted in dyads focusing on attentive and non-judgmental listening. Further, interventions can include home-based or community-based exercises to be with someone who is suffering. This direct experience with suffering can help students develop compassion for others. Helping adolescents overcome self-criticism by using self-compassion techniques like the common humanity approach can be greatly useful. Finally, practicing loving-kindness can help adolescents to think about the other side of the coin, the brighter one, and help them build compassion for themselves and others (Jazaieri, 2018).

A recent meta-analysis conducted by Kirby and colleagues (2015) on compassion-based interventions that used randomized controlled trials (RCTs) of 12 studies conducted between 2005-2015 revealed significant short-term moderate effect sizes for compassion ($d = .559$), self-compassion ($d = .691$), mindfulness ($d = .525$), reducing depression ($d = .656$) and anxiety ($d = .547$), and life satisfaction and happiness ($d = .540$). A follow-up review of compassion interventions conducted by Kirby (2017) revealed increased use of CCT in many countries including the United States, Australia, the United Kingdom, and Chile. Although favorable evidence exists regarding the effectiveness of CCT in initial studies, more conclusive evidence is needed, especially regarding the long-term outcomes of CCT. Similarly, CBCT has been gaining popularity and is one of the more evaluated compassion-building interventions. Moreover,

CBCT is the only compassion intervention that has been examined with adolescents (i.e., Reddy et al., 2013). However, similar to CCT, the long-term effects of CBCT are understudied, indicating the need to collect follow-up data on these interventions.

Based on the review of currently available compassion-based interventions, Kirby (2017) concluded at least eight different compassion-based interventions exist. Although these interventions vary, several similarities exist among them. All interventions have influences of Tibetan Buddhism, but they are designed to be secular in approach by eliminating religious terminologies and soteriological aims. Clearly, these interventions have influences of traditional Buddhist and modern Western worldviews. Further similarities across the interventions include a focus on mindfulness-based training, the inclusion of loving-kindness meditation or compassion meditation in the program, and incorporating some components of psychoeducation in which reasoning is provided for compassion training. Three other similarities include the inclusion of active experiential components, such as opportunities for completing and rehearsing compassion strategies; home-based practice assignments; and the ability to be delivered in a group format. Therefore, I incorporated components of active experiences and home practice in my study. Moreover, I designed the intervention to be delivered in a group format. I also placed a focus on mindfulness and meditation exercises. Contemplative exercises in the classroom will equip the participants to learn the fundamentals of mindfulness and compassion, and home exercises will enable participants to practice the learned compassion skills.

A review of compassion interventions in education by Jazaieri (2018) revealed most compassion interventions with adolescents consisted of just one form of compassion, that is, self-compassion. Studies are needed to examine other forms of compassion such as compassion for others (Jazaieri, 2018), which was one of the goals of this study.

Prosocial Behavior

What is Prosocial Behavior?

Prosocial behavior depicts a broad range of actions intended to benefit one or more people other than oneself—behaviors such as cooperating, sharing, helping, and comforting (Batson, 2011; Caprara et al., 2005). Prosocial behavior emerges from self-transcendence values—values oriented toward the concern for the welfare of others (Schwartz, 1992, 1994,

2007) and communal orientation—an interpersonal proclivity that emphasizes closeness, interdependence, and personal responsibility for the welfare of others (Clark & Mills, 1994). Schwartz (1992, 1994) further classified self-transcendence values into two subcategories. They are values of universalism—understanding, appreciation, tolerance, and protection of the welfare of all people and values of benevolence—preservation and enhancement of the welfare of close persons.

Some scholars have, for a long time, construed humans as intrinsically selfish beings. That is, these scholars posit any prosocial behavior requires humans to govern their basic selfish instincts through effortful control (Stevens & Hauser, 2004). However, more recent research from cognitive neuroscience indicated prosocial behavior appears to stem from intuitive, reflexive, and automatic processes (Zaki & Mitchell, 2013). That is, prosocial behavior represents an impulse of its own and not just the ability to control selfish impulses.

The term altruism is often used to refer to a subset of prosocial behaviors—for example, helping when there are no obvious rewards. However, such usage is incorrect because altruism is a motivational concept. Altruism is the motivation to increase another person’s welfare even at the cost to self (MacIntyre, 1967). Thus, altruism contrasts with egoism, which is characterized by selfish motives. Although altruism and prosocial behavior are related, altruism may not always lead an individual to engage in prosocial behavior (Batson & Powell, 2003). Similarly, prosocial behavior may not always be altruistic; it can stem from egoistic motives (Batson & Powell, 2003).

Why is Prosocial Behavior Important?

Engaging in prosocial behavior has several benefits for individuals and society. Also, the actor, as well as the target, benefit from prosocial behavior. During adolescence, prosocial behavior is positively associated with positive developmental outcomes such as academic achievement in the short-term and long-term (Bandura et al., 1996; Caprara et al., 2000; Eccles & Barber, 1999; Gerbino et al., 2018; Youniss et al., 1999), self-esteem, (Zuffianò et al., 2014), and interpersonal self-efficacy (Caprara et al., 2015). Prosocial behavior is positively associated with life satisfaction (Zuffianò et al., 2018). Moreover, on an interpersonal front, prosocial behavior has been positively associated with peer relationships (Eisenberg et al., 2006), civic engagement during the transition from adolescence to young adulthood (Luengo Kanacri,

Pastorelli, Zuffianò et al., 2014), and a sense of belonging to the community context (Young & Glasgow, 1998). Engaging in prosocial behavior may counteract depression (Bandura et al., 1999), bullying behavior (Raskauskas et al., 2010), and aggression in adolescents (Caprara et al., 2015). Most importantly, when many people start practicing prosocial behavior with altruistic motives, the world starts to become a more just and humane society. Therefore, inculcating prosocial behavior through education is certainly a worthy goal for all students and especially for adolescents with intellectual gifts.

Assessments of Prosocial Behavior

Several self-report measures of prosocial behavior and related constructs such as helping attitude and altruistic and egoistic motives for helping exist in the literature. However, few measures have been designed to be used with adolescents.

Nickell (1998) developed The Helping Attitude Scale, a 20-item measure of beliefs, feelings, and behaviors associated with helping, rated on a 5-point Likert-type scale. Reizer and Mikulincer (2007) developed a self-report measure of Mental Representation of Caregiving (MRC). MRC is a 27-item scale that measures five factors, which are perceived ability to recognize the needs of others, perceived ability to provide effective help, appraisal of others as worthy of help, egoistic motives for helping, and altruistic motives for helping.

Caprara and colleagues (1993, 2005) have developed more relevant measures of prosocial behavior. Caprara and Pastorelli (1993) developed an early Prosocial Behavior scale for children between 7 and 10 years old. It contained 15 items including five control items. Items were rated on a 3-point scale and described a respondent's behavior denoting altruism (e.g., "I try to help others"), trust (e.g., "I trust others"), and agreeableness (e.g., "I like to play with others"). They developed a parallel rating scale for use with teachers and mothers. Later, Caprara and colleagues (2005) developed a 16-item scale to measure prosocial behavior among adults. This scale has been widely used in research involving prosocial behavior due to its excellent psychometric properties established using IRT techniques. Although the scale was not originally intended to be used with adolescents, many scholars have used it in their studies with adolescents (e.g., Alessandri et al., 2014; Luengo Kanacri et al., 2013, 2014, 2017; Zuffianò et al., 2014). I elaborate on the psychometric properties of this scale and its appropriateness for adolescents in Chapter 3.

Prosocial Behavior Interventions

Extant research indicates prosocial behavior can be strengthened through psychoeducational interventions. Caprara and colleagues (2015) designed an intervention entitled, “Promoting Prosocial and Emotional Skills to Counteract Externalizing Problems in Adolescence” to encourage adolescents’ prosocial behavior in the classroom environment. The intervention consisted of a series of prosocial sessions and lessons based on five components, namely, sensitization to prosocial values, emotion regulation skills, perspective-taking skills, interpersonal communication skills, and precursors of civic engagement. The sessions consisted of modeling and role-play activities, group discussions, and case studies. The facilitators integrated these sessions with their regular academic curricular subjects and provided real-world applications. They found the intervention group, compared to the control group, showed gains in prosocial behavior, interpersonal self-efficacy beliefs, and agreeableness along with a decline in physical aggression above and beyond the normative developmental trend of these variables. Participants with lower normative development of prosocial behavior and agreeableness and a high initial level of physical aggression benefitted the most.

Baumsteiger (2019) designed an 11-day intervention for promoting prosocial behavior among adolescents and young adults. It consisted of eight activities such as watching a video about prosocial behavior; listening to a story; answering questions about one's identity; sharing about one's value system and goals; charting a plan to help others and implementing it; reflecting on one's prosocial act; and understanding its implication concerning self and others. Results of this study indicated a significant increase in participants’ prosocial behavior, concern for others, prosocial agency, social responsibility, prosocial intentions, prosocial identity, and empathy.

In another study, Schonert-Reichl and colleagues (2012) implemented a nine-month classroom-based program called *Roots of Empathy* (ROE) to enhance middle school students’ social and emotional competence; specifically, to increase students' prosocial behavior and social-emotional understanding and to reduce their negative behaviors. The ROE intervention consisted of 26 sessions around nine themes including lessons on emotion understanding, perspective-taking, caring for others, and infant development. A vital segment of the intervention consisted of monthly parent-infant visits that involved discussions about caring about others, the child development process, and effective parenting strategies. Results suggested the intervention was successful in developing cooperative and kind behavior in participants but not empathy.

Mesurado and colleagues (2019) developed The Hero program to promote prosocial behavior in adolescents through nurturing empathy, positive emotions, gratitude, emotional recognition, and forgiveness. The intervention protocol consisted of five 30-minute online sessions conducted in the form of videos, activities, or games catering to different variables named as different islands. A virtual travel guide called Sensei helped the participants navigate their way through different islands. Results revealed the program was effective in cultivating prosocial behavior toward strangers and family members but not in promoting prosocial behavior toward friends. Moreover, participants indicated the virtual intervention was user-friendly, and activities could be transferred to their daily life. Results of this study indicated a virtual, gamified intervention promoting prosocial behavior can be effective with adolescents.

Based on findings of several studies involving compassion meditation and loving-kindness meditation (e.g., Condon et al., 2013; Leiberg et al., 2011; Weng et al., 2013), Bankard (2015) concluded engaging individuals in meditation promotes prosocial behavior by cultivating compassionate intuitions. Bankard also argued intuition and emotions can influence prosocial behavior and training emotions such as through loving-kindness meditation may lead to the development of prosocial behavior.

This review of the literature revealed several studies have included empathy and compassion separately in their interventions aimed at cultivating prosocial behavior. This indicates empathy and compassion are relevant and can separately contribute to building prosocial behavior. However, none of these studies had a combined focus on empathy and compassion. Because empathy and compassion are overlapping constructs and both are relevant to prosocial behavior, I argue researchers should examine the usefulness of including empathy and compassion in developing prosocial behavior and assess to what extent they contribute to prosocial behavior over and beyond others. Therefore, in this study, I included empathy and compassion together and examined their relative usefulness in developing prosocial behavior.

I conclude this section with a review of the literature on the effectiveness of prosocial behavior interventions. Mesurado and colleagues (2018) recently conducted a meta-analytic review of studies whose main focus was developing prosocial behavior. The review consisted of 10 studies published between 2000 and 2017 and conducted with youth between ages 8 and 18. Results revealed the prosocial behavior interventions are effective, overall, with a small effect (Hedges's $g = 0.23$). The authors suggested few researchers have examined prosocial behavior

interventions; therefore, more research is needed on existing and new programs. Also, most of these studies have been conducted in school settings; therefore, there is a need to conduct and examine interventions in out-of-school settings. This dissertation study aims to fill this gap in the literature on prosocial behavior interventions with adolescents within and outside of school settings.

Even more recently, Laguna and colleagues (2020) conducted a systematic review of interventions stimulating prosocial helping behavior. The review consisted of 49 experimental and quasi-experimental studies covering 63 interventions, most of which were conducted with children and adolescents. Half of the studies were based on experimental designs with pretest-posttest assessments ($N = 15$) and pretest-posttest with follow-up assessments ($N = 9$). Thirty-four studies were conducted with school-aged children; 52 interventions used a group training format; 36 interventions were conducted by teachers. Most interventions lasted from one to two months ($N = 21$) and most popularly consisted of 10 to 29 sessions ($N = 28$). Most interventions lasted from 45 to 90 minutes per session ($M = 1$ hour). I have used this information to plan my study. Specifically, I used a quasi-experimental design for the intervention conducted in a group training format by teachers. Each session lasted for an average of 75 minutes, and the total intervention spanned over 10 weeks.

Further, Laguna and colleagues summarized strategies used in interventions and their effectiveness. Results indicate the interventions used a mix of strategies from behavioral ($N = 48$), cognitive ($N = 41$), and emotional ($N = 32$) approaches. Behavioral strategies included encouraging and reinforcing prosocial behavior through group activities such as modeling and demonstration and verbal and non-verbal feedback/reinforcement. Cognitive strategies consisted of knowledge-based approaches, such as how and when to help, and cognitive problem-solving skills. Emotional strategies included emotion recognition, enhancing emotion regulation skills, building empathy, and emotional understanding. Importantly, these strategies were used in combination in many interventions ($N = 43$). Therefore, modeling from these findings, I combined behavioral, cognitive, and emotional strategies in the intervention using several of the above-mentioned strategies, for instance, behavioral modeling and emotion recognition. Furthermore, most interventions ($N = 45$) were effective in promoting prosocial behavior and allied constructs such as empathy. Four studies that consisted of a follow-up assessment demonstrated the long-term effectiveness of the interventions ranging from one month to one

year. Therefore, prosocial behavior interventions can be effective, in general, and the effect may sustain over time.

Interrelationships Between Empathy, Compassion, and Prosocial Behavior

In the sections above, I indicated empathy, compassion, and prosocial behavior are deeply interrelated. In this section, I explicate the interlinkages among these constructs.

Scholars have described prosocial motivation, which is the desire to engage in prosocial behavior, as a component of empathy (Davis, 1994; Batson, 2011; Zaki & Ochsner, 2011) and a consequence of empathy (Tomasello et al., 2005). Experience sharing, also known as affective empathy, and mentalizing, also known as cognitive empathy, can produce prosocial motivation. Experience sharing, for example, seeing a friend in distress and feeling similarly distressed, can induce a powerful and even instinctive urge to help the friend (Zaki & Mitchell, 2013). Similarly, engaging in prosocial behavior also depends on one's ability to imagine the minds of others through mentalizing (Batson, 2011; Tomasello et al., 2005). That is, overt instructions to mentalize perspectives of others (i.e., perspective-taking) increase one's subsequent prosocial behavior (Batson et al., 1997; Stürmer et al., 2005; Todd et al., 2011). However, there are two different forms of perspective taking, that is, imagining how others feel and how you would feel, and they can have different emotional consequences. Although imagining how another person feels produces empathy, and therefore, altruistic motivation, imagining how you would feel produces empathy and personal distress (Batson, 2009).

Although experience sharing and mentalizing can help an individual in engaging in prosocial behavior, they do not necessarily translate into prosocial behavior. Sometimes seeing someone in suffering may overwhelm an individual and inhibit or even discourage any prosocial behavior (Gross, 2002). On the contrary, someone may help another person without feeling empathetic for them. Further, experience sharing requires access to non-ambiguous, nonverbal cues about an individual's joy or suffering. When one does not have direct access to cues, they are less likely to help. For example, individuals respond to the suffering of one person or support a cause that highlights the personal stories of one victim (e.g., one incidence of police brutality) rather than the suffering of a group or those highlighting the statistics of the larger population of victims such as national police brutality rate (Small & Loewenstein, 2003; Trout, 2010). Similarly, mentalizing a competitor or a more powerful rival outgroup may lead to antisocial and

unethical behavior rather than prosocial behavior based on the realization that members of these groups might cause harm (Bruneau & Saxe, 2012; Epley et al., 2006; Pierce et al., 2013).

Although experiencing empathy may not guarantee engagement in prosocial behavior, it is often a vital first step toward compassionate action (Marsh, 2011). However, feeling empathy for a person in need leads to increased helping of that person (Batson et al., 2001; for reviews, see Batson, 1991; Batson et al., 2009). When people identify with others and can take their perspective, they are likely to treat others with more compassion (Marsh, 2011). For example, in a series of experiments, Todd and colleagues (2011) found that perspective taking can reduce automatic expressions of racial biases in White people without, at the same time, lessening sensitivity to racial inequalities. These experiments showed engaging in perspective-taking can enhance real-world interracial interactions.

Another seminal example of empathy promoting prosocial behavior comes from the work of S. Oliner and P. Oliner (1992) during the Holocaust. They studied samples of rescuers and non-rescuers of Jewish people and found people who rescued Jewish people were distinguished by deep-seated empathy and an extensive concern for others. Although both groups were concerned with law, order, and patriotism, rescuers associated these concerns more with egalitarian values, caring for others, and a sense of obligation toward the people in need. A more important finding of Oliners (1992) was parents of those participants who rescued Jewish people encouraged perspective-taking from a young age. Therefore, experiencing empathy can lead to real-world prosocial behavior even when it is risky.

Van der Graaff and colleagues (2018) conducted a longitudinal study of empathy and prosocial behavior in 497 adolescents. Results revealed a consistent association between empathic concern and subsequent prosocial behavior. However, perspective-taking and subsequent prosocial behavior were only indirectly related, via the effect of perspective-taking on the empathic concern. The authors suggested emphasizing moral emotions rather than moral cognitions to help adolescents develop prosocial behavior.

Like empathy, I earlier described how compassion interventions can promote prosocial behavior (e.g., Condon et al., 2013; Leiberg et al., 2011; Weng et al., 2013). Especially, compassion interventions that use affect-based meditation such as loving-kindness and compassion meditation are effective in promoting prosocial behavior (Bankard, 2015). This is consistent with the literature on empathy that highlights the role of emotions in promoting

prosocial behavior. Furthermore, I earlier described the several conceptual and empirically derived overlaps between empathy and compassion, especially between empathic concern and compassion. In summary, empathy and compassion overlap in empathic concern and both promote prosocial behavior. Figure 2 represents these relationships among empathy, compassion, and prosocial behavior as I conceptualize them to represent a concern for others. Engaging in prosocial behavior is typically the consequence of experiencing empathy and compassion and may promote future engagement in prosocial behavior. However, engaging in prosocial behavior may not directly develop empathy or compassion. Therefore, I conceptualized empathy and compassion as one-way, related variables leading to prosocial behavior.

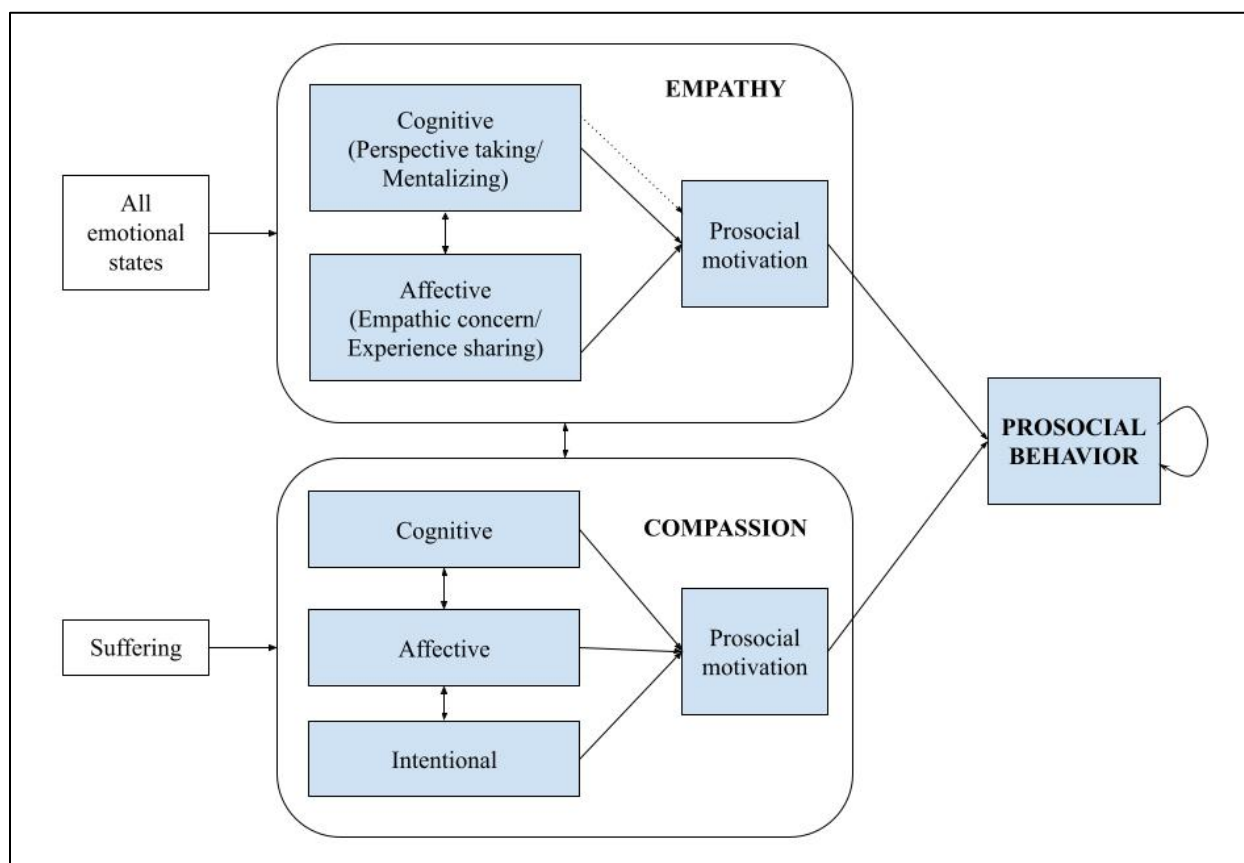


Figure 2. A Proposed Conceptual Representation of Concern for Others Indicating Relationships Among Key Sub-constructs

Other Constructs Related to Concern for Others

Although the review above focused on empathy, compassion, and prosocial behaviors, many other constructs may be related to the construct of concern for others. One key construct is

social connectedness. Social connectedness is the sense of connectedness that “allows people to maintain feelings of being human among humans and to identify with those who may be perceived as different from themselves” (Kohut, 1984, p. 200). Social connectedness has been found to correlate with empathy, compassion, and prosocial behavior (Lee & Robbins, 1995). Also, individual differences in social connectedness are often associated with empathy, compassion, and prosocial behavior. Therefore, including social connectedness in this study may help understand if the intervention works differently for students with different social connectedness.

Chapter Summary

In summary, developing a concern for others occasionally surfaces in the gifted education and talent development literature but does not receive central attention. However, contemporary leading scholars in the field have recently been pushing the field away from transactional exchanges among individuals and gifted programs toward a more prosocial vision aimed at contributing to a positive and enduring change in the world. Such vision necessitates developing, implementing, and assessing the effectiveness of psychoeducational interventions aimed at cultivating prosocial attitudes and behaviors, especially among youth. Empathy, compassion, and prosocial behavior in adolescents are malleable, and scholars have developed effective interventions in the recent past. However, a wide gap exists in research on these constructs conducted with adolescents with intellectual gifts. Further, it is not known to what extent empathy, compassion, and prosocial behavior intercorrelate and how can they be developed in adolescent populations with intellectual gifts. Unsurprisingly, most studies reviewed in this chapter have been conducted in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries (Hendriks et al., 2019). Therefore, findings from this dissertation study will add a unique context to existing literature.

CHAPTER 3 METHODS

Introduction

In this chapter, I explain the methods I used to conduct this study, including the research design, context, participants, data collection methods, instrumentation, data analysis processes, and how I ensured the trustworthiness of the study. The central goal of this study was to develop and examine the effectiveness of a psychoeducational intervention to nurture a concern for others in adolescents with intellectual gifts. Based on the review of literature presented in Chapter 2, I conceptualized concern for others as a complex interplay of *empathy*, *compassion*, and *prosocial behavior*. Adolescence presents a developmentally opportune time for nurturing empathy, compassion, and prosocial behavior (Davis, 1994; Hoffman, 2008; Jazaieri, 2018). Therefore, the second goal was to examine interrelationships among these three constructs as they pertain to adolescents with intellectual gifts. Figure 3 presents an operational diagram for concern for others depicting key variables and a covariate examined in this study. The diagram shows two subconstructs of empathy and three subconstructs of compassion measured in this study along with prosocial behavior (outcome) and social connectedness (covariate). Other covariates, moderators, and confounders such as gender, research site, treatment condition, and social desirability appear in the diagrammatic representations later in this chapter as I describe research questions and analyses.

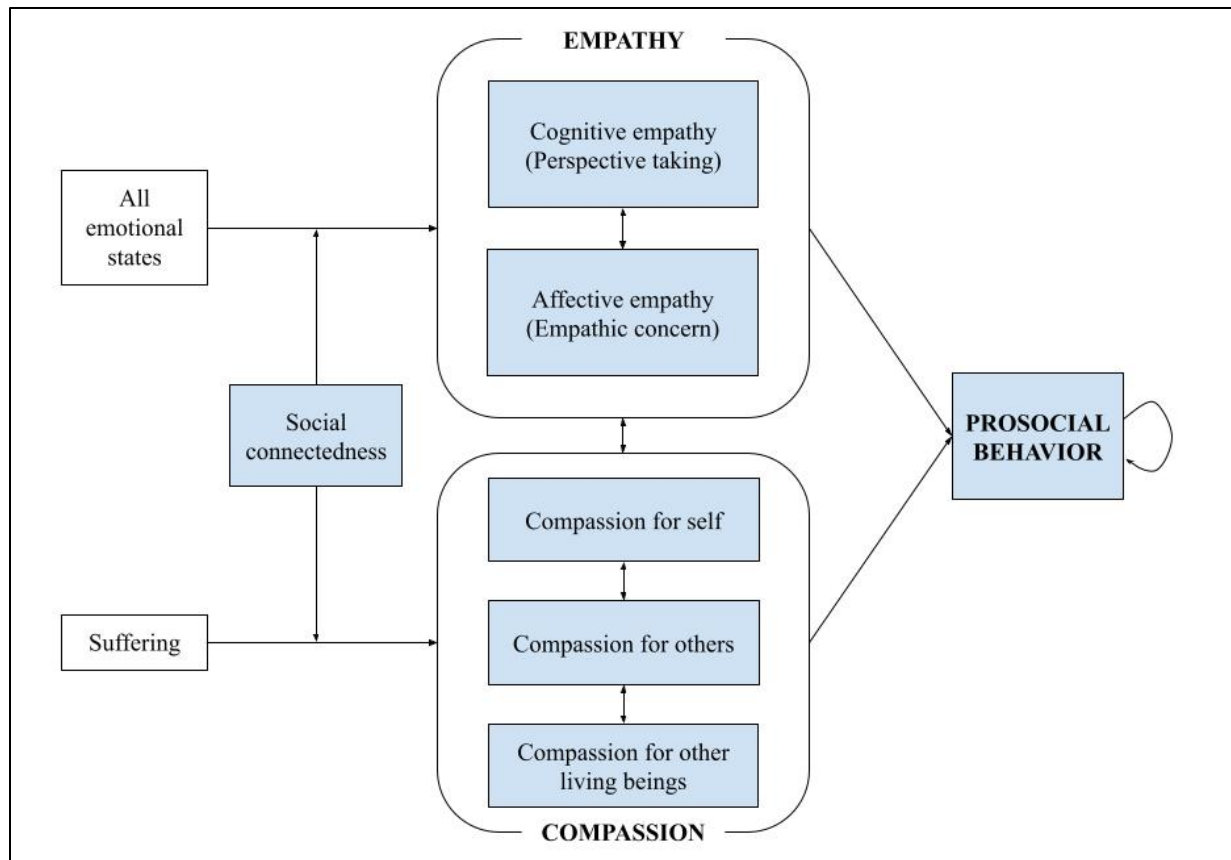


Figure 3. A Diagrammatic Representation of Concern for Others as Operationalized in This Study

Research Design

The central goal was to assess the effectiveness of the intervention quantitatively and qualitatively in the development of a concern for others. Thus, I employed a convergent mixed-methods research design, which is particularly appropriate for a holistic assessment of the intervention (Creswell & Clark, 2017). The quantitative methods helped quantify learning outcomes and track any changes in them to evaluate intervention effectiveness, and the qualitative methods helped explore the participants' experiences in the intervention. Finally, the mixed-methods integration of findings helped in developing meta-inferences about the effectiveness or ineffectiveness of the intervention.

In the quantitative strand of the study, I conducted an experiment involving randomly assigned students in either treatment or control groups. I examined the effectiveness of the intervention using a repeated-measures design involving data collection at five time points.

Student surveys were the main data collection method. I collected data from all the student participants of the study, including treatment and control groups, using existing self-reported measures of empathy, compassion, prosocial behavior, classroom quality, social connectedness, and social desirability. In addition, students responded to a weekly survey indicating their adherence or non-adherence to home practice.

In the qualitative strand of the study, I employed a basic-interpretive research design to conduct analyses of qualitative data collected from students and teachers through semi-structured interviews, journal entries, and classroom observations. I employed an inductive and thematic analysis (Braun & Clarke, 2006; Saldaña, 2015; Strauss & Corbin, 1990; Thomas, 2006) of these data to explore participants' experiences during the intervention, and their perceived benefits, affordances, challenges, and recommendations for improvement.

Context

This study involved two sites that are a part of a common parent organization. Two sites were available for the study to obtain a larger pool of students to examine the intervention effect. I anticipated no cross-site differences in the data collected at these two sites because there were many commonalities among the participants and in the overarching educational philosophy and curricular and pedagogical approaches at the two sites. However, I examined the data for differences by the site to confirm this assumption. One site was a school setting, and the other site was an out-of-school talent development program. At both sites, students with intellectual gifts are typically identified and enrolled in grade five. Also, the enrolled students at both sites receive intellectually stimulating and psychosocially enriching curriculum and instruction. Both the sites inherit the broader educational framework of the parent organization. Most importantly, the parent organization, and thus the two research sites, have a focus on identifying and nurturing intellectual gifts for a positive and enduring social change.

The Parent Organization

I conducted this study at a non-profit community organization working in the field of education, research, health, women's leadership, and rural development. The core philosophy of the organization is to identify and nurture individuals, especially children, with intellectual gifts

and motivate them to serve society using their gifts (Bapat, 2017; Piirto, 2002). The 60-year-old organization currently operates five centers and numerous programs including five schools, several non-formal education centers, and over a hundred extension centers across the state of Maharashtra in western India. The sister organization of this organization runs a psychology institute that conducts research on and provides services in the areas of identification and nurturing of human potential. The parent organization draws inspiration from Indic literature on spirituality and culture. These sources include ancient scripts of *Vedas*, *Upanishadas*, *Shrimad Bhagvadgeeta*, and commentaries by four Indian monks—Samartha Ramdas, Maharshi Dayananda, Swami Vivekananda, and Yogi Aurobindo.

Site 1: The School

Among the first initiatives of the parent organization was the creation of a special school for children with intellectual gifts in 1969. The school enrolls students studying in grades five through 10. Each year, the school enrolls a cohort of 80 students (40 girls) in grade five.

The school enrolls students through a two-step admission process, which is conducted by the psychology institute co-located within the school. In the first step, students in 4th grade from across the state of Maharashtra, rural and urban alike, appear for the entrance examination. The school receives about 800-1200 applications every year for 80 spots. The assessment consists of a battery of tests developed by the psychology institute (Khire, 1993) based on the Structure of Intelligence model (Guilford, 1967), and includes tests of numerical, symbolic, semantic, and behavioral contents on various intellectual processes ranging from memory and cognition to convergent production, divergent production, and evaluation. The tests are conducted in two languages, Marathi, which is the native language of the state of Maharashtra, and English.

Top students are shortlisted based on their performance on different tests mentioned above, and preference is given to students who score high on multiple tests. In the second step of the admission process, shortlisted students are assessed on standardized tests of verbal and figural creativity. Eighty students (40 girls) are shortlisted for school admission. In summary, the school enrolls students with multipotentiality, but the focus remains on intellectual and creative gifts. Parents pay annual tuition fees of about 55,000 to 70,000 INR (~700 to 1,000 USD).

The school employs an advanced curriculum and has a level-based, self-acceleration system for English and Mathematics subjects. Additionally, the school emphasizes the physical,

social, and leadership development of students through a daily after-school sports-based intervention. Also, students have open access to a large library, numerous laboratories, and a makerspace to gain hands-on learning experiences. Project-based learning is promoted at school, with students completing one major project every year. Senior members of the parent organization regularly interact with students to instill the values of spirituality, self-transcendence, and selfless service to the nation and society.

In the 2021-2022 school year, 476 students (241 girls) were enrolled in the school along with 20 payroll teachers, 31 teachers on a clock-hour basis, 7 contractual teachers and school counselors, and 18 non-teaching staff. In this study, two payroll teachers conducted the intervention as a part of the regular weekly schedule of classes during the 2021-2022 academic year. Seventh-grade students at this site participated in this study ($N = 79$), which consisted of 40 girls and 39 boys.

Site 2: The Out-of-School Talent Development Program

The second site in this study was a weekend-based, out-of-school talent development program. The program was situated in the Potential Enhancement Services wing of the psychology institute of the parent organization described above. My colleagues and I designed this program in 2017 to provide holistic talent development opportunities for middle and high school students with intellectual gifts. The program focuses equally on the cognitive and affective development of students and is conducted through a series of 25 weekly sessions and a four-day residential summer camp. The weekly sessions occur on weekends throughout the academic calendar year. The facilitators of the program have a formal post-graduate diploma in gifted education.

In 2017, the first cohort of 80 students (40 boys) studying in grades five and six were recruited. Every year, one new level was created in the program for a smooth forward transition of the first cohort. In 2019 and 2020, new cohorts of students were enrolled in the program in grades five and six. The vacant positions created due to student attrition over the years are filled with new students; however, the program staff encourages the continuous participation of students over multiple years. The students are enrolled through a similar battery of tests to that mentioned earlier in the admission process conducted at site 1. Local students who did not join the school (Site 1) despite being eligible, or those who were not successful in the school's

admission process due to limited spots, are also invited to join this program based on their performance in that admission process. Additionally, new students are recruited using Raven's Standard Progressive Matrices (SPM; Raven et al., 2000a, 2000b) or the Indian Children Intelligence Test (ICIT; Khire et al., 1992). Starting in 2020, new students were also recruited based on their self- or parent nominations followed by an interaction with program facilitators. In summary, multiple pathways are provided to students to enroll in the program. Parents pay annual tuition fees of about 15,000 INR (~200 USD).

The program is conducted in the form of multiple subject modules of 10-20 hours each. A weekly session is three hours long and is divided into two parts—one hour of affective development inputs and two hours of cognitive/academic development inputs. The session begins with meditation, followed by an affective development session such as a topical discussion or a guest speaker. Next, the students attend the subject modules, and the session ends with a prayer. In the first two years, students learn domain-general skills from program staff (facilitators). In year 1, students in grades five and six attend the modules on memory, cognition, logical reasoning, creative thinking, and self-study skills. In the second year, students in grades six and seven attend the following modules: Advanced logical reasoning, advanced creative thinking, literary engagement, and self-study skills. Beginning the third year, students in grades seven and eight choose their electives. These electives are more domain-specific than those in the first two years of the program. Examples of electives include architectural creativity, advanced science, advanced mathematics language and creativity, and introduction to psychology. Each student is encouraged to choose two electives in an academic year. The program staff invites domain experts to teach the elective courses. Each elective course spans 12-15 weeks and a total of 25-30 hours.

Besides the subject modules described above, students attend affective development sessions with program staff. In year 1 and year 2, the focus is on *know yourself and know your society*. To complement the learning during the academic year, the program staff conducts a four-day residential summer program. The camp focuses on the development of group skills and leadership skills and provides opportunities for students to break out of their comfort zones and develop a greater self- and social awareness. In 2019, the summer program was conducted at a rural facility to develop a greater understanding of rural lives. In 2020, the summer program was conducted virtually with a focus on gratitude, resilience, and social inequities. Like site 1, senior

members of the parent organization regularly interact with students to instill the values of spirituality, self-transcendence, and selfless service to the nation and society.

At the time of this study, in the 2021-2022 program year, 68 students (26 girls) are enrolled in the program with 26, 25, and 17 students in the second, third, and fifth years of the program, respectively, together with one full-time teacher, one part-time teacher, and two quarter-time teachers. In this study, two members of the program staff conducted the intervention as a part of the weekly affective development sessions of the program for students in the second and third years ($N = 51$; 19 girls) during the 2021-2022 academic year.

Intervention

Samvedana--the intervention created for this study targeted the development of concern for others. *Samvedana* is a Sanskrit word meaning experiencing, feeling, or sensing together, usually pain or suffering. The name *Samvedana* depicts the experience of empathy and compassion and often indicates prosocial behaviors such as kindness. The intervention consisted of 10 75-minute sessions conducted weekly for three months. Three sessions each focused on empathy, compassion, and prosocial behavior. One session was dedicated to a community-based field visit in which the participants were exposed to a grassroots-level social reality around them. The intervention was developed for this study following the guidelines of conducting community-based, participatory research (Israel et al., 2013). Table 1 shows the intervention outline.

Table 1. Samvedana Intervention Outline

No.	Construct	Theme	Topic details	Session details
1	Empathy	Understanding emotions	<ul style="list-style-type: none"> • Emotion identification 	<ul style="list-style-type: none"> • Direct instruction: Five core emotions • Activity: Movie clip from Inside Out (2015) • Activity: Trigger-Emotion-Pause-Action process • Breath-focused meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) • Home practice: Emotion identification questionnaire (Greater Good Science Center)
2	Empathy	Perspective taking	<ul style="list-style-type: none"> • Direct and indirect perspective taking • Empathic motives 	<ul style="list-style-type: none"> • Direct instruction: Empathy, perspective-taking, empathy as malleable and socially valued • Activity: Video – Snack Attack • Activity: Empathy mapping (Video of Joy & Heron – Make Joy Happen) • Breath-focused meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) • Home practice: Actual sensory experience, live observation

Table 1 continued

No.	Construct	Theme	Topic details	Session details
3	Empathy	Communicating empathy	<ul style="list-style-type: none"> • Observe, listen, respond 	<ul style="list-style-type: none"> • Direct instruction: Roleplays depicting empathetic and unempathetic ways to communicate • Activity: Movie clip from Inside Out (2015) • Activity: Group discussion - Imagine “what would you do/say to __?” • Breath-focused meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) • Home practice: Interact with a person
4	Compassion	Mindfulness	<ul style="list-style-type: none"> • Mindfulness versus disengagement in response to suffering 	<ul style="list-style-type: none"> • Direct instruction: Being present, benefits of mindfulness • Activity: Raisin observation • Activity: Compassionate listening • Loving-kindness meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) • Home practice: Mindful eating
5	Compassion	Common humanity	<ul style="list-style-type: none"> • Common humanity versus separation • Equanimity 	<ul style="list-style-type: none"> • Direct instruction: Human commonalities • Activity: Video – Don’t put people in boxes • Activity: Poll – What do we have in common? • Loving-kindness meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) • Home practice: None

Table 1 continued

No.	Construct	Theme	Topic details	Session details
6	Compassion	Kindness	<ul style="list-style-type: none"> Kindness versus indifference to suffering 	<ul style="list-style-type: none"> Direct instruction: Kind expressions, benefits of kindness Activity: Forgiveness letter Loving-kindness meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) Home practice: Gift of time
7	Prosocial behavior	Gratitude	<ul style="list-style-type: none"> Being grateful 	<ul style="list-style-type: none"> Direct instruction: Grateful expressions, benefits of gratitude Activity: Gratitude jar Compassion meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) Home practice: Expression of gratitude
8	Prosocial behavior	Interconnectedness	<ul style="list-style-type: none"> Interconnectedness and interdependence of lives 	<ul style="list-style-type: none"> Direct instruction: Illustrations from different disciplines showing interconnectedness (e.g., climate change) Activity: Food gratitude Activity: Ecological footprint survey Compassion meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) Home practice: Ecological footprint survey
9	Integrated	Field visit	<ul style="list-style-type: none"> Practicing empathy, compassion, and prosocial behavior 	<ul style="list-style-type: none"> Direct instruction: Orientation to the field visit Activity: Field visit Home practice: Class presentation preparation

Table 1 continued

No.	Construct	Theme	Topic details	Session details
10	Integrated	Walk the talk	<ul style="list-style-type: none"> • Class presentations and action plan 	<ul style="list-style-type: none"> • Direct instruction: Why have a concern for others? • Activity: Class presentations • Activity: Designing action plans • Compassion meditation + Prayer – <i>Sarvepi Sukhinah Santu</i> (Wishing wellness for all) • Home practice: None

Besides me, the intervention design team included two teachers from site 1 and five teachers from site 2. The team met seven times before the actual lesson development began. These meetings lasted for one to two hours each. In these seven meetings, the members discussed five prompts concerning their own knowledge of and cultural values about developing concern for others. These were as follows:

1. What does a concern for others mean to you?
2. How is it expressed in your culture/family/society/country?
3. How important is it culturally and personally for you to develop a concern for others?
4. What are cultural roots and heritage in support of or against the idea of having a concern for others, especially in adolescents with intellectual gifts?
5. How can a concern for others be developed, especially at home given that the intervention will most likely be conducted virtually?

Through group discussions, the team identified observing, listening, experiencing, modeling, monitoring/recording, reflecting, and communicating as the key processes in the development of concern for others. The intervention design team then included these processes in their lesson plans. For example, in the home practice activity for Lesson 2, the students engaged in an observation-based activity to learn about perspective taking. In the alternative activity for the same lesson, the students tied their dominant hand behind their back and tried completing daily chores. In this activity, they learned about perspective taking by immersing themselves in a direct experience.

In addition, the design team proposed the content and activities based on their teaching experience to be included in the lesson plans. I shared with the design team the content and activities that have appeared in the literature review of this study (see Chapter 2). For example, empathy interventions commonly include activities that aim to develop an accurate understanding of the feelings of others using picture-based cues, movie clips, and people observations. Compassion interventions often include gratitude, kindness, and compassion meditation exercises. These contents and activities were also embedded in the lesson plans.

The members also consensually decided on a curricular and instructional approach for the intervention. The team decided to use the social-constructivist approach (Vygotsky, 1978) and

emphasized interactivity among participants; preference for hands-on activities over passive content delivery; a good balance of whole class and small group instruction; the use of audio-visual prompts; regular self-reflective journaling; and extended home-based and community-based opportunities to practice the skills learned in the intervention. Thus, in the intervention, the teachers used roleplays, discussions, picture interpretation, field visits, and behavioral modeling. Multiple more rounds of discussions happened in the design team every week while developing and finalizing the details of the lesson plans.

See Appendix J for a sample lesson plan. Each lesson included 10 components. The lesson started with small talk between the teacher and students followed by a recap of the previous lesson. The teacher then conducted a guided meditation practice followed by a starter activity to introduce the lesson's topic to the students. Next, the teacher presented the main topic using slides, videos, and whole-class discussions followed by the main activity planned for the session. The main activity included hands-on tasks and small group discussions. The teacher then summarized the lesson by pointing out salient takeaways and proceeded to explain the home practice tasks for the week. Toward the end of the session, the teacher presented the humor of the week, a comic strip closely related to that week's topic. Finally, the teacher concluded the session with a wellness prayer.

Quantitative Design

I used an experimental repeated-measures design as a part of this mixed-methods study to examine the effectiveness of the developed intervention program. In this design, students were randomly assigned to one of the two conditions, that is, the treatment group or the control (delayed treatment) group using the calculator.net website. An independent observer employed at Site 1 monitored the randomization process to ensure unbiased assignment of students to groups. Then, I conducted the pre-intervention assessment (T1) one week before the start of the intervention. Next, I conducted the mid-intervention assessment (T2) after the fifth lesson, approximately 1.5 months into the intervention. Further, I conducted a post-intervention assessment (T3) immediately one week after the tenth lesson. Finally, I conducted the follow-up assessments six weeks (T4) and three months (T5) after the end of the intervention. During the implementation of the intervention in the first three months, the control group received cognitive (Site 2) or art (Site 1) skills training irrelevant to the goals of the study. Immediately after T3, the

control group started receiving the intervention as a part of delayed treatment. Therefore, T4 and T5 assessments served as mid-delayed-treatment and post-delayed-treatment assessments for the initial control group. All the lessons and surveys were administered virtually owing to COVID-19 restrictions except for the T5 assessment at Site 1, which took place when the schools reopened for in-person instruction. The data collected from this design addressed the following research questions.

Interrelationships Among Key Outcomes

1. What relationships exist among the key variables in having a concern for others at the first time of data collection (T1)?
 - a. What correlations exist among measured empathy (T1), compassion (T1), prosocial behavior (T1), social connectedness (T1), and social desirability (T1)?
 1. To what extent do these relationships vary by gender?
 - b. To what extent do measured empathy (T1) and compassion (T1) predict measured prosocial behavior (T1)?
 1. To what extent does this relationship vary by gender?

Intervention Effects

2. Does treatment and control group participants' self-reported concern for others change over the time of their participation in the intervention?
 - a. What descriptive patterns exist in the participants' change in self-reported concern for others over the time of their participation in the intervention?
 - b. To what extent does the participants' self-reported concern for others vary over the time of their participation in the intervention?
 - c. To what extent does gender explain the variability in the participants' self-reported concern for others over the time of their participation in the intervention?

Student Engagement in the Intervention and Its Relationship With the Outcomes

3. How do students perceive classroom quality, engagement, and motivation in learning during and after the intervention (T2 & T3, respectively)?

- a. To what extent do students' perceptions of classroom activities differ from mid-intervention (T2) to post-intervention (T3)?
 - b. Do students' perceptions of classroom activities vary by gender at mid-intervention (T2) or post-intervention (T3)?
- 4. To what degree do students adhere to the intervention?
 - a. How frequently do students attend the intervention sessions, engage in formal and informal practice at home, and complete journal entries?
 - b. Is adherence associated with residual changes in self-reported empathy, compassion, and prosocial behavior from pre- to post-intervention assessment (T3 – T1)?

Sustainability of the Intervention Effects and Feasibility of the Intervention

- 5. To what extent does self-reported past prosocial behavior uniquely predict self-reported future prosocial behavior?
 - a. To what extent does post-intervention self-reported prosocial behavior (T3) uniquely predict self-reported future prosocial behavior (T4) beyond post-intervention self-reported empathy and/or compassion (T3)?

In this section, I further describe the participants, outcome variables, key covariates, and the timeline of data collection. I conclude this section by describing the data analysis methods used in the investigation of the quantitative research questions.

Participants

Participants of the quantitative design consisted of 129 students in grades six through eight (ages 11-13) from two sites. At the school (site 1), 79 students in grade seven, 39 boys and 40 girls, participated in this study. At the program (site 2), 51 students from grades six through eight, 32 boys and 19 girls, participated in this study. Table 2 summarizes the sample size and student characteristics from each site. The participants were a mix of students from educated families with a middle and upper-middle-class income. Most participants spoke Marathi at home; however, the medium of instruction at both research sites was bilingual--Marathi and English. Participants did not receive any monetary incentives for their participation. However, consistent

with the experiences from recent studies conducted at these sites, all students enrolled in the program/school voluntarily participated in the study and provided cross-sectional and repeated-measures data. Missing data and attrition were minimal in this study as explained later.

Table 2. Sample in the Quantitative Design by Site

Characteristic	Site 1	Site 2
Sample size	79	51
Grade	7	6-8
Gender composition (% girls)	39 boys, 40 girls (50%)	32 boys, 19 girls (37%)
Treatment group to control group ratio	1:1	1:1
Elementary education completed at	Urban (71) or Rural (8)	All urban
Years enrolled at the site	1-3	1-3
Average father income (USD)	14,000	20,000
Medium of instruction	Bilingual (English and Marathi)	Bilingual (English and Marathi)
Home language	Majorly Marathi	Majorly Marathi
Identification criteria/measures	A test battery based on the Structure of Intelligence model (Guilford, 1967)	A test battery based on the Structure of Intelligence model (Guilford, 1967), Raven's Standard Progressive Matrices (SPM; Raven et al., 2000a, 2000b), the Indian Children Intelligence Test (ICIT; Khire et al., 1992), or self-nomination

Measures

In this study, three constructs (i.e., prosocial behavior, empathy, and compassion) represented with six variables served as key outcome variables to examine interrelationships among variables in Research Question 1 and to evaluate the effectiveness of the developed intervention in Research Question 2. In addition, the analyses involved two potentially confounding variables (i.e., treatment and site) and three covariates (i.e., gender, social connectedness, and social desirability). In Research Question 3, student perceptions of classroom quality, represented by five variables served as an outcome variable to examine student engagement in the intervention with gender as a covariate variable. To further assess student engagement in the intervention, adherence, represented with four variables, served as a predictor

of pre- to post-intervention change in empathy, compassion, and prosocial behavior in Research Question 4. Finally, in Research Question 5, future prosocial behavior served as an outcome variable predicted by past prosocial behavior with past empathy and compassion as covariates.

Prosocial Behavior

Prosocial behavior served as a target outcome to evaluate the intervention effect, and I measured it with the Prosocialness Scale for Adults (PSA; Caprara et al., 2005). PSA is a unidimensional self-report measure of feelings and actions concerning four aspects: sharing (e.g., “I share the things that I have with my friends”), helping (e.g., “I try to help others”), (c) taking care of (e.g., “I try to be close to and take care of those who are in need”), and (d) feeling empathetic with others and their needs or requests (e.g., “I intensely feel what others feel”). According to Caprara and colleagues (2005), the first three types of actions typically characterize the measurement of prosocial behavior in childhood or adolescence; however, the fourth type, that is, empathy may be more typical of adult prosocial behavior. The scale consists of 16 items answered on a five-point response scale ranging from 1 “*never/almost never true*,” 2 “*occasionally true*,” 3 “*sometimes true*,” 4 “*often true*,” to 5 “*almost always/always true*.” See Appendix A for the items and scoring guidelines. The scale yields an overall total score of prosocial behavior with a possible range of 16-80, which was used for operationalizing the construct in this study. Greater scores indicate greater prosocial behavior.

According to its authors (Caprara et al., 2005), PSA was designed to capture individual variations in adult prosocial behavior, and its properties were tested using an item response theory (ITR) analysis of data collected from a sample of 2,574 Italian adults. However, researchers have used this scale (full scale or representative items) in studies with adolescents and found it to be appropriate for the assessment purpose involving adolescents (e.g., Alessandri et al., 2014; Luengo Kanacri et al., 2013, 2014, 2017; Zuffianò et al., 2014). Further, I checked this assertion with Dr. Antonio Zuffianò, a collaborator of Dr. Caprara, who confirmed that “the prosocialness scale developed by Caprara et al. (2005) works well with adolescents” (Personal communication, 4/5/2021).

Caprara and colleagues (2005) reported the internal reliability (Cronbach’s alpha coefficient) of the data for the entire set of items was .91, and the mean corrected item-total correlation was .59. Moreover, authors of previous studies with adolescents also reported good

internal reliability evidence of the data for this scale (e.g., Cronbach's alpha coefficients: .89 - .94, Alessandri et al., 2014; .73 - .81, Luengo Kanacri, Pastorelli, Eisenberg et al., 2014; .92 - .94, Zuffianò et al., 2014). Furthermore, PSA was found to be a unidimensional scale of prosocial behavior as indicated by a 5:1 ratio between percentages of variance explained by the first and second unrotated components in the principal component analysis (Caprara et al., 2005). In this study, Cronbach's alpha coefficient of the data for PSA was .85 when measured at the T1 time point, indicating good internal reliability (Taber, 2018).

Item Response Theory (IRT) analyses by Caprara and colleagues revealed nine out of 16 items were highly discriminating across different levels and were able to detect small differences in prosocial behavior, with items 3, 10, and 13 yielding the most information (i.e., largest slope parameters). These items are "I try to help others," "I try to console those who are sad," and "I try to be close to and take care of those who are in need." The remaining items, primarily related to respondents' willingness to share with others (e.g., "I share the things that I have with my friends" in item 2, "I easily lend money or other things" in item 11), were less informative about people's underlying prosocial behavior. Concerning item difficulty (i.e., location parameter), 14 out of 16 items had a negative value indicating the relative ease of the items, especially those referring to prosocial behavior toward friends (e.g., "I am pleased to help my friends/colleagues in their activities" in item 1, "I immediately sense my friends' discomfort even when it is not directly communicated to me" in item 16). Location parameter in IRT signifies the latent trait level relating to a .5 probability of endorsing the item correctly or in a trait-reliable way. Therefore, most items in this scale were "easily" endorsed by the participants (Caprara et al., 2005).

Caprara and colleagues (2005) examined gender differences using differential item functioning (DIF). Women favored items concerning empathy and emotional support (items 5, 8, 10, 12) more than men did. On the contrary, men favored items concerning immediate assistance or action (items 1, 6, 7, 9) more than women did. These results were consistent with existing literature on gender differences in prosocial behavior (Eagly & Crowley, 1986; Eisenberg & Fabes, 1998). No gender differences were found regarding item slope parameters indicating the 16 items of the scale have an equal capacity to discriminate among men and women with varying levels of prosocial behavior (Caprara et al., 2005).

In conclusion, the findings from Caprara and colleagues' (2005) study lent strong support to the effectiveness of PSA for measuring systematic individual differences in prosocial behavior. The effectiveness was pronounced for intermediate and low levels of prosocial behavior; however, the fidelity of PSA may be less for those with extremely high or low levels of prosocial behavior.

Empathy

Constructs of empathy served as predictors of prosocial behavior for Research Question 1, as the outcomes for Research Questions 2 and 4, and as covariates in Research Question 5. I measured empathy using the two most widely used subscales of the Interpersonal Reactivity Index scale (IRI; Davis, 1980, 1983). These were perspective taking and empathic concern. IRI is a widely used, self-report measure of four separate aspects of interpersonal reactivity: perspective taking, empathic concern, fantasy, and personal distress. Each subscale consists of seven items answered on a five-point Likert-type scale ranging from 0 "*Does not describe me well*" to 4 "*Describes me well*." The remaining two subscales, that is, fantasy and distress, do not directly relate to empathy, and thus I excluded them from this study. See Appendix B for the subscale items and scoring guidelines. According to the author (Davis, 1980, 1983), IRI was designed to separately capture individual variations in cognitive/intellectual, perspective-taking tendencies of the individual and differences in the types of emotional reactions typically experienced. The scale yields separate scores on subscales. Each subscale has a range of 0 to 28. Greater scores indicate greater perceived proclivity measured in the respective empathy subscale.

Davis (1983) defined perspective taking as the tendency to spontaneously adopt the psychological point of view of others. Perspective taking is "an ability or proclivity to shift perspectives – to step 'outside of the self' – when dealing with other people" (Davis, 1980, p. 12). Perspective taking items refer to real-life instances of perspective-taking rather than fictitious situations and characters (e.g., "I sometimes find it difficult to see things from the other guy's point of view"). Empathic concern is the assessment of other-oriented feelings of sympathy and concern for unfortunate others (e.g., "I often have tender, concerned feelings for people less fortunate than me"). Empathic concern items measure "the degree to which the respondent experiences feelings of warmth, compassion, and concern for the observed individual" (Davis, 1980, p. 12).

Davis (1980) reported the internal reliability coefficients (Cronbach's standardized alpha) of the data for the 7-item, unit-weighted scales of perspective taking and empathic concern were .75 and .72 for men and .78 and .70 for women, respectively. The values indicated convincing evidence of the internal reliability of these subscales. Davis (1980) assessed the reliability over time with a period of 60-75 days between the first and second administration of the questionnaire. The correlations between the test and retest scores of perspective taking and empathic concern subscales were .61 and .72 for men and .62 and .70 for women, respectively, indicating satisfactory temporal stability across genders. In this study, Cronbach's alpha coefficients of the data for perspective taking and empathic concern were .64 and .62, respectively, when measured at the T1 time point, indicating low internal reliability (Taber, 2018). Although low alpha values may be because the instrument has few items (i.e., 7 per subscale), in this study, that might have resulted from the instrument's use with English language learners. Low alpha values may negatively affect the reliability of the data collected using the empathy scale in this study.

Davis (1980) found statistically significant differences between men and women for perspective taking and empathic concern subscales, with women displaying greater scores than men in each case. The mean score for perspective taking was 17.96 for women compared to 16.78 for men. Similarly, the mean score for empathic concern was 21.67 for women compared to 19.04 for men. However, the relative size of the gender difference was observed to be much smaller in perspective taking compared to empathic concern. Davis (1980) concluded women score significantly greater than men on the measure of emotional concern and less strongly on the measure of perspective-taking ability. Perspective taking and empathic concern subscales were found to be positively intercorrelated ($r = .33$ for men and $r = .30$ for women) indicating that "greater perspective-taking ability is associated with greater feelings of empathic concern for others" (Davis, 1980, p. 17). However, the relationship between the cognitive and emotional empathic dispositions did not seem to be strong to conclude these subscales measured the same construct. Rather, the two subscales seemed to measure two relatively independent constructs of empathy.

Hawk and colleagues (2013) examined IRI with early and late adolescents in two Dutch samples. They found results similar to those reported by Davis (1980). Internal reliability coefficients (Cronbach's standardized alpha) of the data for perspective taking and empathic

concern were .72 and .70 for early adolescents and .84 and .74 for late adolescents, respectively. These are acceptable values for the internal reliability of these subscales. Group comparisons showed women scored greater than men on all subscales. Late adolescents scored greater than early adolescents on perspective taking, but they did not show significant age differences on the empathic concern. Yet again, the relative size of the gender difference was observed to be much smaller in perspective taking compared to empathic concern. Like Davis (1980), scores on perspective taking and empathic concern subscales were positively correlated ($r = .45$ for early adolescents and $r = .52$ for late adolescents). Further, the perspective taking and empathic concern subscales for all subgroups showed a positive association with helping, openness, and agreeableness. Also, a negative correlation existed between perspective taking and aggression for all respondents and between empathic concern and aggression only for adolescents. Hawk and colleagues (2013) concluded IRI has adequate construct validity and is appropriate for examining empathy across the span of adolescence.

In conclusion, IRI seems to have good psychometric properties; has strong evidence of a factor structure that remains consistent across independent samples and repeated administration, has acceptable construct validity evidence, and is appropriate to be used with adolescents. However, it has a low level of internal reliability in this study, which might limit the reliability of the data collected using the IRI scale in this study.

Compassion

Like empathy, compassion served as a predictor of prosocial behavior for Research Question 1, as the outcome for Research Questions 2 and 4, and as a covariate in Research Question 5. I measured compassion using the Compassion Scale (Nas & Sak, 2021). The compassion scale is a recent scale of compassion for children and adolescents ages 12-18, designed for this age group because other existing scales (e.g., Compassion Scale by Pommier et al., 2020) have only been tested on adult populations, especially university students (see Strauss et al., 2016 for review). The 20-item, self-report scale purports to measure three factors (a) compassion toward other people (9 items; e.g., “I feel sorry when bad things happen to people”), (b) compassion toward oneself (5 items; e.g., “I may not be successful in all areas”), and (c) compassion toward other living things (6 items; e.g., “I feel very bad when plants are damaged”). Each subscale consists of items answered on a five-point frequency scale ranging from 1

“Never,” 2 “Rarely,” 3 “Sometimes,” 4 “Often,” to 5 “Always.” See Appendix C for the subscale items and scoring guidelines. The scale provides scores for three subscales and a total score. Greater scores indicate more compassion. In this study, I used three separate subscale scores: compassion for self (CS), compassion for others (CO), and compassion for other living beings (COL).

Nas and Sak (2021) validated the compassion scale on a sample of 756 Turkish students, 52% of whom were girls, studying in grades seven through 12, ages 12-18. The three-factor structure explained 52% of the total variance, which is not large but marginally surpasses the generally accepted threshold of 50%. The factor loadings for all items were between .539 and .849.

Nas and Sak (2021) reported correlation coefficients between the self-compassion factor and compassion toward other people of .44, between compassion toward other living beings and compassion toward other people of .49, and between self-compassion and compassion toward other living beings of .32. As per the authors of the scale (Nas & Sak, 2021), these correlation coefficients did not indicate a multicollinearity problem between the sub-dimensions. Additionally, various fit indices of the data reported by Nas and Sak (2021) indicated an acceptable to good level of fit, $\chi^2/df = 1.871$, RMSEA = .042, RMR = .060, IFI = .96, CFI = .96, NFI = .91, RFI = .90, GFI = .94, AGFI = .92. The internal consistency coefficient estimate of the data of the overall 20-item scale was .89, and between .75 and .86 for the three sub-dimensions. The split-half reliability coefficient of the overall scale data was .75, and between .79 to .82 for the three sub-dimensions (Nas & Sak, 2021). In this study, Cronbach’s alpha coefficients of the data for the three sub-dimensions were above .70 (i.e., .77 for compassion for others, .74 for compassion for self, and .79 for compassion for other living beings) when measured at the T1 time point, indicating acceptable internal reliability (Taber, 2018).

In summary, the overall scale and its subscales seemed to have acceptable psychometric evidence of validity and reliability of the data. One limitation of this scale was that it had not yet been tested beyond the Turkish adolescent population. However, not many alternative compassion scales existed that were suitable for adolescent populations.

Classroom Quality

Exploring students' perceptions of the value of the overall intervention and their perceptions of classroom activities is essential to understanding the classroom quality of the intervention. First, I assessed treatment group participants' perceptions of the value of the overall intervention with the question, "How would you rate this program overall?" on a 5-point Likert-type scale ranging from 1 (*poor*) to 5 (*excellent*). Further, I asked, "Explain your rating by giving examples." I administered these two questions at the beginning of the personal interviews with select students. I elaborate on the open-ended survey item in the qualitative design section later.

Also, I quantitatively assessed participants' perceptions of classroom quality using the Student Perceptions of Classroom Quality scale (SPOCQ; Gentry & Owen, 2004; Wu et al., 2018) administered as a survey. The SPOCQ scale measures five affective constructs: appeal, challenge, choice, meaningfulness, and academic self-efficacy. These five variables served as outcomes in the assessment of student engagement in the intervention in Research Question 3. Appeal refers to interest and enjoyment (e.g., "I find the contents of my class interesting"). Challenge consists of rigor, depth, and complexity (e.g., "I learn best when I am challenged"). Choice consists of "empowering students to direct and make important decisions about their learning" (Gentry & Owen, 2004, p. 21; e.g., "I am given lots of choices in my class"). Meaningfulness relates to relevance to students' lives (e.g., "In my class, I explore real issues that affect the world around me"). And academic self-efficacy refers to students' perceived confidence in performing important classroom tasks (e.g., "I can express my opinions clearly in this class").

SPOCQ consists of 38 items answered on a 5-point Likert scale ranging from 1 "*strongly disagree*," 2 "*disagree*," 3 "*undecided*," 4 "*agree*," to 5 "*strongly agree*." See Appendix D for the items and scoring guidelines. Thirty-four items of the scale yield mean sub-scale scores for five constructs of SPOCQ. Greater scores indicate greater levels of the measured constructs.

SPOCQ was initially validated on a large sample ($n = 7,411$) of secondary students (grades seven through 12) in regular and non-traditional schools in Poland and the United States (Gentry & Owen, 2004). Later, Wu and colleagues (2018) evaluated the psychometric properties of SPOCQ for use with students with diverse gifts in a summer enrichment program setting. In the initial validation study, Gentry and Owen (2004) reported internal consistency reliability estimates of the data to be ranging between .81 to .85 for the five sub-scales. The model was

adequately fit. Differences by gender and grade level were significant but practically negligible (partial eta-squared < .01; Gentry & Owen, 2004).

Wu and colleagues (2018) revised five classroom-specific items (i.e., items 9, 19, 20, 26, 30) from the original measure to fit the scale for out-of-school programs. They found internal consistency reliability estimates of the data to be in the range of .83 to .89 for the five sub-scales. They also found the model to be a better fit compared to the previous version of the instrument (chi-square = 3,600.016; RMSEA = 0.078; CFI = 0.823). This version of SPOCQ is better suited for out-of-school programs. My colleagues and I (Chowkase et al., 2022) have used this scale in India with adolescents with intellectual gifts. We reported Cronbach's alpha coefficients of the SPOCQ data in the range of .82 to .90. In this study, Cronbach's alpha coefficients of the data for SPOCQ were in the range of .67 to .87 when measured at T1 and between .73 and .84 when measured at T3. Overall, these results indicate acceptable internal reliability (Taber, 2018).

In summary, SPOCQ seems to have excellent psychometric properties and is useful in school-based and out-of-school settings enrolling adolescents with diverse gifts. The revised version of SPOCQ by Wu and colleagues (2018) was more appropriate for this study compared to the original version that was validated in school-based settings. This is because the focus of this study is non-academic (i.e., empathy, compassion, prosocial behavior) even if conducted in a school setting at research site 1 and that research site 2 is situated in an out-of-school setting.

Potential Confounding Variables

Two variables, that is, treatment and research site, were used for the analysis to examine their potential confounding effects on the key outcomes.

Treatment

I identified participants in the treatment group (coded as *1*) and control (delayed treatment) group (coded as *0*) using an independent variable named treatment.

Research Site

I also used the research site variable (coded as *1* for site 1 and as *0* for site 2) only to examine if cross-site differences existed in the data. This variable was not a part of any main

analyses as guided by the research questions unless there were significant cross-site differences in the data.

Key Covariates

I also used four covariates, namely, gender, social connectedness, social desirability, and adherence.

Gender

Gender served as a covariate. With the random assignment of student participants into two conditions at two sites with more boys (55%) than girls (45%) in the total pool of participants ($N = 129$), 55% of the students in the treatment group were boys. I used participants' self-reported gender categories, that is, girl (coded as 1), boy (coded as 0), and other (coded as 2).

Social Connectedness

Social connectedness refers to one's opinion of self in relation to other people. The Social Connectedness Scale (SCS) by Lee and Robbins (1995) is widely used in the research on social connectedness and belonging. SCS is a scale of "general emotional distance between self and others that may be experienced even among friends and close peers" (p. 236). SCS has eight items. These items are a mixture of three aspects of belongingness: connectedness (4 items), affiliation (3 items), and companionship (1 item). SCS is a self-report 6-point Likert scale ranging from 1 "*strongly agree*" to 6 "*strongly disagree*." See Appendix E for the items and scoring guidelines. The scale yields a full-scale score of social connectedness with a range of 8 to 48, which was used for operationalizing the construct in this study. Greater scores reflect a greater sense of social connectedness and belongingness.

Lee and Robbins (1995) reported the mean for the Social Connectedness Scale as 38.85 ($SD = 8.09$) with a potential range of eight to 48. Further, the internal consistency reliability estimate of the data was .91 and the test-retest reliability estimate of the data over two weeks was .96. That is, SCS seems to have strong internal reliability and stability. As per its authors, goodness of fit indices indicated an acceptable model fit, $\chi^2(103) = 260.04$, $p < .05$; $\chi^2/df = 2.5$;

GFI = .899; RMSEA = .080; IFI = .916 (Lee & Robbins, 1995). The authors validated SCS on undergraduates, but the scale may be appropriate to be used with adolescents given the simplicity of its items. In this study, Cronbach's alpha coefficient of the data for SCS was .88 when measured at the T1 time point, indicating excellent internal reliability (Taber, 2018).

Social Desirability

Self-report measures are prone to social desirability in participants' responses; therefore, in this study, I measured and controlled for social desirability using Reynold's Short Form C of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). Social desirability relates to the tendency of faking good or faking bad. It is defined as the "need for subjects to respond in culturally sanctioned ways" (Crowne & Marlowe, 1960, p. 354) and the "need for social approval" (Crowne & Marlowe, 1964). In their original 33-item scale, Crowne and Marlowe (1960) designed 18 items that describe desirable but uncommon behaviors (e.g., "No matter who I'm talking to, I'm always a good listener") and 15 items that describe socially undesirable but common behaviors (e.g., "There have been occasions when I took advantage of someone"). Participants respond to each item with a "*true*" or "*false*," and a point is scored for each socially desirable choice. A "*true*" for the socially desirable items and a "*false*" for the socially undesirable items results in a score of 1. For example, if a respondent chooses a "*true*" for item 13 (i.e., "No matter who I'm talking to, I'm always a good listener"), which is considered a socially desirable choice, counts as one point.

Reynolds developed three short forms (i.e., short forms A, B, and C) from the original 33-item, Marlow-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960). Reynold's Form C consists of 13 items directly taken from the original 33-item MCSDS. In short form C, five items are keyed true, and the remaining eight items are keyed false. See Appendix F for the items and scoring guidelines. The scale yields an overall total score of social desirability. Greater scores indicate greater social desirability.

MCSDS and its short forms are widely used in research involving self-report measures to assess and control for response bias. Several researchers have assessed and approved the psychometric properties of MCSDS and its short forms (e.g., Fisher & Fick, 1993; Loo & Thorpe, 2000; Reynolds, 1982) on different samples. Based on data from 608 undergraduate

students, Reynolds showed his short-form C demonstrated an acceptable level of reliability of the data ($r_{KR-20} = .76$). Further, short-form C correlated most highly with full MCSDS ($r = .93$). Of short forms A, B, and C, Reynolds (1982) found form C had the best reliability and validity evidence and recommended it as a viable short form for use in the assessment of social desirability response tendencies.

However, some researchers (e.g., Barger, 2002) discourage the use of MCSDS and its short forms on empirical and conceptual grounds. Furthermore, although MCSDS has been extensively used with adolescents and adult samples (Leite & Nazari, 2020), a meta-analysis of 1,069 studies of MCSDS revealed the reliability estimate for male adolescents' scores was as low as .53 (Beretvas et al., 2002). Also, the original claim by Crowne and Marlowe (1964) that MCSDS measures a single latent trait of need for approval has been contested by many (Leite & Beretvas, 2005; Loo & Thorpe, 2000).

Despite these shortcomings with MCSDS, there is some utility in using it in the current study because the three key variables in this study, empathy, compassion, and prosocial behavior, may be prone to social desirability, and the use of MCSDS-Form C, which is shown to have better psychometric properties than other similar scales, allowed me to assess and control for social desirability in responses. In this study, I examined the correlations between responses on the social desirability scales and the data collected using the scales/subscales of empathy, compassion, prosocial behavior, and social connectedness. If social desirability indicated medium or large correlations with these scales, I used social desirability as a covariate in the analysis of the effectiveness of the intervention to control for the social desirability bias.

Adherence

Adherence served as an indicator of compliance to the intervention and a predictor variable in the assessment of the intervention effectiveness in Research Question 4. I assessed participants' adherence to the intervention using three measures represented by four variables: (a) attendance at the weekly sessions, (b) amount of completed formal and informal home practice, and (c) frequency of completed journal entries (See Appendix G). Teachers and I recorded the attendance of each participant throughout the weekly sessions. The attendance variable was a cumulative frequency of sessions attended out of 10 sessions of the intervention,

with a range of zero to 10. In the virtual format, if a participant attended more than 50% of the instruction time in a given session, they were marked to be present.

Participants also received formal and informal home practice assignments each week. The formal task was a daily meditation exercise of about five to 10 minutes. The informal tasks included home activities and sometimes involved parents, peers, or community members. See Table 1 for activity details. There were eight home practice activities in total. Participants were given a Google Forms survey every week to record the amount of formal (meditation) and informal (home activity) practice they completed at home. For the formal task, the participants reported the number of days in a week they meditated at home. For the informal task, the participants reported the completion of home activity tasks on a scale of zero to 10. The participants received full credit for a task if they reported completing more than half of it (i.e., self-ratings of 5 or more). At the end of the intervention, I separately computed the total formal and informal home practice tasks completed over time. Finally, I also counted the total number of weekly journal entries submitted over time. This score ranged from zero to 10. I have described journal entries in greater detail in the qualitative data collection methods section.

Data Collection and Timeline

With the help of intervention teachers, I collected data on the abovementioned measures using online surveys conducted via Google Forms. Table 3 summarizes the timeline of the quantitative data collection.

Quantitative Data Analyses

The quantitative data analysis process in this study had two key goals and was guided by Research Questions 1 to 5. The first goal was to examine the interrelationships among the central constructs of concern for others (see Research Question 1). In this analysis, the key outcome variable was prosocial behavior. The predictor variables were constructs of empathy (i.e., perspective taking and empathic concern) and constructs of compassion (i.e., compassion for self, compassion for others, and compassion for other living beings). Key covariates were social connectedness and social desirability. Gender served as a moderator of the relationship between the predictor variables and prosocial behavior. In addition, I examined differences in the focal

outcome variables by research site and treatment condition based on pre-intervention data (T1) to determine whether to include the research site and treatment as independent variables in this and the further analysis of intervention effectiveness.

Table 3. Timeline of Quantitative Data Collection

Instrument (<i>N</i> of items)	Pre- intervention assessment (T1)	Mid- intervention assessment (T2)	Post- intervention assessment (T3)	Six-week follow-up assessment (T4)	Three- month follow-up assessment (T5)
Prosocial behavior (16)	✓	✓	✓	✓	✓
Empathy (14)	✓	✓	✓	✓	✓
Compassion (20)	✓	✓	✓	✓	✓
Classroom quality (34)		✓*	✓*		
Social connectedness (8)	✓	✓	✓	✓	✓
Social desirability (13)	✓	✓	✓	✓	✓
Adherence (4)	Weekly from T1 to T3 for 10 weeks				

*These assessments were conducted one week before T2 and T3 assessments to de-densify the assessments conducted on the days of T2 and T3.

The second goal of the quantitative data analysis was to assess the effectiveness of the intervention in developing a concern for others (see Research Questions 2, 3, 4, and 5). The focal outcome variables in Research Questions 2 and 4 were constructs of empathy, constructs of compassion, and prosocial behavior. Constructs of perceived classroom quality served as outcome variables in Research Question 3. Gender served as an independent variable in Research Questions 2 and 3. Treatment condition served as an independent variable in Research Question 2. In addition, constructs of adherence served as independent variables in Research Question 4. In Research Question 5, I examined the extent to which past prosocial behavior predicted future prosocial behavior. Thus, post-intervention prosocial behavior (T3) served as the predictor and follow-up prosocial behavior (T5) served as the outcome. In addition, constructs of post-intervention empathy (T3) and compassion (T3) served as covariates. Table 4 summarizes the participants, variables, and analysis conducted to answer these research questions. The details are further described below.

Table 4. Analysis Summary

RQ	Participants	Variables				Analysis
		DV	IV	Moderator	Covariate	
1a, 1b	T, C	PB	PT, EC, CS, CO, COL	Gender	SC, SD	Correlation (1a, 1a.1), Stepwise hierarchical multiple regression (1b, 1b.1)
2a, 2b, 2c	T, C	PB, PT, EC, CO	Time, Treatment	Gender		Descriptive (2a), R-MANCOVA/R-MANOVA with post hoc analyses (2b, 2c)
3a, 3b	T	Appeal, Challenge, Choice, Meaningfulness, Academic self-efficacy	Time	Gender		Descriptive, Hotelling's T-square test with post hoc analyses (3b)
4a, 4b	T	Residual changes in PT, EC, CO, and PB	Attendance, Formal practice, Informal practice, Journal entries	Gender		Descriptive (4a), Correlation (4b)
5a, 5b	T, C	PB (T5)	PB (T3)	Treatment	SD (T3), PT (T3), CO (T3)	Stepwise hierarchical multiple regression

Note. RQ = Research Question. C = Control group, T = Treatment group. CS = Compassion for self, CO = Compassion for others, COL = Compassion for other living beings, EC = Empathic concern, PB = Prosocial behavior, PT = Perspective taking, SC = Social connectedness, SD = Social desirability. T3 = Post-intervention assessment, T4 = Follow-up assessment. R-MANCOVA = Repeated-measures multivariate analysis of covariance, R-MANOVA = Repeated-measures multivariate analysis of variance.

Research Question 1

Research Question 1: What relationships exist among the key variables in having a concern for others at the first time of data collection (T1)?

- a. What correlations exist among measured empathy (T1), compassion (T1), prosocial behavior (T1), social connectedness (T1), and social desirability (T1)?
 1. To what extent do these relationships vary by gender (T1)?
- b. To what extent do measured empathy (T1) and compassion (T1) predict measured prosocial behavior (T1)?
 1. To what extent does this relationship vary by gender?

In response to RQ 1a, to assess the relationships among the focal constructs of concern for others, I first computed Pearson's bivariate correlations among constructs of empathy (T1), constructs of compassion (T1), prosocial behavior (T1), social connectedness (T1), and social desirability (T1). Constructs of empathy included perspective taking and empathic concern. Constructs of compassion included compassion for self, compassion for others, and compassion for other living beings.

In response to RQ 1a.1, I computed Pearson's bivariate correlations among constructs of empathy (perspective taking and empathic concern) (T1), constructs of compassion (compassion for self, compassion for others, and compassion for other living beings) (T1), prosocial behavior (T1), social connectedness (T1), and social desirability (SD) (T1) separately by gender to examine if the patterns of correlations were different or similar. Also, I examined the Point-Biserial correlations between potential confounders (i.e., research site and treatment groups) and key outcome variables (i.e., constructs of empathy, compassion, and prosocial behavior at T1). If these variables (including gender) and outcome variables were not correlated, I dropped the independent variables of gender, site, or treatment from the later regression analysis to test parsimonious models. Thus, these correlation analyses served as the preliminary analysis for examining underlying assumptions for multiple regression, including multicollinearity of the key variables (i.e., constructs of empathy and compassion) and eliminating variables that may not serve as moderators.

In response to RQ 1b, I first examined the relationship between prosocial behavior (T1) and predictor variables—constructs of empathy (T1) and compassion (T1) using a stepwise hierarchical multiple regression analysis. I controlled for the effect of social desirability. The

construct of social connectedness was removed from this analysis based on the preliminary results.

$$\widehat{Prosocial}_{T1} = B_0 + B_1PT_{T1} + B_2EC_{T1} + B_3CS_{T1} + B_4CO_{T1} + B_5COL_{T1} + B_6SD_{T1}$$

Here, PT and EC indicate the two constructs of empathy--perspective taking and empathic concern, respectively. CS, CO, and COL indicate the three constructs of compassion—compassion for self, compassion for others, and compassion for other living beings, respectively. SD indicates the covariate, namely, social desirability. Figure 4 depicts a statistical diagram for this model.

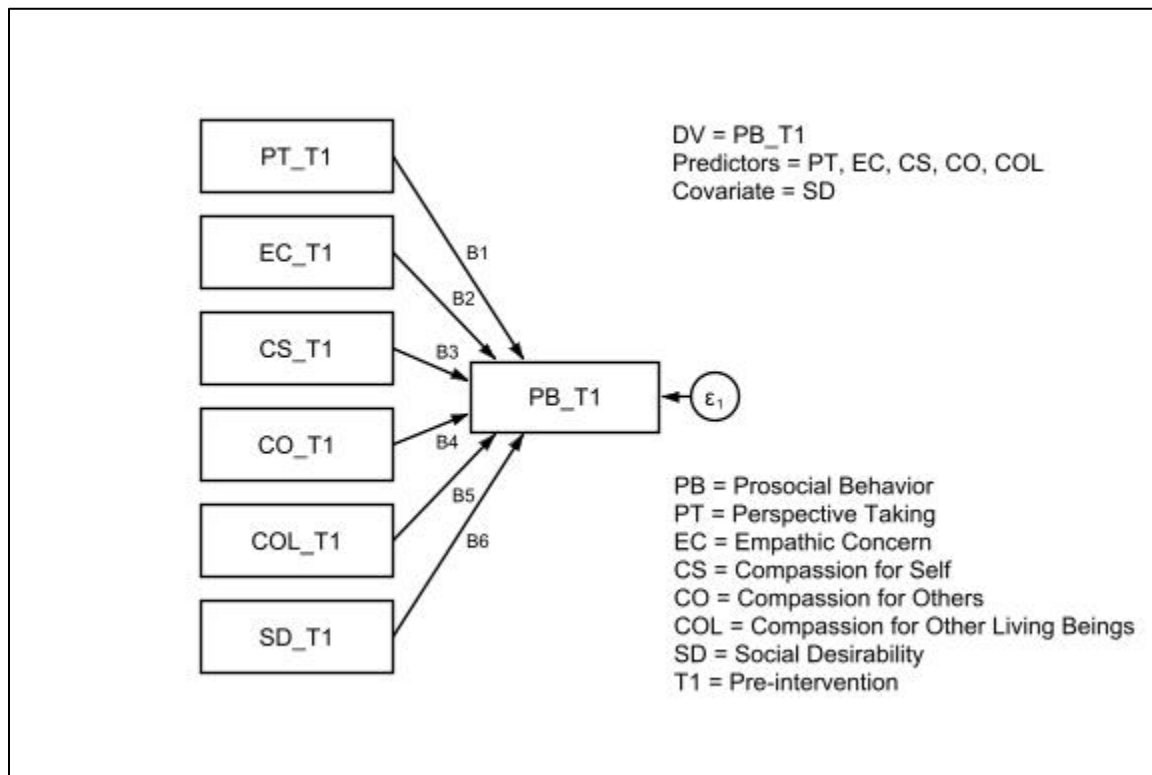


Figure 4. Statistical Diagram Representing RQ 1b

Further, in response to RQ 1b.1, I examined the extent to which gender moderates the relationship between prosocial behavior (T1) and constructs of empathy (T1) and compassion (T1). For this analysis, I examined the significance of the interactions between gender and predictor variables. Specifically, I examined the conditional effects of constructs of empathy and compassion on the prosocial behavior of boys and girls. I reduced the model further based on the results of the previous hierarchical regression analysis by keeping only the predictors that

significantly influence the dependent variable. In RQ 1b and 1b.1, the significance of a regression coefficient reflected the unique contribution of each predictor including interactions. Figure 5 depicts a statistical diagram for this model.

$$\widehat{Prosocial}_{T1} = B_0 + B_1PT_{T1} + B_2CO_{T1} + B_3SD_{T1} + B_4GEN + B_5GEN * PT_1 + B_6GEN * CO_{T1} + B_7GEN * SD_{T1}$$

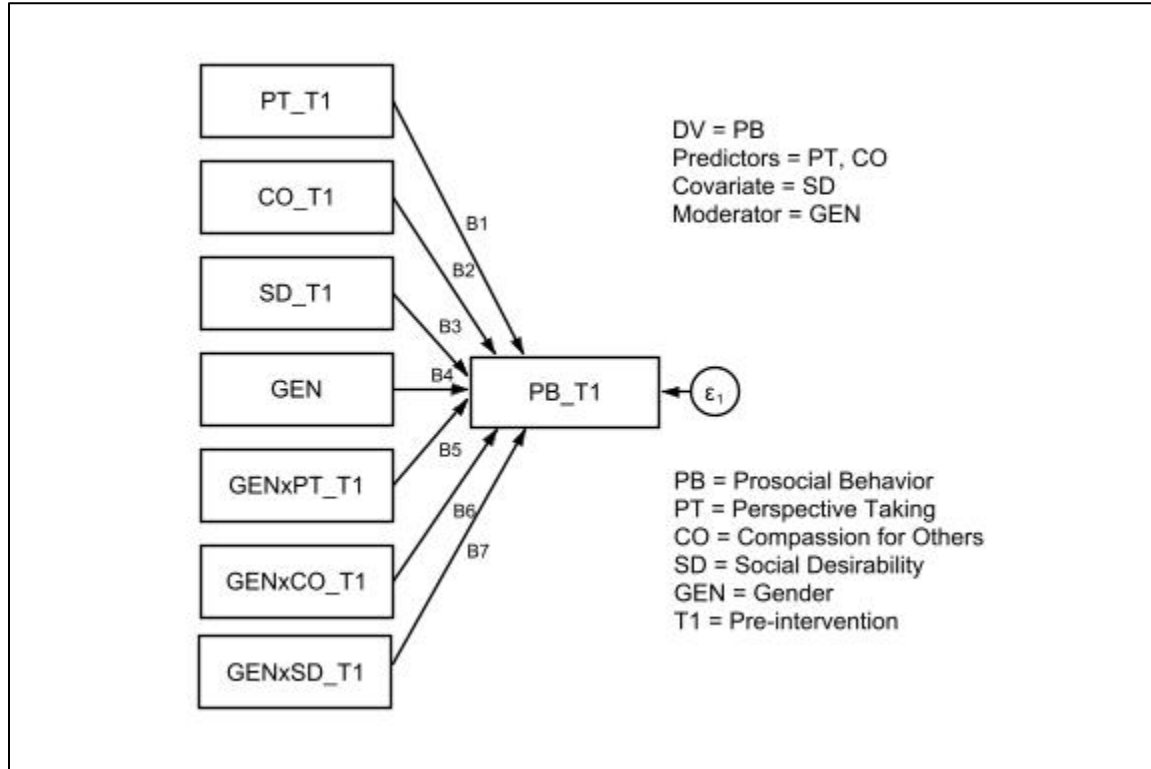


Figure 5. Statistical Diagram Representing RQ 1b.1

Research Question 2

Research Question 2: Does treatment and control group participants' self-reported concern for others change over the time of their participation in the intervention?

- a. What descriptive patterns exist in the participants' change in self-reported concern for others over the time of their participation in the intervention?
- b. To what extent does the participants' self-reported concern for others vary over the time of their participation in the intervention?

- c. To what extent does gender explain the variability in the participants' self-reported concern for others over the time of their participation in the intervention?

The first step in the assessment of the effectiveness of the intervention was to examine if the treatment and control (delayed treatment) groups, separately, vary in their change in concern for others. In response to RQ 2a, I descriptively and graphically analyzed patterns in mean scores of focal outcome variables, that is, empathy, compassion, and prosocial behavior for the treatment and control groups measured at T1, T2, T3, T4, and T5. Subgroup comparisons by gender followed.

Next, in response to RQ 2b, using repeated-measures multivariate analysis of variance (RM-MANOVA), I examined differences in empathy, compassion, and prosocial behavior separately for treatment and control groups across five time-measurements (T1, T2, T3, T4, and T5). Figure 6 depicts a statistical diagram for this analysis.

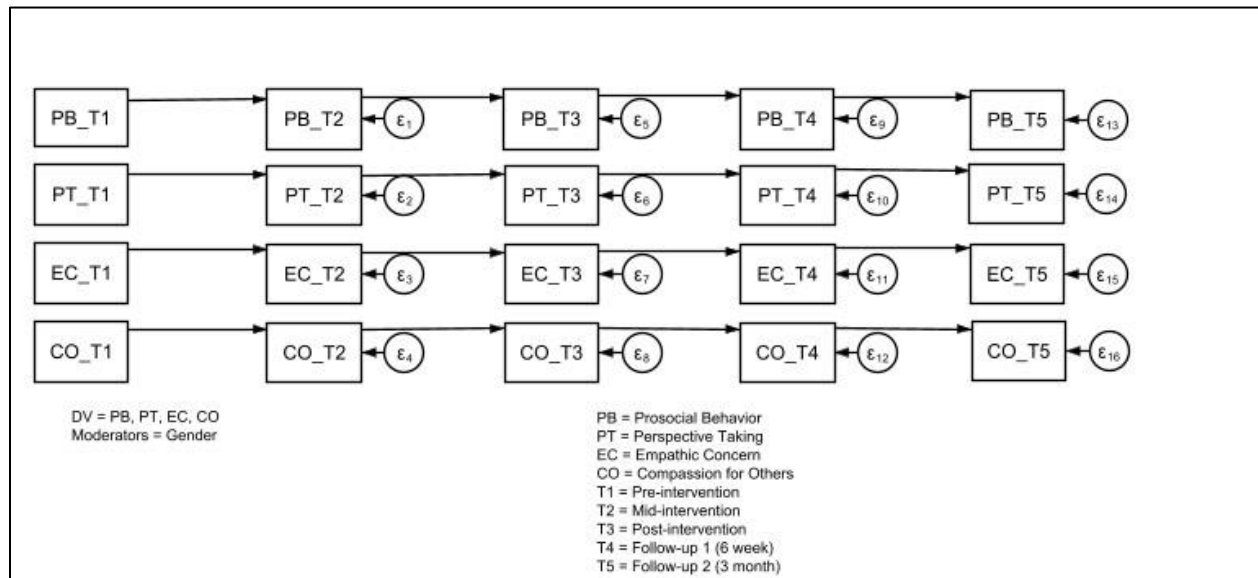


Figure 6. Statistical Diagram Representing RQ 2b and 2c

I began by checking the data assumptions of RM-MANOVA. These included the assumptions of multivariate normality, linear relationship between the pairs of variables for subgroups, multicollinearity among dependent variables, and equality of covariance matrices. Further, I examined the interaction effect of treatment and time using Wilk's Lambda test, which is a robust statistic, especially if some of the MANOVA assumptions are not met. If the time

main effect was significant, that is, if participants were significantly different concerning changes in the key outcomes at any two of the five time points, I conducted a post hoc analysis. A positive change in empathy, compassion, and prosocial behavior for students in the treatment and control (delayed treatment) groups would indicate the effectiveness of the intervention.

Finally, in response to RQ 2c, I used gender as an independent variable to examine if treatment or control groups vary by gender in their change in empathy, compassion, and prosocial behavior over five time points. A priori power analysis for a repeated-measures MANOVA (within-between interaction) for five measurements and two groups and calculated at Type I error rate (α) of .05, statistical power ($1-\beta$) of .80, and small to medium effect size (partial eta-squared = .02) indicated a requirement of a sample size of 122. This indicates a potential limitation to attain inadequate power for conducting the proposed MANOVA given that the maximum sample size in this study for either treatment or control groups is 66.

Research Question 3

Research Question 3: How do students perceive classroom quality, engagement, and motivation in learning during and after the intervention (T2 & T3, respectively)?

- a. To what extent do students' perceptions of classroom activities differ from mid-intervention (T2) to post-intervention (T3)?
- b. Do students' perceptions of classroom activities vary by gender at mid-intervention (T2) or post-intervention (T3)?

The next step in assessing the effectiveness of the intervention was to assess student perceptions of classroom quality in terms of their perceived engagement and motivation, for which, I analyzed the treatment group's SPOCQ data on the five underlying constructs: appeal, challenge, choice, meaningfulness, and academic self-efficacy at T2 and T3. Figure 7 depicts a statistical diagram for this model.

In response to RQ 3a, I first calculated mean scores for each of the five subscales and descriptively compared trends from T2 to T3. Next, I used the paired-samples Hotelling's T-square test to assess if the student perceptions of classroom quality changed significantly over the intervention. I hypothesized no significant differences in student perceptions of classroom quality over time.

In response to RQ 3b, I conducted the independent samples Hotelling's T-square test separately for T2 and T3 to assess differences in SPOCQ scores of the treatment group by gender. I hypothesized no significant gender differences in SPOCQ data of the treatment group at T2 or T3, separately.

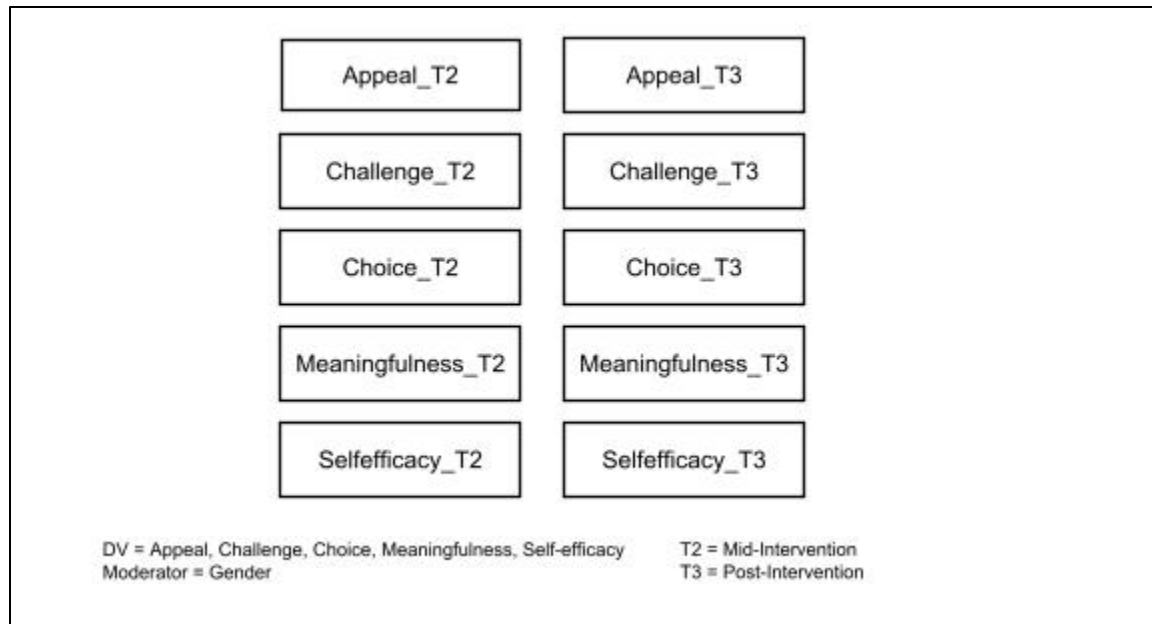


Figure 7. Statistical Diagram Representing RQ 3a and 3b

Research Question 4

Research Question 4: To what degree do students adhere to the intervention?

- a. How frequently do students attend the intervention sessions, engage in formal and informal practice at home, and complete journal entries?
- b. Is adherence associated with residual changes in self-reported empathy, compassion, and prosocial behavior from pre- to post-intervention assessment (T3 – T1)?

The final step in the assessment of the effectiveness of the intervention was to assess the degree to which participants adhered to the intervention. In RQ 4a, I descriptively examined student attendance percentages for 10 sessions of the intervention and the completion rate of informal home practice, formal home practice, and journal entries. Next, in RQ 4b, I examined Spearman's rank-order correlations between pre- to post-assessment residual change in empathy, compassion, or prosocial behavior (T3 - T1) and four aspects of adherence, that is, attendance,

informal and formal practice, and journal entry completion. Figure 8 depicts a statistical diagram for this model.

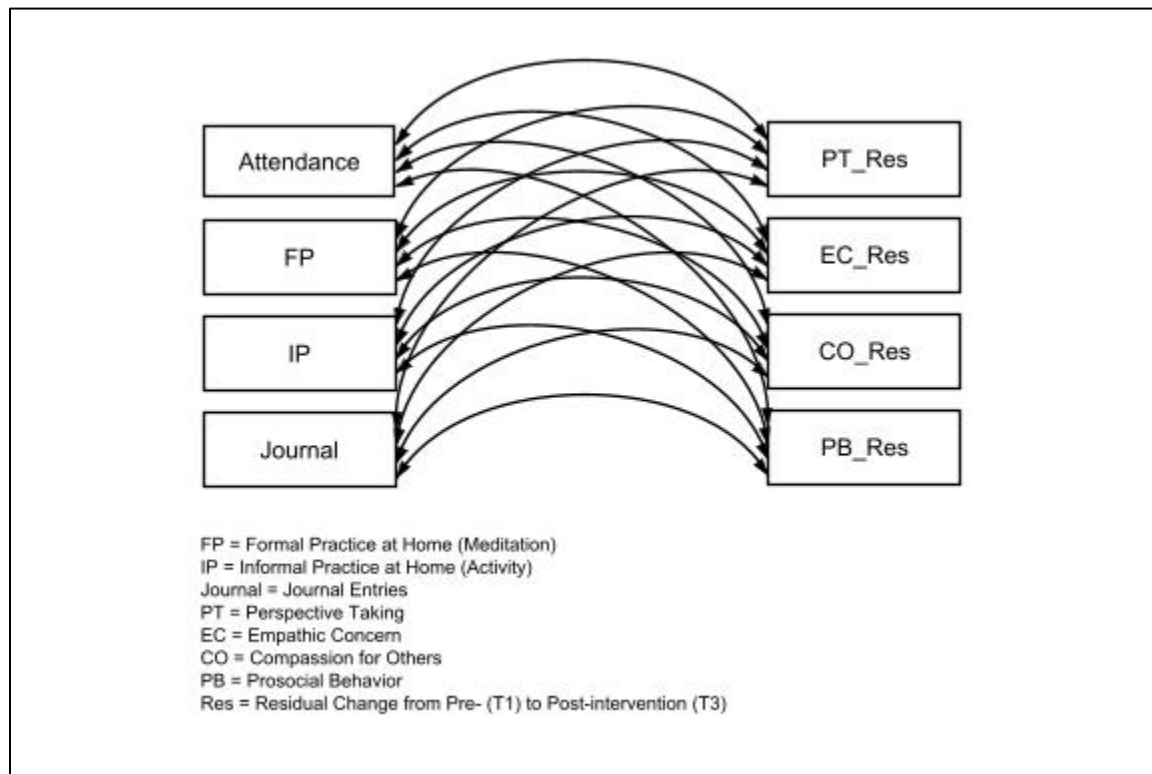


Figure 8. Statistical Diagram Representing RQ 4b

I computed residual change scores by regressing T3 scores on T1 scores and then by subtracting predicted T3 scores from the observed T3 scores. The use of residual T3-T1 change scores in place of absolute T3-T1 change allowed me to account for baseline individual differences (T1) in empathy, compassion, and prosocial behavior. Larger correlations between adherence variables and outcome variables indicated a strong relationship between practice/engagement and outcomes of the intervention. I hypothesized greater attendance, more practice, and a greater rate of journal completion are associated with greater positive changes in empathy, compassion, and prosocial behavior over time.

Research Question 5

Research Question 5: To what extent does self-reported past prosocial behavior uniquely predict self-reported future prosocial behavior?

- a. To what extent does post-intervention self-reported prosocial behavior (T3) uniquely predict future self-reported prosocial behavior (T5) beyond post-intervention self-reported empathy and/or compassion (T3)?

In response to RQ 5a, I examined the extent to which post-intervention prosocial behavior (T3) uniquely predicts future prosocial behavior (T5) beyond past empathy and compassion (T3) using a stepwise hierarchical multiple regression analysis. Figure 9 depicts a statistical diagram for this model. In this analysis, I used the data from the treatment and control groups. I used a reduced model based on the results of the previous research questions by keeping only the predictors that significantly influence the dependent variable. The significance of a regression coefficient reflected the unique contribution of each predictor.

$$\widehat{Prosocial}_{T5} = B_0 + B_1Prosocial_{T3} + B_2PT_{T3} + B_3CO_{T3} + B_4SD_{T3}$$

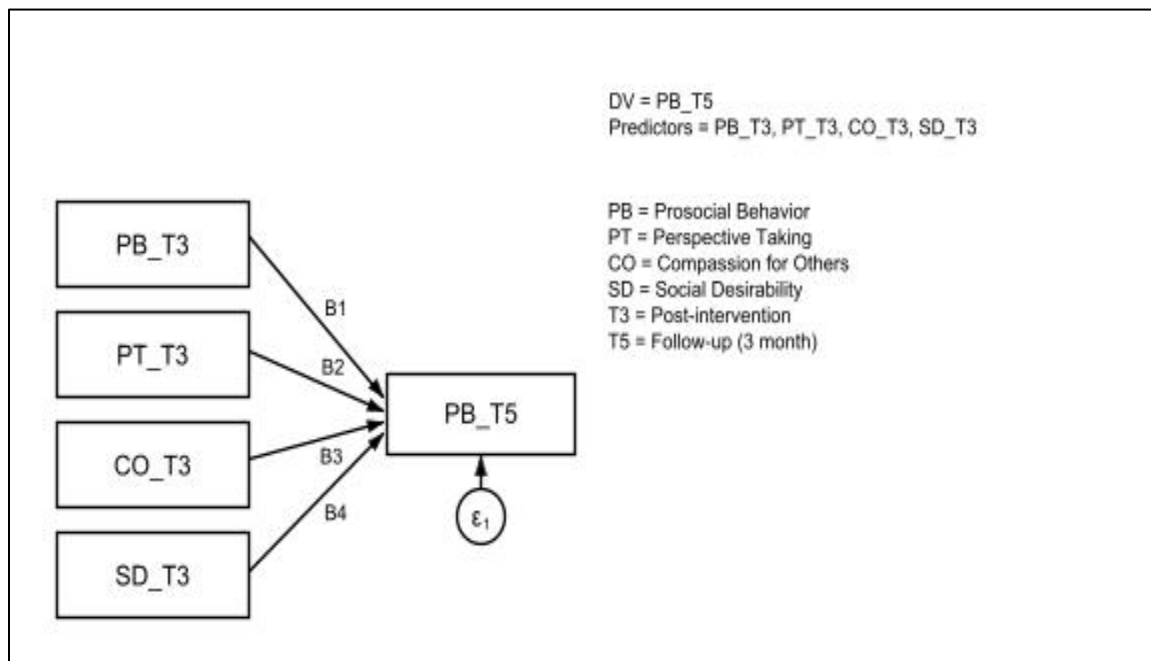


Figure 9. Statistical Diagram Representing RQ 5a

Qualitative Design

I used a basic-descriptive design as a part of the mixed-methods study to explore the effectiveness of the developed intervention program. In this design, I collected qualitative data from students and teachers using a variety of methods including classroom observations, an open-ended survey, journal entries, and interviews. The data collected from this design were used to address the following research question.

6. What are the participants' experiences in the intervention? How do students and teachers perceive the intervention? What affordances and challenges exist in the intervention for its future implementation?

In this section, I further describe the participants, data collection methods, and the timeline of data collection. I conclude with the data analysis methods used in the investigation of the quantitative research questions.

Participants

Participants in the qualitative design of this study included a subset of participants of the quantitative design of the study. Mainly, participants of the treatment group participated in the qualitative design. A subsample of 17 students and four teachers constituted the pool of interview participants. I describe participant selection procedures with the data collection methods below.

Qualitative Data Collection Methods

Demographic Survey

The research site officials provided basic demographic information about the participants. These data included participants' (a) name, (b) age, (c) sex, (d) grade in school in 2021-2022, and (e) place of permanent/family residence (Pune or outside of Pune).

Classroom Quality Survey

As mentioned in the quantitative design section, I assessed treatment group participants' perceptions of the value of the overall intervention using two questions. In the interviews, first, I

asked, “How would you rate this program overall?” on a 5-point Likert-type scale ranging from 1 (*poor*) to 5 (*excellent*). Further, I asked, “Explain your rating by giving examples.” The second question of this survey allowed the participants to explain their overall rating of the program using examples from the experiences they had during the intervention.

Classroom Observations

Classroom observations are critical to examining the fidelity of implementation. Thus, I noted classroom observations for each session taking field notes during the session. I observed participants in the treatment group during the 10 intervention sessions. School/program staff recorded the sessions conducted in an online format using Zoom video conferencing software. Observational field notes covered aspects of teacher-student interactions and student and teacher engagement. I noted unique and salient participant responses.

I approached observations through a peripheral membership role (Adler & Adler, 1987) in which my involvement in what was being observed was marginal. Participants may have noticed they were being overtly observed during the sessions, which likely changed their conduct. Therefore, I built and maintained rapport with participants using a variety of strategies including self-disclosure (i.e., sharing with participants relevant details of my own life). Self-disclosure has been one of the easiest yet most effective rapport-building strategies (Marvasti, 2014). However, I also wrote reflective memos to countercheck the affinity developed with participants because of rapport building and to enhance analytical trustworthiness.

Journal Entries

To gather personal reflections about the intervention, I asked student participants and teachers in the treatment group to maintain reflective journals. The student participants of the treatment group submitted journal entries weekly via Google Classroom in digital forms (e.g., text, image). The teachers emailed their journal entries. Participants wrote open-ended journal entries not limited by a specific prompt; however, the teachers provided them guidance on journaling during the first session of the intervention. Broadly, I encouraged the participants to reflect on their personal thoughts and feelings during the session and any changes or challenges they may have faced during or because of the session.

Student and Teacher Interviews

To gain deeper insights into the intervention and its effectiveness, I conducted semi-structured interviews with 17 students and four teachers. In these interviews, I focused on understanding participants' experiences in the intervention. Specifically, I asked them about their overall experience of the intervention, specific experiences regarding learning and engagement, and feedback about the intervention's content and learning activities. I explored the affordances and challenges of the intervention and sought recommendations for improvement. The student interview protocol consisted of 11 questions (see Appendix H). I designed this protocol after the Student Interview Protocol by Jen and colleagues (2017). I used a modified version of this protocol for teacher interviews (see Appendix I).

I sampled a total of 17 student participants, eight from Site 1 (four boys) and nine from Site 2 (five boys). Using the maximum variation purposive sampling strategy (Patton, 2015), I made efforts to maximize representation based on the family background (e.g., socioeconomic status) and individual differences in baseline scores (T1) on focal outcome variables of this study (i.e., perspective taking, empathic concern, compassion, prosocial behavior). This allowed for examining common patterns cutting across heterogeneous participants (Palinkas et al., 2015; Patton, 2015). Also, I interviewed all the teachers ($N = 4$; two each from two sites) implementing the intervention at the end of the intervention to understand their experiences, affordances, and challenges faced in implementing the intervention. Interviews took place in person. Student interviews lasted about 47 minutes on average (804 minutes, total); whereas, teacher interviews lasted about 65 minutes on average (261 minutes, total). I describe various bias reduction and trustworthiness enhancement strategies at the end of this chapter in the section entitled, "Ensuring trustworthiness of the study."

Data Collection and Timeline

I began qualitative data collection by collecting demographic information before the start of the intervention. Next, I observed all 10 classroom sessions synchronously when they were conducted. In addition, participants submitted weekly journal entries digitally during the period of the intervention. Finally, I interviewed students and teachers at the end of the intervention. Table 5 summarizes the timeline for qualitative data collection.

Table 5. Timeline of Qualitative Data Collection

Instrument (<i>N</i> of items)	Pre-intervention assessment (T1)	Mid- intervention assessment (T2)	Post- intervention assessment (T3)
Demographic survey	✓		
Classroom Quality Survey (during interviews)			✓
Classroom Observations	Weekly from T1 to T3 for 10 weeks		
Journal entries	Weekly from T1 to T3 for 10 weeks		
Interviews			✓

Qualitative Data Analyses

Research Question 6 concerns the qualitative assessment of participants' experiences in the intervention. I used data from the classroom quality survey, classroom observations, journal entries, and interviews to explore participants' intervention experiences. Interviews were audio-recorded and transcribed verbatim. Two members of the intervention design team assisted me in the qualitative data analysis. We read the data multiple times to familiarize ourselves with them (Braun & Clarke, 2006). Each of us separately documented the initial thoughts about the data in memos. We then inductively analyzed the data following the guidelines by Strauss and Corbin (1990), Saldaña (2015), Thomas (2006), and Braun and Clarke (2006). Data analysis began with open/initial coding (Braun & Clarke, 2006; Saldaña, 2015; Strauss & Corbin, 1990) using NVivo 12 software to identify initial categories of information from data. In this phase, we met 19 times virtually for a total of 42 hours. We identified over 70 initial codes and 934 references categorized in six broad categories as follows: affordances (379 references), application (169 references), challenges (80 references), learning outcomes (198 references), self-participation (84 references), and ways to improve (21 references).

Next, we used the constant comparison method (Charmaz, 2014) to organize initial/open codes into several categories and properties depicting participants' multiple perspectives about the identified categories. We maintained analytical and self-reflective memos (Saldaña, 2015) during this process to document our thoughts and key decisions about the data analysis by

describing the participants' responses and major patterns. During the second round of coding, we condensed initial/open codes to develop axial codes/potential themes (Braun & Clarke, 2006; Saldaña, 2015). Axial coding is the process of interconnecting and reorganizing the categories in a meaningful way (Strauss & Corbin, 1990). Concurrently, we developed an operational model diagram (Braun & Clarke, 2006; Saldaña, 2015) to represent the information from this coding phase into a visual coding paradigm that presents the most salient aspects of the *intervention experiences*. In this phase, we met nine times virtually for a total of 22 hours and finalized seven potential themes. Finally, we reviewed, condensed, reorganized, and labeled categories identified in the previous coding round into a cogent structure of seven salient themes that describe intervention experiences and various influences on them (Braun & Clarke, 2006).

Integrating Quantitative and Qualitative Research Strands

The overall goal of conducting the mixed-methods study was to expand and strengthen the study's conclusions by integrating quantitative and qualitative research components (Schoonenboom & Johnson, 2017). Accordingly, I integrated quantitative and qualitative components for different purposes (e.g., illustration and triangulation) and at multiple points (e.g., sampling and results). First, I used quantitative baseline scores on empathy, compassion, and prosocial behavior from the pre-intervention assessment to select diverse participants for qualitative data collection, specifically for the interviews. Further, the examination of data to answer research questions 2, 3, 4, 5, and 6 together revealed the extent to which the intervention was effective (or ineffective) and in what ways. The quantitative findings showed the extent to which the intervention was successful (or unsuccessful) in attaining its expressed goals and the qualitative data provided an understanding of the specific processes within the intervention that might have contributed to the intervention's success or failure. Specifically, I used the results from the qualitative analysis of interviews to interpret the results of the quantitative analysis of learning outcomes. In this integration of quantitative and qualitative findings, I used joint displays (Guetterman et al., 2015, 2021; McCrudden et al., 2021). Joint displays of findings are visual displays of quantitative and qualitative findings used to develop meta-inferences about mixed-methods findings.

To facilitate the use of multiple sources of qualitative data to interpret quantitative findings, I separated the data excerpts and joint displays that described intervention outcomes

(i.e., empathy, compassion, and prosocial behavior) and student engagement in the intervention (i.e., classroom quality and adherence). Thus, I used the data excerpts from interviews that described intervention outcomes to interpret the quantitative data of self-report measures of outcomes. For example, I qualitatively examined how the participants of the treatment group explained learning about and applying a concern for others and used the identified themes to confirm, contrast, or expand the findings of the qualitative strand. Also, I used the qualitative data to illustrate quantitative findings through anecdotes presented by participants in their interviews. Furthermore, qualitative data revealed a diversity of views by uncovering relationships between variables through quantitative data while also revealing meaning among participants through qualitative data (Bryman, 2006).

Similarly, I studied the responses to the qualitative item of the classroom quality survey to interpret the ratings on the quantitative item of the same survey and mean scores on SPOCQ subscales to examine students' perception of the classroom quality in the intervention. Ultimately, I developed a coherent discussion section (Chapter 5) by merging findings from quantitative and qualitative analyses that are separately presented and then integrated into meta-inferences in the form of joint displays in Chapter 4.

Ensuring Trustworthiness of the Study

Trustworthiness refers to judging the soundness of research. I employed several strategies to ensure and enhance the trustworthiness of the study in the quantitative and qualitative analyses. In the quantitative part of this research, I used measures that have excellent psychometric properties and reliability and validity evidence as explained in the sections above. I reported these properties with my data to provide confidence in the use of these measures. Finally, I supervised the instrument administration process to make sure the highest standards were followed. In the qualitative part of this research, I referred to trustworthiness as assessed by credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Further, I explain my role as the researcher and provide a positionality statement.

Positionality Statement/Role of the Researcher

I am the primary instrument of research in the qualitative part of this study. It is, therefore, critical to acknowledge my positionality (Chilisa, 2012; Kovach et al., 2013; Kwame, 2017). I am a first-generation doctoral student from an economically middle-class, urban, Marathi-speaking family in India. I completed secondary schooling in India at research site 1 in this study. My school provided many challenging and differentiated curricular and pedagogical experiences. Especially, the school instilled in me the value of prosocial behavior, which was always a central part of any important discussion at school. At home, my mother modeled prosocial behavior, which has strongly influenced me. Therefore, I firmly believe values of empathy, compassion, and prosocial behavior are critical to human lives, and all educational settings, school and non-school alike should focus on the development of these values in their students.

I have experience working with urban adolescents as an educator for 14 years, and in my previous work, I worked as a teacher at both research sites. Most of my teaching experience comes from these two research sites. Moreover, I was the founding member and head of the program being studied at research site 2 during 2017-2018. I currently closely interact with program staff at this site as a part of ongoing research collaboration. Therefore, I have a strong familiarity with the context being studied. Although this familiarity positively contributed to conducting the study and interpreting the results, it may have also limited my ability to conduct unbiased research at these sites. Therefore, I next describe the measures taken to reduce bias and ensure the trustworthiness of this study.

Reducing Biases

To counterbalance familiarity bias and other biases, I undertook intentional efforts to enhance reflexivity during the research.

Writing Theoretical Memos

Writing memos is a way to facilitate contemplation about the data and analyses, conceptual transitions from raw data to abstractions, and communication (Birks et al., 2008; Charmaz, 2014). I regularly wrote reflective memos in my field note diaries during the study. In

the initial stage of the qualitative data analysis, I began by bracketing my preconceived notions about the effectiveness of the intervention and wrote a reflective expectation memo (Tufford & Newman, 2012). In that, I noted down all the major themes I thought I would find in the data. I returned to this document at the end of the qualitative analysis to check for confirmation bias. Two colleagues involved in the qualitative analysis also wrote their positionality statements and expectation memos to assist in bracketing their bias.

In other memos, I maintained a detailed audit trail and project log of data collection and data analysis processes. Also, I developed and maintained an analytical memo to document thoughts about the data throughout the analysis processes.

Triangulation

Triangulation refers to the use of multiple data sources, observers, theories, and methods to arrive at a comprehensive understanding of studied reality (Denzin, 2017). Triangulation is employed to reduce the bias arising out of the use of a single data source, observer, theory, or method. I ensured triangulation by integrating findings of the qualitative analysis of four sources—program evaluation by students, field notes from classroom observations, interviews, and journal entries. Moreover, the use of a mixed-methods research design contributed to triangulation by providing convergence of results generated using different methods and from different participants including teachers and students.

Member Checking

Member checking is the process of inviting participants to verify the authenticity of and resonance with the processed data (Birt et al., 2016). These could be in the form of interview transcripts or actual results of the study. I sent the interview transcripts to respective participants and invited their comments, additions, and corrections. Fifteen out of 17 students and all four teachers confirmed the accuracy of their interview transcripts. Two students did not respond. One student (JB23) added a paragraph to his interview. Others only indicated minor grammatical errors. Additionally, in the post-session meetings with the teachers, I discussed my fieldnotes with them to gain a deeper and clearer understanding of the observed classroom interactions. Finally, I sent the results section of my dissertation to the teachers to evaluate the trustworthiness

of the findings. Based on their feedback, I reviewed my findings for appropriateness before I began to write the discussion section.

Peer Debriefing

Peer debriefing allows a qualified peer researcher to assess the trustworthiness of the study's data, analysis, and results (Janesick, 2015). I requested a doctoral candidate in Qualitative Research Program from an R1 university in the United States to check the translation of Marathi quotes into English for accuracy before reporting them in the dissertation report. This enhanced the accuracy of my translations. Furthermore, two members of the intervention design team reviewed all qualitative analyses and the qualitative report and provided comments. Additionally, I shared the analytical process and key findings with my advisor, Dr. Nielsen Pereira during our biweekly meetings. Finally, I consulted with Dr. Yukiko Maeda for methodological rigor and accuracy of the quantitative report and incorporated her suggestions and edits in the final report.

CHAPTER 4 RESULTS

In this chapter, I first present quantitative findings for Research Questions 1 to 5. Then, I present qualitative findings for Research Question 6. Finally, I close this chapter with a section on integrating quantitative and qualitative findings.

Quantitative Findings

Interrelationships Among Key Outcomes

Research Question 1

1. What relationships exist among the key variables, that is, empathy, compassion, and prosocial behavior, in having a concern for others at the first time of data collection (T1)?
 - a. What correlations exist among measured empathy (T1), compassion (T1), prosocial behavior (T1), social connectedness (T1), and social desirability (T1)?
 1. To what extent, if any, do these relationships vary by gender?
 - b. To what extent, if any, do measured empathy (T1) and compassion (T1) predict measured prosocial behavior (T1)?
 1. To what extent, if any, does this relationship vary by gender?

Correlational Analyses

In response to RQ 1a, to assess the relationships among the focal constructs of concern for others, I computed Pearson's bivariate correlations among prosocial behavior (T1), constructs of empathy (T1), and constructs of compassion (T1). Constructs of empathy included perspective taking and empathic concern. Constructs of compassion included compassion for others, compassion for self, and compassion for other living beings. I also included the two covariates, that is, social connectedness (T1), and social desirability (T1) in this analysis. I used listwise deletion for dealing with missing data during this two-tailed test for correlational analysis, which reduced the sample size from 129 to 100.

Table 6 represents correlations among the key variables and covariates. There was a strong positive correlation between prosocial behavior and the constructs of empathy (Perspective taking: $r(98) = .61, p < .01$; Empathic concern: $r(98) = .61, p < .01$). Similarly, there was a strong positive correlation between prosocial behavior and compassion for others, $r(98) = .79, p < .01$, and between prosocial behavior and compassion for other living beings, $r(98) = .46, p < .01$. Both findings provide evidence that empathy and compassion for others are strongly associated with prosocial behavior.

Table 6. Correlations for Study Variables: Pre-intervention Data (T1)

Construct	Variable	PB	PT	EC	CO	CS	COL	SC	SD
Empathy	PB	--							
	PT	.61**	--						
	EC	.61**	.38**	--					
Compassion	CO	.79**	.51**	.68**	--				
	CS	.01	-.06	.09	.05	--			
	COL	.46**	.26**	.41**	.54**	.01	--		
	SC	.03	.00	.11	.13	-.08	-.09	--	
	SD	.39**	.41**	.37**	.33**	-.27**	.22*	.21*	--

Note. Pearson's correlation coefficients; PB = Prosocial behavior, PT = Perspective taking, EC = Empathic concern, CO = Compassion for others, CS = Compassion for self, COL = Compassion for other living beings, SC = Social connectedness, SD = Social desirability.

* $p < .05$, ** $p < .01$

The correlation between empathic concern and compassion for others was significant, positive, and strong, $r(98) = .68, p < .01$. There was a medium, positive correlation between the two constructs of empathy, that is, between perspective taking and empathic concern, $r(98) = .38, p < .01$. And there was a strong, positive correlation between the two of the three constructs of compassion, that is, compassion for others and compassion for other living beings, $r(98) = .54, p < .01$. However, there were weak, nonsignificant correlations between compassion for self and other key variables.

In summary, prosocial behavior was positively correlated with the two constructs of empathy (i.e., perspective taking and empathic concern) and the two constructs of compassion (i.e., compassion for others and compassion for other living beings) except for the compassion for self with correlations ranging from medium to strong ($.46 \leq r \leq .79$). Compassion for self was not associated with prosocial behavior ($r = .01$) or any other key variables of having a concern

for others ($-.06 \leq r \leq .09$). The constructs of empathy, that is, perspective taking and empathic concern were only moderately correlated. However, the two constructs of compassion, that is, compassion for others and compassion for other living beings were strongly correlated. More importantly, one construct of empathy, that is, empathic concern was strongly correlated with one construct of compassion, that is, compassion for others, supporting the previously known conceptual overlap between the two constructs. Regardless, these correlations among the key predictors of prosocial behavior (i.e., perspective taking, empathic concern, compassion for others, and compassion for other living beings) were below .80.

Next, I examined correlations among the two covariates and the key variables. There were only weak and nonsignificant correlations between social connectedness and the key variables ($-.09 \leq r \leq .13$). That is, social connectedness was not significantly associated with prosocial behavior, constructs of empathy, and constructs of compassion. Therefore, I found social connectedness to be less relevant to having a concern for others and decided to remove this covariate from further analyses.

However, correlations between social desirability and the key variables were significant and weak to moderate ($-.27 \leq r \leq .41$). This indicates that self-report measures used in this study to measure prosocial behavior, empathy, and compassion may be prone to social desirability to some extent. Therefore, I decided to include social desirability as a covariate in further analyses and control for its effect on the key variables.

Gender Difference. In response to RQ 1a.1, I computed Pearson's bivariate correlations among the key variables separately by gender to examine if the patterns of correlations were different or similar. Table 7 represents correlations among the key variables for girls (Listwise $n = 48$) and boys (Listwise $n = 52$), separately. The descriptive comparison by gender indicated similar patterns of correlations among the key variables. However, correlations for girls were slightly stronger compared to boys. For example, the correlation between prosocial behavior and perspective taking was .65 ($p < .01$) for girls and .55 ($p < .01$) for boys. Similarly, the correlation between prosocial behavior and empathic concern was .70 for girls ($p < .01$) and .44 for boys ($p < .01$).

Table 7. Correlations for Study Variables: Comparison of pre-intervention data by gender

Variable	PB	PT	EC	CO	CS	COL	SC	SD
PB	--	.55**	.44**	.77**	.01	.37**	.27	.11
PT	.65**	--	.19	.46**	-.16	.26**	.16	.24
EC	.70**	.49**	--	.50**	.09	.51**	.09	.09
CO	.80**	.53**	.78**	--	.09	.64**	.13	-.03
CS	-.04	.00	.07	-.01	--	.04	-.19	-.43**
COL	.56**	.25	.34*	.45**	-.02	--	-.03	.08
SC	.03	-.03	.18	.21	.01	-.12	--	.26
SD	.55**	.51**	.52**	.55**	-.19	.34*	.26	--

Note. Pearson's correlation coefficients; PB = Prosocial behavior, PT = Perspective taking, EC = Empathic concern, CO = Compassion for others, CS = Compassion for self, COL = Compassion for other living beings, SC = Social connectedness, SD = Social desirability; the entries below and above the main diagonal represent correlations for girls and boys, respectively.

* $p < .05$. ** $p < .01$.

Correlations between social desirability and the key variables of the study were, however, much stronger for girls than for boys. For example, correlation between social desirability and prosocial behavior was .55 ($p < .01$) for girls and .11 ($p = .449$) for boys, and between social desirability and compassion for others was .55 ($p < .01$) for girls and -.03 ($p = .847$) for boys. This indicates girls' responses to the self-reported measures used in this study to measure prosocial behavior, empathy, and compassion could be more prone to social desirability compared to the responses of boys. That is, there might be a gender interaction on social desirability and its relationship with prosocial behavior. Therefore, I decided to include this potential gender interaction in the later regression analysis in RQ 1b.1.

Furthermore, I computed point-biserial correlations to determine the relationships between potential confounders, which are dichotomously coded (i.e., research site [site 1 = 1, site 2 = 0] and intervention condition [treatment = 1, control = 0]) and key variables (i.e., constructs of empathy, compassion, and prosocial behavior at T1). I also included gender [girls = 1, boys = 0] in this analysis to support my observation of different patterns in intercorrelations among variables for boys and girls discussed above. Table 8 represents the point-biserial correlations between categorical confounders and key variables. The estimated correlations between the confounding variables and key variables were weak and more importantly statistically nonsignificant ($.01 \leq r_{pb}[98] \leq .18, p > .05$) except for the following. There were statistically significant yet weak to moderate correlations between gender and prosocial behavior, $r_{pb}(98)$

= .3022, $p < .01$, meaning girls reported significantly greater scores for prosocial behavior than boys. Similarly, self-reported empathic concern for the treatment group was significantly greater than that of the control group, $r_{pb}(98) = .25$, $p < .05$. Also, self-reported compassion for self was significantly greater at Site 1 than at Site 2, $r_{pb}(98) = .29$, $p < .01$. Overall, the potential confounding variables of site and treatment assignment did not seem to have significant relationships with most of the key variables at T1. That is, these results indicate no group differences at the baseline assessment between the two sites (except for compassion for self) and between treatment and control groups (except for empathic concern) after the random assignment of the participants. The lack of baseline group differences by research site allows for aggregating the data from the two sites in the later analyses. More importantly, the lack of baseline group differences by treatment assignment allows the interpretation of treatment effects if any. Therefore, I decided not to account for the variation caused due to site differences and treatment assignments in the later regression analysis to test parsimonious models. Because gender correlated with prosocial behavior scores and indicated an interaction with social desirability, I retained the gender variable in the later regression analysis in which prosocial behavior served as the dependent variable.

Table 8. Point-Biserial Correlations among Key Variables and Possible Confounding Variables:
Pre-intervention Data

Variable	PB	PT	EC	CO	CS	COL	SC	SD
Gender	.30**	.13	.13	.18	.09	.06	-.25*	.14
Research Site	.06	.01	.11	.10	.29**	.07	-.03	-.03
Treatment	.10	.08	.25*	.15	.05	.18	-.01	.03

Note. PB = Prosocial behavior, PT = Perspective taking, EC = Empathic concern, CO = Compassion for others, CS = Compassion for self, COL = Compassion for other living beings, SC = Social connectedness, SD = Social desirability; Listwise $n = 100$.

* $p < .05$. ** $p < .01$.

In summary, the correlation analyses of T1 data revealed strong and positive relationships between prosocial behavior and other key variables (i.e., perspective taking, empathic concern, compassion for others, and compassion for other living beings) except for compassion for self. These relationships seemed to be consistent for the two gender groups. There seemed no group differences in the key variables by research site or treatment assignment. However, the self-

reported data seemed to be influenced by social desirability and needed to be controlled for in the later analyses.

The correlation analyses also served as the preliminary analyses for examining the underlying multicollinearity assumption for multiple regression and eliminating variables that may not serve as covariates (i.e., social connectedness) or confounders (i.e., research site and treatment condition).

Regression Analyses

To approach RQ 1b, I conducted a stepwise hierarchical multiple regression to evaluate the prediction of self-reported prosocial behavior (T1) from the constructs of empathy (T1) and compassion (T1) while also controlling for the effect of social desirability.

$$\widehat{Prosocial}_{T1} = B_0 + B_1PT_{T1} + B_2EC_{T1} + B_3CS_{T1} + B_4CO_{T1} + B_5COL_{T1} + B_6SD_{T1}$$

The hierarchical analysis allowed me to control for the effect of social desirability on predicted self-reported prosocial behavior and then to examine whether adding the compassion and then empathy predictors significantly improve the model's ability to predict prosocial behavior. In this nested comparison of models, the goal was to determine whether newly added sets of variables (compassion and empathy, incrementally) showed a significant and unique improvement in the proportion of explained variance in the outcome variable by the model. In this analysis, I used three models. The first model only comprised the social desirability variable, which served as the covariate. The second model additionally comprised the two constructs of compassion—compassion for others and compassion for other living beings. I excluded the third construct of compassion—compassion for self—from this analysis based on the preliminary analysis described earlier. Finally, the third model additionally consisted of two constructs of empathy—perspective taking and empathic concern. I centered all the predictors and the covariate around the grand mean in this analysis. Listwise deletion of missing values reduced the sample size from 129 to 102.

Assumption Check. I checked if the data met the key assumptions of multiple regression analysis. A visual inspection of scatterplots indicated linear relationships between the predictors and the dependent variable (i.e., prosocial behavior); therefore, the data met the linearity assumption. A visual inspection of the normal P-P plot of regression standardized residuals and histograms of the predictor variables, and the numerical inspection of their skewness (ranged

between 0 and -1.5) and kurtosis (ranged between -0.5 and +3.2) suggested multivariate normality. However, the maximum Mahalanobis distance computed for the independent variables was 27.42, which is greater than the critical value of 20.52 ($df = 5$, $\alpha = .001$). This result indicates the presence of one or more multivariate outliers. However, the multiple regression analysis is fairly robust to slight departures from normality. Next, the magnitudes of correlation coefficients among the predictors were less than .80. Also, Variance Inflation Factor (VIF) was much smaller than 10, indicating the data met the non-multicollinearity assumption. A visual inspection of the scatterplot of the regression standardized residuals versus predicted values to examine whether points were equally distributed across all values of the independent variables indicated no clear pattern in the distribution. Therefore, the data met the homoscedasticity assumption. Overall, the data met the assumptions of multiple regression analysis.

Regression Results. Table 9 represents the summary of the hierarchical regression analysis. The results of the first block hierarchical analysis revealed the model was statistically significant, $F(1, 100) = 17.18$, $p < .001$, $R = .38$, $R^2 = .15$. The R^2 value associated with this regression model suggests that the social desirability variable accounted for 15% of the total variation in predicted self-reported prosocial behavior.

For the second block analysis, I added the compassion for others and compassion for other living beings variables to the analysis. The results of the second block hierarchical regression analysis revealed the model to be statistically significant, $F(3, 98) = 58.28$, $p < .001$, $R = .80$, $R^2 = .64$. Additionally, the R^2 change value of .49 associated with this regression model suggests that the addition of the two compassion variables to the first block accounted for an additional 49% of the total variation in prosocial behavior. Compassion for others significantly predicted prosocial behavior. The regression coefficient associated with compassion for others suggests that with one unit increase in self-reported compassion for others, the predicted self-reported prosocial behavior increases by approximately 1.29 units after controlling for social desirability and compassion for other living beings. As indicated by semi-partial correlation, compassion for others ($sr = .58$) uniquely accounted for 34% of the total variance in prosocial behavior over and above other predictors in the model. Compassion for other living beings did not significantly predict prosocial behavior over and beyond other predictors in the model.

Table 9. Summary of Results of Hierarchical Regression Analysis Predicting Self-Reported Prosocial Behavior From Independent Variables

					Change Statistics					
					<i>F</i>					
Mode			Adjusted	SE of the	<i>R</i> ²	Chang				
1	<i>R</i>	<i>R</i> ²	<i>R</i> ²	Estimate	Change	e	<i>df</i> 1	<i>df</i> 2	<i>p</i>	
1	.38	.15	.14	8.15	.15	17.18	1	100	<.001	
2	.80	.64	.63	5.34	.49	67.41	2	98	<.001	
3	.83	.70	.68	4.96	.06	8.72	2	96	<.001	
						95% CI for <i>B</i>		Correlation		
Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	LB	UB	Zero-order	Partial	Semi Partial
Model 1										
Intercept	62.67	0.81		77.21	<.001	61.06	64.28			
SD (T1)	1.28	0.31	0.38	4.15	<.001	0.67	1.89	.38	.38	.38
Model 2										
Intercept	62.63	0.53		117.71	<.001	61.58	63.69			
SD (T1)	0.45	0.21	0.13	2.08	.040	0.02	0.87	.38	.21	.13
CO (T1)	1.29	0.13	0.72	9.65	<.001	1.03	1.56	.79	.70	.58
COL (T1)	0.08	0.15	0.04	0.55	.584	-0.21	0.37	.47	.06	.03
Model 3										
Intercept	62.66	0.50		126.54	<.001	61.68	63.65			
SD (T1)	0.16	0.21	0.05	0.77	.441	-0.26	0.58	.38	.08	.04
CO (T1)	0.99	0.16	0.55	6.23	<.001	0.67	1.30	.79	.54	.35
COL (T1)	0.09	0.14	0.05	0.68	.498	-0.18	0.36	.47	.07	.04
PT (T1)	0.49	0.12	0.27	3.98	<.001	0.25	0.74	.60	.38	.22
EC (T1)	0.20	0.15	0.10	1.27	.206	-0.11	0.50	.61	.13	.07

Note. PT = Perspective taking, EC = Empathic concern, CO = Compassion for others, COL = Compassion for other living beings, SD = Social desirability, T1 = Pre-intervention assessment; *n* = 102.

Finally, for the third block analysis, I added the perspective taking and empathic concern variables to the analysis. The results of the third block hierarchical regression analysis revealed the model to be statistically significant, $F(5, 96) = 43.97, p < .001, R = .83, R^2 = .70$.

Additionally, the R^2 change value of .06 associated with this regression model suggests that the addition of the two empathy variables to the second block accounted for an additional 6% of the total variation in prosocial behavior. Compassion for others and perspective taking significantly predicted prosocial behavior. The regression coefficients associated with compassion for others

and perspective taking suggest that with one unit increase in self-reported compassion for others and perspective taking, the predicted self-reported prosocial behavior increases by approximately 0.99 and 0.49 units, respectively, after controlling for other predictors in the model. As indicated by semi-partial correlation, compassion for others ($sr = .35$) and perspective taking ($sr = .22$) uniquely accounted for 12% and 5% of the total variance in prosocial behavior, respectively, over and above other predictors in the model. Empathic concern, compassion for other living beings, and social desirability did not significantly predict prosocial behavior over and beyond other predictors in the model.

In summary, the results of the hierarchical regression analysis suggest that self-reported compassion for others and perspective taking are significant predictors of self-reported prosocial behavior. Also, self-reported compassion for others is the strongest predictor of self-reported prosocial behavior when compared to other constructs of empathy and compassion.

Gender Differences. Further, in response to RQ 1b.1, I examined the extent to which gender moderates the relationship between prosocial behavior (T1) and constructs of empathy (T1) and compassion (T1). For this analysis, I examined the significance of the interactions between gender and predictor variables. Specifically, I examined the conditional effects of constructs of empathy and compassion on the prosocial behavior of boys and girls. Based on the results of the previous hierarchical regression analysis, I used a reduced model in the current analysis. That is, I excluded the non-significant predictors from the model (i.e., compassion for other living beings and empathic concern) and included only the significant predictors (i.e., compassion for others and perspective taking) and the covariate of social desirability.

$$\widehat{Prosocial}_{T1} = B_0 + B_1PT_{T1} + B_2CO_{T1} + B_3SD_{T1} + B_4GEN + B_5GEN * PT_{T1} + B_6GEN * CO_{T1} + B_7GEN * SD_{T1}$$

The hierarchical analysis allowed me to control for the effect of social desirability on self-reported prosocial behavior and then to examine whether gender moderates the relationship between self-reported prosocial behavior and self-reported compassion for others and perspective taking.

In this analysis, I used four models. The first model only comprised the social desirability variable, which served as the covariate. The second and third models additionally comprised compassion for others and perspective taking, respectively, as the main effects. The last model additionally comprised the gender variable and interactions between gender and other predictors.

I centered all the predictors and the covariate around the grand mean in this analysis. Listwise deletion of missing values reduced the sample size from 129 to 106.

Table 10 represents the summary of the hierarchical regression analysis. As expected, the results of the first three blocks of the hierarchical analysis revealed similar results as reported earlier. At the end of the third block, the model was statistically significant, $F(3, 102) = 73.43$, $p < .001$, $R = .83$, $R^2 = .68$, indicating at least one coefficient is not equal to zero. The R^2 value associated with this regression model suggests that the social desirability, self-reported compassion for others, and self-reported perspective taking variables accounted for 68% of the total variation in self-reported prosocial behavior.

Finally, for the fourth block analysis, I added the gender variable and its interactions with other predictors to the analysis. The results of the fourth block hierarchical regression analysis revealed the model to be statistically significant, $F(7, 98) = 32.57$, $p < .001$, $R = .84$, $R^2 = .70$. Gender significantly predicted prosocial behavior. The regression coefficient associated with gender suggests that the predicted self-reported prosocial behavior for girls is approximately 2.26 units greater than for boys, after controlling for other predictors in the model. Additionally, the R^2 change value of .02 associated with this regression model suggests that the addition of the gender variable and its interactions with other predictors to the third block accounted for an additional 2% of the total variation in prosocial behavior.

Also, as observed above, compassion for others and perspective taking significantly predicted prosocial behavior. The regression coefficients associated with compassion for others and perspective taking suggest that with one unit increase in self-reported compassion for others and perspective taking, the predicted self-reported prosocial behavior increases by approximately 1.16 and 0.45 units, respectively, for boys (gender = 0), after controlling for other predictors in the model. As indicated by semi-partial correlations, gender ($sr = .13$) uniquely accounted for 2% of the total variance in prosocial behavior over and above other predictors in the model. Also, compassion for others ($sr = .37$) and perspective taking ($sr = .14$) uniquely accounted for 14% and 2% of the total variance in prosocial behavior, respectively, over and above other predictors in the model. Social desirability and interactions between gender and other predictors did not significantly predict prosocial behavior over and beyond other predictors in the model.

Table 10. Summary of Results of Hierarchical Regression Analysis Predicting Self-Reported Prosocial Behavior from Independent Variables and Gender Interactions

					Change Statistics					
					<i>F</i>					
Mode			Adjusted	SE of the	<i>R</i> ²	Change				
1	<i>R</i>	<i>R</i> ²	<i>R</i> ²	Estimate	Change	e	<i>df1</i>	<i>df2</i>	<i>p</i>	
1	.38	.15	.14	8.21	.15	17.68	1	104	<.001	
2	.80	.64	.63	5.39	.49	138.40	1	103	<.001	
3	.83	.68	.67	5.05	.05	15.54	1	102	<.001	
4	.84	.70	.68	5.02	.02	1.29	4	98	.278	
							95% CI for <i>B</i>		Correlation	
									Zero-	Semi
Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	LB	UB	order	Partial	Partial
Model 1										
Intercept	62.42	0.80		77.68	<.001	60.83	64.01			
SD (T1)	1.30	0.31	0.38	4.21	<.001	0.69	1.91	.38	.38	.38
Model 2										
Intercept	62.43	0.53		118.38	<.001	61.39	63.48			
SD (T1)	0.45	0.22	0.13	2.10	.039	0.02	0.88	.38	.20	.13
CO (T1)	1.35	0.12	0.74	11.76	<.001	1.12	1.58	.79	.76	.70
Model 3										
Intercept	62.48	0.50		126.51	<.001	61.50	63.46			
SD(T1)	0.23	0.21	0.07	1.08	.282	-0.19	0.64	.38	.11	.06
CO (T1)	1.18	0.12	0.65	10.13	<.001	0.95	1.41	.79	.71	.56
PT (T1)	0.48	0.12	0.26	3.94	<.001	0.24	0.72	.58	.36	.22
Model 4										
Intercept	61.40	0.70		88.61	<.001	60.02	62.77			
SD (T1)	0.20	0.31	0.06	0.63	.531	-0.43	0.82	.38	.06	.04
CO (T1)	1.16	0.18	0.64	6.63	<.001	0.81	1.51	.79	.56	.37
PT (T1)	0.45	0.18	0.24	2.58	.011	0.11	0.80	.58	.25	.14
Gender	2.26	1.00	0.13	2.26	.026	0.27	4.24	.28	.22	.13
SD(T1)*Gen	-0.02	.44	0.00	-0.03	.973	-0.88	0.85	.43	.00	.00
CO(T1)*Gen	-0.04	.24	-0.02	-0.16	.872	-0.52	0.44	.62	-.02	-.01
PT(T1)*Gen	0.05	.24	0.02	0.22	.824	-0.43	0.54	.47	.02	.01

Note. PT = Perspective taking, CO = Compassion for others, SD = Social desirability, T1 = Pre-intervention assessment, Gen = Gender; *n* = 106.

In summary, the results of this hierarchical regression analysis suggest that gender is a significant predictor of self-reported prosocial behavior. On average, predicted self-reported prosocial behavior in girls is greater than that in boys. Self-reported compassion for others and

perspective taking are also strong predictors of self-reported prosocial behavior. However, the relationships between prosocial behavior and compassion for others or perspective taking do not significantly vary by gender.

Intervention Effects

Research Question 2

2. Does treatment and control group participants' self-reported concern for others change over the time of their participation in the intervention?
 - a. What descriptive patterns exist in the participants' change in self-reported concern for others over the time of their participation in the intervention?
 - b. To what extent does the participants' self-reported concern for others vary over the time of their participation in the intervention?
 - c. To what extent does gender explain the variability in the participants' self-reported concern for others over the time of their participation in the intervention?

The first step in the assessment of the effectiveness of the intervention was to examine if the participants' self-reported concern for others changed over the time of their participation in the intervention. In this pursuit, I examined the treatment and control (delayed treatment) groups separately because the treatment group received the intervention between T1 and T3, and the control group received delayed treatment between T3 and T5. Therefore, the control group no more served as a control group between T3 and T5. Consequently, the changes over time as assessed from these analyses do not imply causality. However, the trends may be interpreted as intervention effects with proper caution.

The Treatment Group Analyses

Descriptive Statistics. In response to RQ 2a, I descriptively and graphically analyzed patterns in mean scores of self-reported focal outcome variables, that is, prosocial behavior, compassion for others, perspective taking, and empathic concern, separately for treatment and control groups measured at T1, T2, T3, T4, and T5. Table 11 represents a summary of descriptive statistics of the key variables at five different time points. The means indicate an

overall increase in all the variables over time. For example, the mean self-reported prosocial behavior increased from 62.95 at T1 to 65.71 at T5. On average, compassion for others, perspective taking, and empathic concern also increased from T1 to T5 for the treatment group. Skewness and kurtosis values indicate all variables were nearly normally distributed.

Table 11. Descriptive Statistics for Concern for Others by Treatment

Variable	Treatment group			Control group		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
PB (T1)	61	62.95	7.88	58	62.07	9.51
PB (T2)	64	66.91	7.58	64	63.23	9.32
PB (T3)	64	66.67	7.64	65	62.98	9.38
PB (T4)	64	66.42	8.24	66	63.94	8.91
PB (T5)	62	65.71	8.94	66	66.41	8.25
CO (T1)	58	37.83	3.98	63	36.81	5.42
CO (T2)	64	39.61	3.91	64	37.11	5.68
CO (T3)	64	39.56	4.05	65	36.98	5.25
CO (T4)	64	38.78	4.33	66	37.45	5.32
CO (T5)	63	38.73	4.84	66	38.30	4.91
PT (T1)	62	18.92	4.42	63	17.63	4.69
PT (T2)	64	19.30	4.19	64	17.48	4.85
PT (T3)	64	20.27	4.62	65	18.32	5.06
PT (T4)	64	19.84	5.09	66	18.09	5.73
PT (T5)	63	19.73	4.72	66	19.03	5.58
EC (T1)	63	20.13	3.69	61	18.57	4.76
EC (T2)	64	20.33	4.65	64	19.27	3.95
EC (T3)	64	20.91	4.29	65	19.26	4.28
EC (T4)	64	20.44	4.50	66	19.23	4.14
EC (T5)	63	20.41	4.91	66	19.45	4.75

Note. PB = Prosocial behavior, PT = Perspective taking, EC = Empathic concern, CO = Compassion for others.

Figure 10 represents the mean change over time in the treatment group for (a) prosocial behavior, (b) compassion for others, (c) perspective taking, and (d) empathic concern. In general, mean scores for all variables first increased from T1 to T3, especially from T1 to T2 in prosocial behavior and compassion for others, and then decreased by some margin from T3 to T5, especially between T3 and T4. That is, the participants in the treatment group reported an overall

increase over the period of their participation in the intervention (T1 to T3) but an overall decline to some extent over the next three months (T3 to T5). Although the final mean scores at the three-month follow-up assessment were greater than the baseline scores at pre-intervention for all variables, the 95% confidence interval error bars for different times show an overlap, indicating only subtle changes over time. However, the increase in self-reported scores on all variables also seems promising for further inferential analysis.

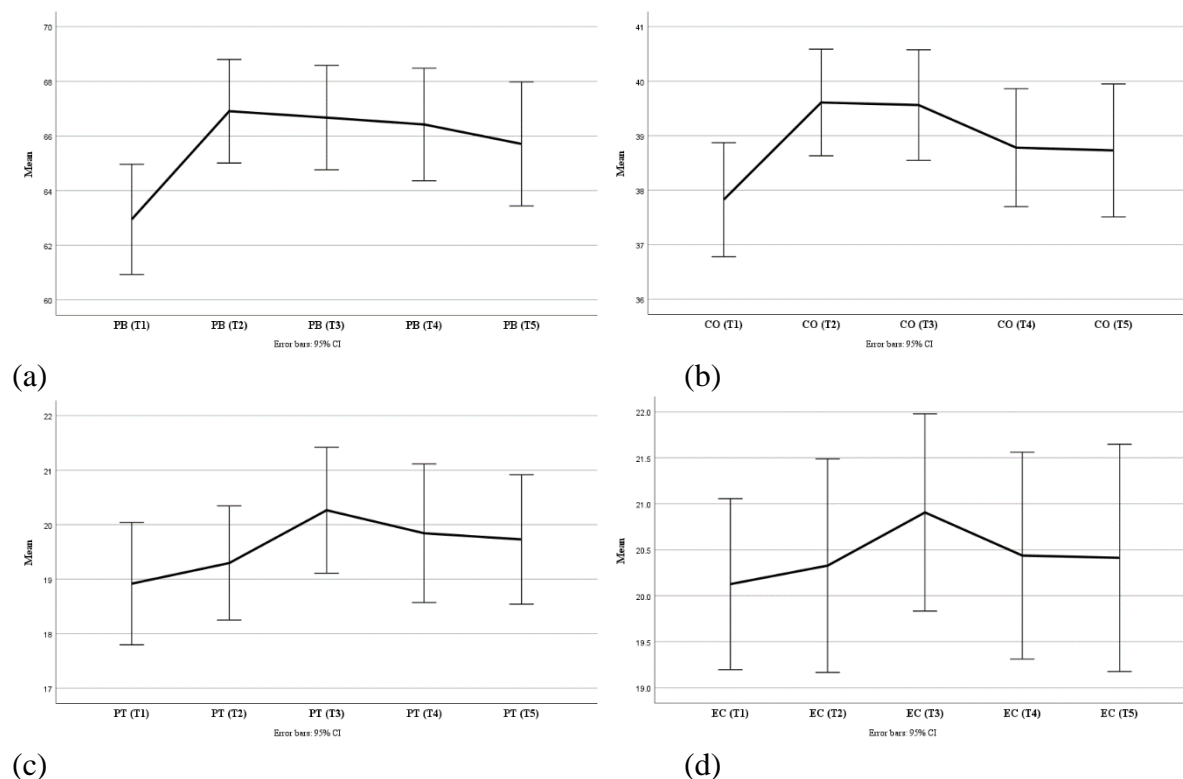


Figure 10. Mean Change Over Time: The Treatment Group

Gender Differences. Next, I analyzed the mean scores by gender. Table 12 represents a summary of descriptive statistics of the key variables at five different time points. Girls, on average, reported greater mean scores on all variables as compared to boys. The means indicate an overall increase in all the variables over time for both genders for the treatment group with two exceptions. For example, the mean self-reported prosocial behavior for the treatment group increased from 61.69 at T1 to 65.55 at T5 for boys and from 65.83 at T1 to 67.17 at T5 for girls. The exceptions are as follows. Mean scores for self-reported compassion for others remained unchanged from T1 to T5 after seeing an incline till T3 and then a decline thereafter. I speculate

this was because of an outlier in this group for T5 (Kurtosis = 4.00) in which a girl (JG28) reported her compassion for others as low as 18 on a scale of 9 to 45. The outlier may have had a disproportionate influence on the mean score given the group size is as small as 24. However, I decided not to remove the outlier from this analysis because the participant engaged well in the intervention, and the data she provided seemed authentic. The other exception was that of empathic concern among the girls in the treatment group who reported it to have declined from 20.92 at T1 to 20.79 at T5.

Table 12. Descriptive Statistics for Concern for Others by Gender and Treatment

Variable	Treatment group				Control group			
	Boys (<i>n</i> = 29)		Girls (<i>n</i> = 24)		Boys (<i>n</i> = 25)		Girls (<i>n</i> = 28)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PB (T1)	61.69	7.90	65.83	7.29	59.28	7.37	65.36	10.50
PB (T2)	64.00	6.87	71.04	6.66	60.96	6.91	67.89	9.62
PB (T3)	66.76	6.58	67.25	8.38	59.68	8.31	66.64	8.98
PB (T4)	65.41	7.92	68.92	8.56	60.52	8.39	67.43	8.55
PB (T5)	65.55	8.35	67.17	10.39	64.12	7.64	69.39	8.37
CO (T1)	37.45	4.67	38.75	3.10	35.68	3.80	38.21	6.58
CO (T2)	38.93	3.84	40.79	3.49	35.52	5.13	39.57	5.65
CO (T3)	39.45	4.24	40.46	2.96	36.04	3.97	38.07	6.49
CO (T4)	38.34	4.65	39.79	3.92	35.44	5.37	39.21	5.02
CO (T5)	39.14	4.32	38.75	5.94	36.96	3.88	40.29	4.98
PT (T1)	18.52	4.08	19.46	5.17	17.60	4.91	18.07	5.05
PT (T2)	18.10	4.30	20.79	4.10	17.44	4.10	18.21	5.39
PT (T3)	19.41	4.83	20.58	4.69	17.88	4.52	19.21	5.43
PT (T4)	18.93	5.14	20.71	5.83	17.44	4.77	19.25	6.86
PT (T5)	19.03	5.21	21.04	4.53	18.60	5.71	20.57	5.36
EC (T1)	19.97	3.43	20.92	4.06	17.32	3.33	19.61	5.83
EC (T2)	19.66	4.86	21.58	4.33	18.12	3.38	20.43	4.32
EC (T3)	20.48	4.26	21.54	4.14	17.28	3.67	20.75	4.57
EC (T4)	20.14	4.21	21.79	4.90	17.24	3.67	20.82	4.06
EC (T5)	20.48	5.00	20.79	4.96	17.84	3.31	21.18	5.48

Note. PB = Prosocial behavior, PT = Perspective taking, EC = Empathic concern, CO = Compassion for others.

Figure 11 represents the mean change over time by gender in the treatment group for (a) prosocial behavior, (b) compassion for others, (c) perspective taking, and (d) empathic concern.

In general, mean scores for all variables first increased from T1 to T3 and then sustained or decreased by some margin from T3 to T5. This was true of girls and boys. That is, boys and girls in the treatment group reported an overall increase over the period of their participation in the intervention (T1 to T3) but overall sustenance or some decline over the next three months (T3 to T5). Girls almost always reported greater means than boys as indicated by green lines over the blue lines in all the graphs in Figure 11.

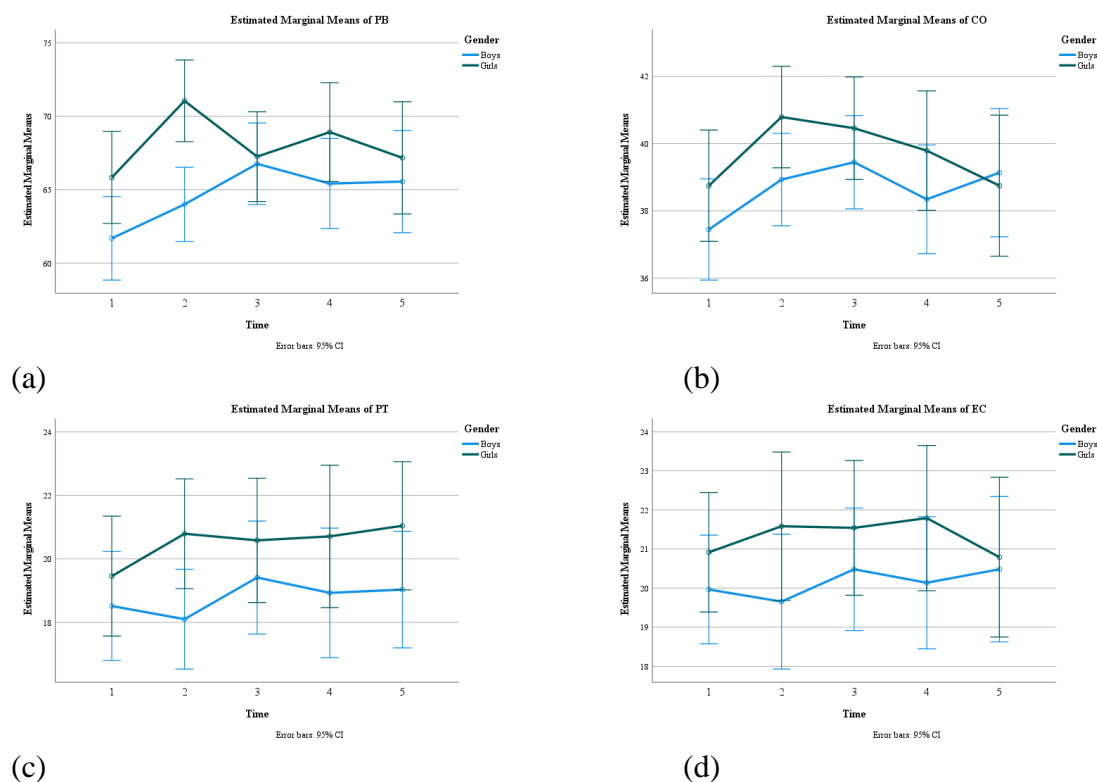


Figure 11. Mean Change Over Time: The Treatment Group by Gender

Inferential Statistics. In response to RQ 2b, I examined the extent of change in concern for others over time, separately, for the treatment and control (Delayed treatment) groups using a one-way repeated-measures multivariate analysis of variance (RM-MANOVA) with four dependent variables and five time points. In RQ 2c, I examined the extent to which the relationship between dependent variables and time varies by gender using a two-way RM-MANOVA. The dependent variables included prosocial behavior, compassion for others, perspective taking, and empathic concern. The five time points are denoted by T1, T2, T3, T4, and T5, each separated by 6 weeks.

Assumption Check. I checked the data assumptions to conduct a one-way RM-MANOVA. The inclusion of four continuous variables as a combined dependent variable and time as the multi-category independent variable sufficed the first two data requirements. At each time point, there were more participants ($n = 53$) than the number of dependent variables ($n = 4$). Therefore, the sample size was adequate for this analysis. RM-MANOVA is sensitive to multivariate outliers; therefore, I inspected boxplots for all four dependent variables, separately, for all five time points and noticed one outlier (JB30). A closer analysis of this participant's responses revealed he had marked the lowest possible or highest possible answers to all the items during the mid-intervention assessment (T2). These responses were also contradictory to his other responses in four other time points. There was a high possibility this response (T2) was unreliable; therefore, I decided to remove it from this analysis.

Next, I assessed multivariate non-normality using visual inspection of histograms and QQ plots for all four dependent variables, separately, for all five time points. I also inspected the numerical values of skewness and kurtosis and found the values to be within the acceptable ranges (i.e., between -2 and +2). Therefore, I assumed the multivariate normality assumption to be met. Further, I assessed the linear relationship assumption by inspecting the scatterplot matrices for the dependent variables, separately, for all time points. I found the relationships between all pairs of dependent variables for each time point to be linear. Finally, I assessed multicollinearity using the correlations among the dependent variables and found them to be moderate. No correlations were smaller than .3 or larger than .9; therefore, the assumption was met.

In addition to the assumptions tested above, the two-way RM-MANOVA required an additional assumption check, that of the equality of error variance of the dependent variables across groups. I checked this assumption using Levene's tests of equality of error variances and found the assumption was met for all variables across all time points except for compassion for others at T3 for the treatment group and empathic concern at T1 and T3 and compassion for others at T1 for the control group. With these four exceptions, the data met all the assumptions of this analysis. Overall, the data adequately met the assumptions for one-way and two-way RM-MANOVA.

Inferential Results. Because F -test is an omnibus test, I hypothesized at least one out of five combined means is significantly greater than others. I examined the one-way repeated-

measures differences at a .05 significance level. The use of listwise deletion of missing values reduced the sample size from 64 to 53. The one-way RM-MANOVA revealed significant time effect, $F(16, 37) = 3.00, p = .002$, Wilk's Lambda = .44, partial eta-squared = .57, suggesting a large effect of time on the combined dependent variable of concern for others. I then performed univariate *post-hoc* tests to determine which specific independent variables significantly differed from another. Univariate *post-hoc* analyses indicated significant differences with moderate effect size in prosocial behavior and compassion for others, but not in perspective taking and empathic concern (see Table 13).

Table 13. Univariate Effects of Time on Concern for Others: The Treatment Group

Variable	df^a	MS	F	p	Partial eta squared
PB	4	121.53	4.18	.002	0.07
CO	4	29.86	3.51	.005	0.06
PT	4	10.08	1.34	.129	0.03
EC	4	3.04	0.49	.370	0.01

Note. PB = Prosocial behavior, CO = Compassion for others, PT = Perspective taking, EC = Empathic concern.

^aSphericity assumed.

Gender Differences. Next, I examined gender differences in concern for others over time using a two-way RM-MANOVA with gender as a between-subjects factor and time as a within-subjects factor. I hypothesized no gender differences. The significance level was .05. The analysis included data from 29 boys and 24 girls in the treatment group.

The two-way RM-MANOVA revealed only a significant main effect of time, $F(16, 36) = 3.16, p = .001$, Wilk's Lambda = .42, partial eta-squared = .58, indicating a large effect for time on the combined dependent variable of concern for others. There was no significant main effect for gender, nor was there an interaction between gender and time (see Table 14). Thus, self-reported concern for others seems to vary with time but not by gender. Univariate *post-hoc* analyses revealed similar results as reported earlier in Table 13.

Table 14. Multivariate Effects of Time and Gender on Concern for Others: The Treatment Group

Effect	Wilks' Lambda	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>	Partial eta squared
Gender	.91	1.15	4	48	.172	.09
Time	.42	3.16	16	36	.001	.58
Time * Gender	.59	1.57	16	36	.065	.41

Control Group (Delayed Treatment) Analyses

Descriptive Statistics. The means indicate an overall increase in all the variables over time (see Table 11). For example, the mean self-reported prosocial behavior for the control group increased from 62.98 at T3 to 66.41 at T5. The other variables also showed a similar trend (see Figure 12). In general, mean scores for all variables did not first change much from T1 to T3 (no intervention) and then increased from T3 to T5 (delayed treatment). Less variability in the mean scores between T1 and T3 is as expected given the control group did not receive the intervention until after T3. However, although the participants in the control group reported an overall increase over the period of their participation in the intervention (T3 to T5), the 95% confidence intervals seem to have overlapped. That is, the changes over time might only be subtle yet indicative of the intervention effect.

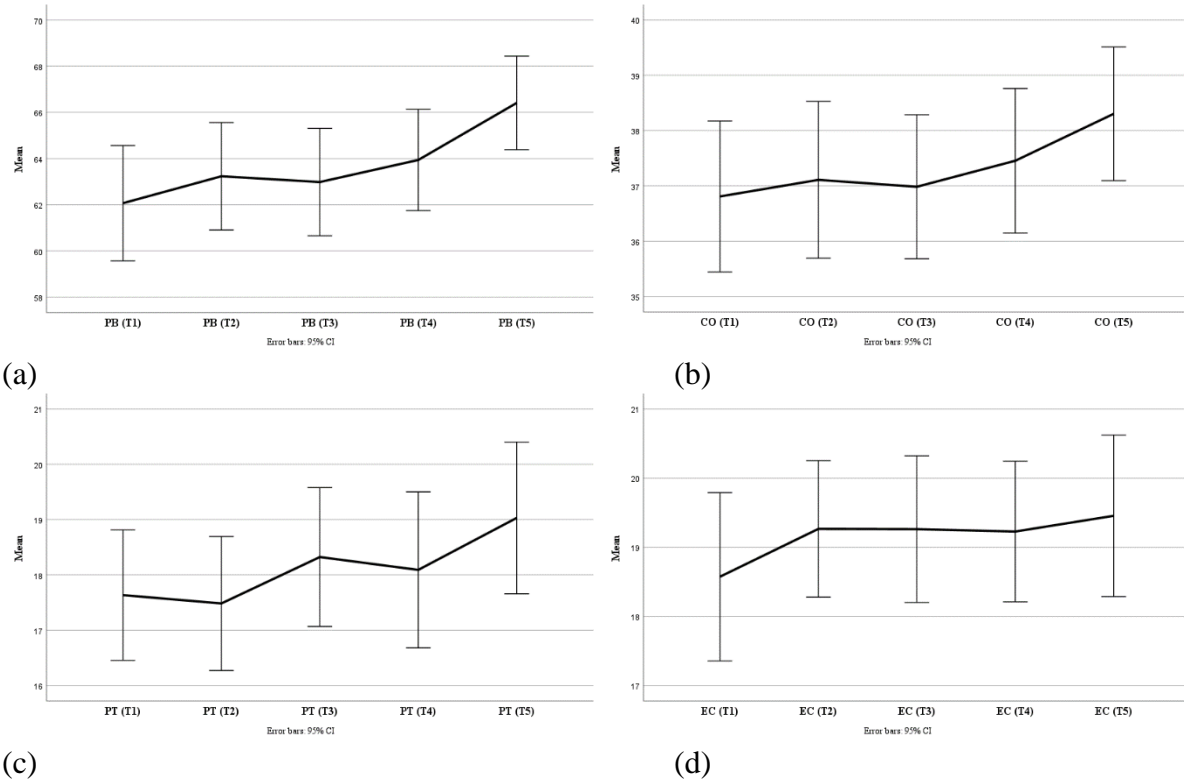


Figure 12. Mean Change Over Time: The Control Group

Gender Differences. Similar to the treatment group, girls, on average, reported greater mean scores on all variables as compared to boys (see Table 12). Also, the means indicate an overall increase in all the variables over time for both genders. For example, the mean self-reported prosocial behavior for the control group increased from 59.28 at T1 to 64.12 at T5 for boys and from 65.36 at T1 to 69.39 at T5 for girls.

In general, mean scores for all variables for boys and girls increased from T3 to T5 (see Figure 13). That is, the participants of both genders in the control group reported an overall increase over the period of their participation in the intervention (T3 to T5), which might be an indication of the presence of an intervention effect.

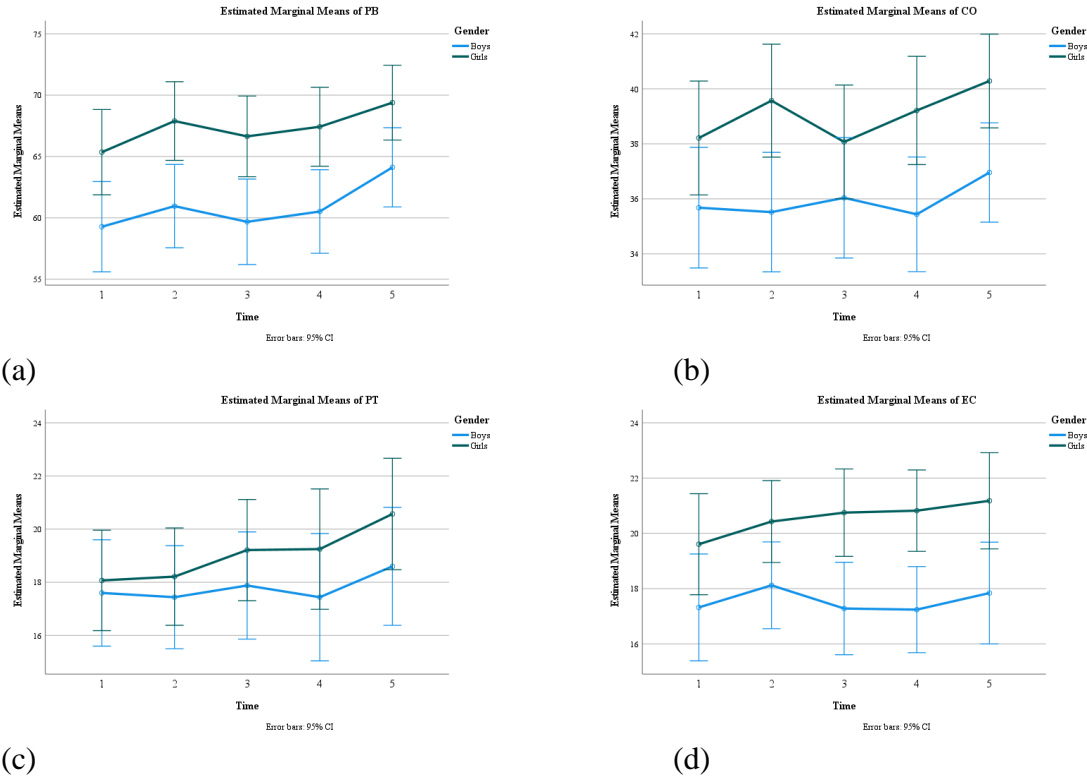


Figure 13. Mean Change Over Time: The Control Group by Gender

Inferential Statistics. The use of listwise deletion of missing values reduced the sample size from 65 to 53. The one-way RM-MANOVA revealed significant time effect, $F(16, 37) = 2.05, p = .018$, Wilk's Lambda = .53, partial eta-squared = .47, suggesting a large effect of time on the combined dependent variable of concern for others. That is, the self-reported concern for others was different at least for two time points. Univariate *post-hoc* analyses indicated significant differences with moderate effect size in prosocial behavior, compassion for others, and perspective taking, but not in empathic concern (see Table 15). Comparing the effect sizes of time on the combined dependent variable of concern for others for the treatment and control groups revealed the treatment group showed a slightly larger effect (partial eta-squared_{treatment} = .57) than the control group (partial eta-squared_{control} = .47). However, in terms of conventions of effect sizes for this comparison, both effects are considered large effects. Therefore, the effect of time seems relatively similar in the treatment and control groups. I was not physically present at research sites for the duration of delayed treatment (i.e., between T3 and T5). Therefore, the finding about similar effect sizes indicates that my physical absence during delayed treatment did not probably make any difference to the results.

Table 15. Univariate Effects of Time on Concern for Others: The Control Group

Variable	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	Partial eta squared
PB	3.08 ^a	190.49	4.53	.002	.08
CO	3.19 ^a	30.75	2.43	.032	.05
PT	2.93 ^a	39.12	3.33	.011	.06
EC	4 ^b	8.35	1.25	.147	.02

Note. PB = Prosocial behavior, CO = Compassion for others, PT = Perspective taking, EC = Empathic concern.

^aGeenhouse-Geisser correction.

^bSphericity assumed.

Gender Differences. Next, I examined gender differences in concern for others over time using a two-way RM-MANOVA with gender as a between-subjects factor and time as a within-subjects factor. I hypothesized no gender differences. The analysis included data from 25 boys and 28 girls of the control (delayed treatment) group.

The two-way RM-MANOVA revealed no significant interaction between gender and time (see Table 16); however, there was a significant main effect for gender, $F(4, 48) = 3.58$, $p = .012$, Wilk's Lambda = .77, partial eta-squared = .23, and a significant main effect for time, $F(16, 36) = 2.03$, $p = .020$, Wilk's Lambda = .53, partial eta-squared = .47. The result indicates a large effect of gender and time on the combined dependent variable of concern for others. The self-reported concern for others seems to vary with time and gender, separately, but not together. Univariate *post-hoc* analyses for the effect of time revealed similar results as reported earlier in Table 15. Univariate *post-hoc* analyses for the effect of the gender indicated significant differences with large effect size in prosocial behavior, compassion for others, and empathic concern, but not in perspective taking (see Table 17). Girls' self-reported responses yielded means greater than boys on these three variables as reported earlier in Table 12.

Table 16. Multivariate Effects of Time and Gender on Concern for Others: The Control Group

Effect	Wilks' Lambda	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>	Partial eta squared
Gender	.77	3.58	4	48	.012	.23
Time	.53	2.03	16	36	.020	.47
Time * Gender	.70	.96	16	36	.521	.30

Table 17. Univariate Effects of Gender on Concern for Others: The Control Group

Variable	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P</i>	Partial eta squared
PB	1	2731.05	11.60	.001	.19
CO	1	652.53	6.84	.012	.12
PT	1	106.90	1.02	.317	.02
EC	1	593.21	9.11	.004	.15

Note. PB = Prosocial behavior, CO = Compassion for others, PT = Perspective taking, EC = Empathic concern.

Treatment Versus Control Group (Delayed Treatment) Analysis

Finally, I compared changes over time in concern for others between the treatment and control groups. I examined treatment differences in concern for others over time using a two-way RM-MANOVA with treatment as a between-subjects factor and time as a within-subjects factor. In this analysis, I included T1, T2, and T3 assessments and excluded T4 and T5 assessments because the control group received delayed treatment between T3 and T5 assessments. This arrangement allowed for a treatment versus control group comparison. I included prosocial behavior, compassion for others, perspective taking, and empathic concern in this analysis. The treatment and control groups consisted of 53 participants each.

The two-way RM-MANOVA revealed no significant interaction between treatment and time (see Table 4.2.8); however, there was a significant main effect for time, $F(8, 97) = 3.32$, $p = .002$, Wilk's Lambda = .79, which is consistent with the results of the one-way RM-MANOVA reported above. The result indicates no effect of treatment over the time of the first implementation of the intervention on the combined dependent variable of concern for others, indicating a potential lack of effect of the intervention. However, the validity of this result is questionable given the lack of observed power (.36) to detect the interaction effect in this analysis. Hence, further research is needed with a larger sample size to arrive at a conclusive inference about the treatment versus control group comparison over time.

Table 18. Multivariate Effects of Time and Treatment on Concern for Others

Effect	Wilks' Lambda	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>	Partial eta squared
Treatment	.93	1.84	4	101	.128	.07
Time	.79	3.32	8	97	.002	.22
Treatment * Time	.94	.80	8	97	.605	.06

RQ 2 Summary

The descriptive and graphical analyses revealed the mean self-reported concern for others at T3 and T5 was greater than at T1. The RM-MANOVA analyses I conducted, separately, for the treatment and control groups revealed that their self-reported concern for others varied significantly over the time of their participation in the intervention with a large effect. Although there is a statistically significant difference over time in both groups when analyzed separately, I would not conclude that participation in the intervention caused the change in the concern for others. This is because I did not compare the two groups against each other given that the control group received delayed treatment between T3 and T5, during which it no more served as a control group. However, the findings of the MANOVA and trend analyses together provide some evidence that participation in the program might have caused the difference in concern for others over time. The result would be worth further investigation, perhaps by adding a true control group throughout T1 to T5.

Overall, the graphical representation of the mean score trends over time indicates that both gender groups from both treatment assignments reported an increase in their scores during their participation in the intervention. This provides some evidence that the intervention may have been somewhat successful in its goal to develop a concern for others during both of its cycles in girls and boys. The gender gap varied over time with no noticeable pattern among and within variables. Therefore, no conclusive inference could be drawn about a gender gap.

Further, the two-way RM-MANOVA revealed no significant interaction effect between gender and time. That is, gender did not explain the variability in the participants' self-reported concern for others over the time of their participation in the intervention. However, the same analyses provided mixed results regarding the gender difference in self-reported concern for others. Although the treatment group's self-reported concern for others did not vary significantly

by gender, it did so in the control group. The evidence seems inconclusive and further research is needed to uncover the effect of gender on concern for others.

Research Question 3

3. How do students perceive classroom quality, engagement, and motivation in learning during and after the intervention (T2 & T3, respectively)?
 - a. To what extent do students' perceptions of classroom activities differ from mid-intervention (T2) to post-intervention (T3)?
 - b. Do students' perceptions of classroom activities vary by gender at mid-intervention (T2) or post-intervention (T3)?

The next step in assessing the effectiveness of the intervention was to assess student perceptions of classroom quality in terms of their perceived engagement and motivation. For this, I analyzed the treatment group's SPOCQ data comprising five underlying constructs: appeal, challenge, choice, meaningfulness, and academic self-efficacy at mid-intervention (T2) and post-intervention (T3) assessments.

Descriptive Statistics

Table 19 provides descriptive statistics for student perceptions of classroom quality at mid-intervention (T2) and post-intervention (T3). Overall, student participants of the intervention group ($n = 64$) perceived the classes to have high classroom quality as indicated by mean scores greater than four on a scale from 1 to 5 on all five constructs measured by SPOCQ. On average, participants rated the classes the highest for appeal (T2: $M = 4.51$; T3: $M = 4.56$) and meaningfulness (T2: $M = 4.35$; T3: $M = 4.46$) and the lowest for academic self-efficacy (T2: $M = 4.01$; T3: $M = 4.14$). Except for perceived appeal, scores on the other four constructs of classroom quality were nearly normally distributed at both assessments as indicated by skewness and kurtosis values between -2 and +2. Perceived appeal at mid-intervention assessment, however, had a negatively skewed (Skewness = -2.00) and heavy-tailed (Kurtosis = 5.33) distribution, indicating the presence of outliers. The boxplot indicated an outlier in the perceived appeal (JB03: $M_{\text{appeal}} = 2.14$). There were no other significant outliers. On all the constructs, participants rated the classroom quality at the post-intervention assessment as greater than at the

mid-intervention assessment. In other words, student perceptions of classroom quality seem to have improved slightly over time.

Table 19. Descriptive Statistics for Student Perceptions of Classroom Quality

Variable	T2					T3				
	<i>n</i>	<i>M</i>	<i>SD</i>	Skew	Kurt.	<i>n</i>	<i>M</i>	<i>SD</i>	Skew	Kurt.
Appeal	63	4.51	0.54	-2.00	5.33	63	4.56	0.45	-1.21	1.05
Challenge	62	4.10	0.52	-0.64	0.56	64	4.22	0.51	-0.52	-0.36
Choice	64	4.28	0.46	-0.64	0.23	64	4.37	0.42	-0.11	-0.94
Meaningfulness	64	4.35	0.55	-0.57	-0.65	64	4.46	0.47	-0.93	1.18
Academic self-efficacy	62	4.01	0.49	-0.38	0.05	64	4.14	0.48	-0.05	-0.94

Note. The ratings are on a scale from 1 to 5; T2 = Mid-intervention, T3 = Post-intervention.

Correlational Analyses

Furthermore, I computed Pearson's bivariate correlations among the five constructs of student perceptions of classroom quality (see Table 20). At the mid-intervention assessment, all constructs significantly and positively correlated with each other ($p < .01$) (see the lower triangle in Table 20). These correlations were strong and ranged from .57 to .71. I obtained similar results for correlations in the post-intervention assessment. All the correlations were significant, positive, and strong with a range of .50 to .74, $p < .01$ (see the upper triangle in Table 20).

Table 20. Correlations for Student Perceptions of Classroom Quality Measured at Mid- and Post-Intervention Assessments^a

Variable	1	2	3	4	5
1. Appeal	.74**	.74**	.63**	.58**	.67**
2. Challenge	.71**	.68**	.50**	.64**	.55**
3. Choice	.66**	.64**	.64**	.61**	.59**
4. Meaningfulness	.65**	.67**	.64**	.75**	.54**
5. Academic self-efficacy	.57**	.62**	.67**	.67**	.64**

Note. The lower and upper triangles separately represent correlations among different variables at T2 and T3, respectively. However, the diagonal values represent correlations between the same constructs at T2 and T3.

^aListwise $n = 58$.

** $p < .01$.

Similarly, correlations between the same constructs at mid- and post-intervention were significant, positive, and strong, with a range of .64 to .75, $p < .01$ (see the diagonal values in Table 20). For example, the correlation between perceived appeal at mid-intervention and post-intervention was .74, $p < .01$, indicating that the participants perceived the appeal similarly at mid-intervention and post-intervention. In essence, the constructs of student perceptions of classroom quality significantly, positively, and strongly correlated with each other.

Gender Difference. Next, I compared correlations among the five constructs of student perceptions of classroom quality by gender. At the mid-intervention assessment, perceptions of girls and boys were similarly correlated; all correlations were significant, positive, and strong, and ranged from .63 to .80, for girls, and from .54 to .70, for boys, $p < .01$ (see Table 21). I obtained similar results for correlations at the post-intervention assessment; all correlations were significant, positive, and moderate to strong, and ranged from .39 to .76, for girls, and from .41 to .77, for boys, $p < .05$ (see Table 22). Three correlations seemed noticeably different for boys and girls at post-intervention assessment. For example, the correlations between choice and challenge and meaningfulness and challenge were .39 and .39, respectively, for girls, but the same correlations were .66 and .77 for boys.

Table 21. Correlations by Gender for Student Perceptions of Classroom Quality at Mid-Intervention Assessment^a

Variable	1	2	3	4	5
1. Appeal	--	.70**	.70**	.59**	.54**
2. Challenge	.75**	--	.65**	.70**	.61**
3. Choice	.63**	.65**	--	.67**	.64**
4. Meaningfulness	.80**	.66**	.65**	--	.62**
5. Academic self-efficacy	.65**	.63**	.74**	.80**	--

Note. The lower and upper triangles separately represent correlations among different variables for girls and boys, respectively.

^aListwise $n = 26$, for girls, and $n = 33$, for boys.

** $p < .01$.

Table 22. Correlations by Gender for Student Perceptions of Classroom Quality at Post-Intervention Assessment^a

Variable	1	2	3	4	5
1. Appeal	--	.75**	.62**	.60**	.77**
2. Challenge	.66**	--	.66**	.77**	.56**
3. Choice	.68**	.39*	--	.56**	.54**
4. Meaningfulness	.61**	.39*	.66**	--	.41*
5. Academic self-efficacy	.65**	.56**	.60**	.76**	--

Note. The lower and upper triangles separately represent correlations among different variables for girls and boys, respectively.

^aListwise $n = 29$, for girls, and $n = 34$, for boys.

* $p < .05$, ** $p < .01$.

Finally, I computed correlations for boys and girls for the pairs of the same constructs measured at the mid-intervention and post-intervention assessments (see Table 23). All correlations were significant, positive, and strong, and ranged from .55 to .71, for girls, and from .57 to .78, for boys, $p < .01$. The correlations for boys and girls were similar. For example, the correlations between perceived appeal by girls and boys at the mid-intervention and post-intervention assessments were .68 and .78, respectively, $p < .01$, indicating that the two gender groups perceived the appeal similarly at mid-intervention and post-intervention. Although the boys' perceived challenge measured at mid- and post-intervention correlated ($r[30] = .77$) more strongly compared to the girls ($r[24] = .55$), girls' perceived choice measured at the same times correlated more strongly ($r[24] = .71$) compared to the boys ($r[30] = .57$). However, there were no noticeable gender differences in the perceived classroom quality measured at two time points, especially for meaningfulness and academic self-efficacy.

Table 23. Correlations by Gender Between the Same Constructs of Student Perceptions of Classroom Quality Measured at Mid- and Post-Intervention Assessment^a

Variable	Girls	Boys
1. Appeal	.68**	.78**
2. Challenge	.55**	.77**
3. Choice	.71**	.57*
4. Meaningfulness	.70**	.78*
5. Academic self-efficacy	.64**	.68**

Note.

^aListwise $n = 26$, for girls, and $n = 32$, for boys.

** $p < .01$.

Inferential Statistics

Next, I used the repeated-measures Hotelling's T-square test to assess the extent to which the mean student perceptions of classroom quality changed from mid-intervention to post-intervention. I hypothesized no significant differences in student perceptions of classroom quality over time. However, I used a directional alternate hypothesis favoring the post-intervention scores to be greater than the pre-intervention scores. I examined the paired-samples differences at a .05 significance level. The use of listwise deletion of missing values resulted in a sample of 58.

Assumption Check. I checked data assumptions and found the independence of observations assumption was met by the fact that all pairs of T2 and T3 scores came from unique participants. The multivariate normality assumption was violated as the maximum Mahalanobis distance statistics (T2: 25.42; T3: 22.81) exceeded the critical value of Mahalanobis distance (i.e., 11.07) for 5 dependent variables ($df = 5$). However, Hotelling's T-square test is robust to violations of the assumption of multivariate normality. Correlations among the dependent variables computed separately at T2 and T3 indicated the multicollinearity assumption was met (see Table 20). Therefore, I found Hotelling's T-square test to be appropriate for further analysis.

Test Results. This test revealed that student perceptions of classroom quality at post-intervention were not significantly greater than those at mid-intervention, $F(5, 53) = 1.66$, $p = .162$, Hotelling's Trace = 0.16. Although the test result indicates statistical non-significance, the partial eta-squared coefficient of .14 suggests a large effect of time on students' perceived classroom quality. In other words, students' perceptions of classroom quality may have improved

over time from mid-intervention to post-intervention but failed to reach a statistical significance, most probably because of the lack of adequate power for the multivariate test with five dependent variables and a small sample of 58 participants. The univariate *post-hoc* tests supported this assertion as they indicated a significant improvement in scores on all subscales of SPOCQ except for appeal, $p < .05$ (one-tailed) (see Table 24). It is important to note that mean scores for appeal were the highest at T2 and T3; therefore, there could be a ceiling effect on the perceived appeal.

Table 24. Univariate Tests of Student Perceptions of Classroom Quality Measured at Mid- and Post-Intervention^a

Variable	SS	df	MS	F	p	Partial eta squared
Appeal	0.030	1	0.03	0.44	.256	.01
Challenge	0.458	1	0.46	5.32	.012*	.09
Choice	0.268	1	0.27	3.77	.028*	.06
Meaningfulness	0.270	1	0.27	4.00	.025*	.07
Academic self-efficacy	0.310	1	0.31	3.79	.028*	.06

Note.

^aListwise $n = 58$.

* $p < .05$.

Gender Differences. In response to RQ 3b, I conducted the independent-samples Hotelling's T-square test separately for the data collected at mid-intervention and post-intervention assessments to assess gender differences in the student perceptions of classroom quality for the participants in the treatment group. I hypothesized no significant gender differences in student perceptions at mid- and post-intervention, separately. I examined the independent-samples differences at a .05 significance level. The use of listwise deletion of missing values resulted in a sample of 59 (33 boys and 26 girls) at the mid-intervention assessment and 63 (34 boys and 29 girls) at the post-intervention assessment.

Assumption Check. As described earlier, the multivariate normality assumption was violated. Therefore, instead of using Box's test of equality of covariance matrices, I checked the equality of error variances using separate Levene's tests. The results indicated equal variances based on means across groups for all dependent variables ($p > .05$). Based on the assumption

check and the fact that Hotelling's T-square test is robust to violations of the assumption of multivariate normality, I found the test to be appropriate for further analysis.

Test Results. The independent-samples Hotelling's T-square test revealed no gender effect, $p > .05$ (see Table 25), providing support to my hypothesis. In other words, students' perceptions of classroom quality did not seem to vary by gender at the mid-intervention or post-intervention assessments.

Table 25. Multivariate Effect of Gender on Student Perceptions of Classroom Quality

Time	Hotelling's trace	Hypothesis			p	Partial eta squared
		F	df	Error df		
Mid-intervention	0.06	0.67	5	53	.649	.06
Post-intervention	0.11	1.26	5	57	.293	.10

RQ 3 Summary

Overall, the participants of the treatment group perceived the intervention to have high classroom quality during and after the intervention. They rated their experience the highest for classroom appeal and meaningfulness. Student perceptions of classroom quality did not differ significantly between mid-intervention and post-intervention assessments. Classroom quality perceptions of girls and boys were similarly correlated during and after the intervention. To that end, the gender differences in classroom quality perceptions were not statistically significant.

Research Question 4

4. To what degree do students adhere to the intervention?
 - a. How frequently do students attend the intervention sessions, engage in formal and informal practice at home, and complete journal entries?
 - b. Is adherence associated with residual changes in self-reported empathy, compassion, and prosocial behavior from pre- to post-intervention assessment (T3 – T1)?

Descriptive Statistics

The final step in the assessment of the effectiveness of the intervention was to assess the degree to which participants in the treatment group adhered to the intervention. I measured adherence using four variables—student attendance for the weekly sessions (out of 10), the self-reported completion rates of daily meditation (out of seven per week; the formal practice component) and weekly home activities (out of eight; the informal practice component), and submitted weekly journal entries (out of 10). In RQ 4a, I descriptively examined adherence variables (see Table 26 and Figure 14). The intervention consisted of 10 sessions conducted weekly. On average, participants' total attendance was 92.8% ($SD = 10.3$). Except for three participants who attended between five to seven sessions, all other participants ($n = 61$, 95%) attended at least eight sessions. Overall, the participants did not miss many sessions.

In addition to attending the sessions, I expected participants to complete three home practice tasks every week—daily meditation, a home activity, and a journal entry. On average, the participants reported completing meditation 4.73 times a week ($SD = 1.52$), which translates to a 68% completion rate. The distribution of weekly meditation completion rate was near normal. Participants, on average, reported completing 7.09 ($SD = 1.53$) out of eight home activities, which is an 89% completion rate. Except for two participants who completed one of the eight home activities, all other participants reported completing at least four home activities, with 50 participants (78%) completing seven or eight home activities. Furthermore, I counted the weekly journal entries the participants submitted. On average, participants submitted 4.64 ($SD = 3.30$) entries out of 10, which is a 46% completion rate. The distribution of weekly journal entry completion rate was near normal. Overall, for all participants, the level of adherence to the intervention was high, especially for session attendance and self-reported home activity completion.

Table 26. Descriptive Statistics for Adherence to the Intervention

Variable	<i>M</i>	<i>SD</i>	Skew	Kurt.
Attendance	9.28	1.03	-1.94	4.74
Meditation (Self-reported)	4.73	1.52	-0.69	0.06
Home Activities (Self-reported)	7.09	1.53	-2.44	6.70
Journal Entries (Submitted)	4.64	3.30	0.26	-1.15

Note. Attendance and journal entry scores are out of 10. Meditation scores are mean scores out of seven per week. Home activity scores are out of eight. $n = 64$.

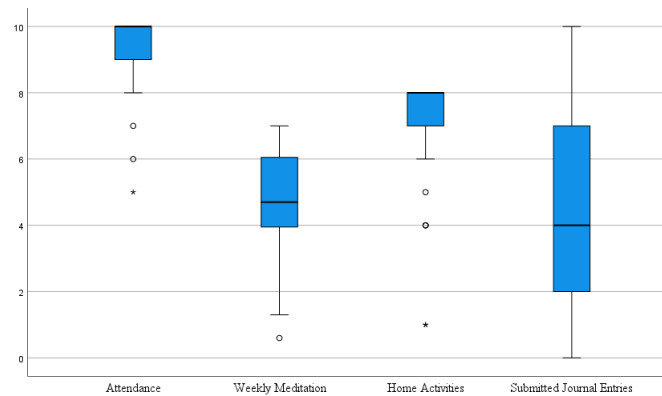


Figure 14. Boxplots for Adherence to the Intervention

Gender Differences. Further, I examined gender differences in adherence to the intervention using descriptive statistics. Girls adhered more strongly to the intervention compared to boys as indicated by mean attendance and home practice completion rates (see Table 27). On average, girls reported completing seven meditation practices and one home activity more than boys did over the period of the intervention. Also, the girls, on average, submitted two journal entries more than the boys did. However, boys and girls, on average, attended over nine sessions.

Table 27. Descriptive Statistics for Adherence to the Intervention by Gender

Variable	Boys ($n = 35$)				Girls ($n = 29$)			
	<i>M</i>	<i>SD</i>	Skew	Kurt.	<i>M</i>	<i>SD</i>	Skew	Kurt.
Attendance	9.26	1.12	-2.01	5.02	9.31	0.93	-1.83	4.49
Meditation (Self-reported)	4.42	1.55	-0.40	-0.44	5.11	1.43	-1.20	2.02
Home Activities (Self-reported)	6.80	1.61	-1.83	3.92	7.45	1.38	-3.97	18.00
Journal Entries (Submitted)	3.83	3.19	0.51	-0.88	5.62	3.22	0.02	-1.26

Note. Attendance and journal entry scores are out of 10. Meditation scores are mean scores out of seven per week. Home activity scores are out of eight.

Correlational Analyses

Next, in RQ 4b, I examined Spearman's rank-order correlations between four aspects of adherence and pre- to post-intervention residual change scores for outcome variables. Outcome variables included prosocial behavior, compassion for others, and two empathy variables (i.e., perspective taking and empathic concern). I computed residual change scores for the treatment group by regressing post-intervention scores (T3) onto pre-intervention scores (T1), and then by subtracting predicted T3 scores from the observed T3 scores. The use of residual change scores in place of absolute difference scores allowed me to control for individual differences in outcome variables in the T1 assessment. I hypothesized that more attendance and more home practice are associated with greater positive changes in outcome variables over time; therefore, I used a one-tailed test to examine Spearman's rank-order correlations at a .05 significance level. Given that adherence variables were measured on an ordinal scale, I used Spearman's correlations instead of Pearson's correlations. This was also more appropriate because two of the four adherence variables did not follow a normal distribution and had outliers, which can disproportionately influence Pearson's correlation coefficients. On the contrary, Spearman's rank-order coefficients are not sensitive to the non-normality of data or outliers in the data.

As hypothesized, all adherence variables were statistically significantly and positively correlated with residual changes over time in empathic concern but not for prosocial behavior, compassion for others, or perspective taking (see Table 28). Empathic concern and adherence variables were moderately correlated, $r_s(61) = .26$ to $.30$. Also, self-reported meditation practice, $r_s(59) = .29$, $p < .05$, and the number of submitted journal entries, $r_s(59) = .25$, $p < .05$, were

significantly and positively correlated with residual changes over time in prosocial behavior. Similarly, the number of submitted journal entries was significantly and positively correlated with residual changes over time in compassion for others, $r_s(56) = .24, p < .05$.

Table 28. Correlations Between Adherence and Outcome Variables

Variable	Residual PB (<i>n</i> = 61)	Residual PT (<i>n</i> = 62)	Residual EC (<i>n</i> = 63)	Residual CO (<i>n</i> = 58)
Attendance	.09	.06	.30**	.17
Meditation (Self-reported)	.29*	.07	.28*	.18
Home Activities (Self-reported)	.21	.01	.26*	.21
Journal Entries (Submitted)	.25*	.02	.28*	.24*

Note. Spearman's rank-order correlation coefficients; PB = Prosocial behavior, PT = Perspective taking, EC = Empathic concern, CO = Compassion for others.

* $p < .05$, ** $p < .01$.

RQ 4 Summary

Although causality is not inferred, more attendance and more home practice may be moderately associated with better results for the development of empathic concern and prosocial behavior but not for the development of perspective taking and compassion for others. Given the restrictions of the COVID-19 pandemic and the virtual delivery of the intervention on in-person interactions, these correlations seem to be of practical significance because the home practice component may have played an important role in the learning during the intervention. Moreover, the home practice component required minimal resources and only brief practice time (i.e., less than 90 minutes a week). Therefore, the results signify the practical utility of the low-investment and easy-to-adopt home practice component in the virtually-conducted intervention.

Sustainability of the Intervention Effects and Feasibility of the Intervention

Research Question 5

5. To what extent does self-reported past prosocial behavior uniquely predict self-reported future prosocial behavior?

- a. To what extent does post-intervention self-reported prosocial behavior (T3) uniquely predict future self-reported prosocial behavior (T5) beyond post-intervention self-reported empathy and/or compassion (T3)?

Inferential Statistics

In response to RQ 5a, I examined the extent to which post-intervention prosocial behavior (T3) uniquely predicts future prosocial behavior (T5) beyond past empathy and compassion (T3) using a stepwise hierarchical multiple regression analysis. In this analysis, I used the data from the treatment and control groups. T5 assessment means a three-month follow-up assessment for the treatment group and an immediate post-intervention assessment for the control group because of the delayed treatment they received.

$$\widehat{Prosocial}_{T5} = B_0 + B_1Prosocial_{T3} + B_2PT_{T3} + B_3CO_{T3} + B_4SD_{T3}$$

In this hierarchical analysis, I first controlled for the effect of social desirability on predicted future prosocial behavior (T5) (Model 1) and then examined whether adding the past self-reported prosocial behavior (T3) predictor significantly improves the model's (Model 2) ability to predict future prosocial behavior over and beyond empathy and compassion variables (T3) (Model 3). I centered all the predictors and the covariate in this analysis around the grand mean. Listwise deletion of missing values reduced the sample size from 130 to 127.

Assumption Check. I checked if the data met the key assumptions of multiple regression analysis. A visual inspection of scatterplots indicated linear relationships between the predictors and the dependent variable (i.e., future prosocial behavior [T5]); therefore, the data met the linearity assumption. A visual inspection of the normal P-P plot of regression standardized residuals and histograms of the predictor variables, and the numerical inspection of their skewness (ranged between 0 and -1) and kurtosis (ranged between -1 and +2) suggested multivariate normality. However, the maximum Mahalanobis distance computed for the independent variables was 30.48, which is greater than the critical value of 18.47 ($df = 4$, $\alpha = .001$). This result indicates the presence of one or more multivariate outliers. However, the multiple regression analysis is fairly robust to slight departures from normality. Next, the magnitudes of correlation coefficients among the predictors were less than .80. Also, Variance Inflation Factor (VIF) was much smaller than 10, indicating the data met the non-multicollinearity assumption. A visual inspection of the scatterplot of the regression standardized

residuals versus predicted values to examine whether points were equally distributed across all values of the independent variables indicated no clear pattern in the distribution. Therefore, the data met the homoscedasticity assumption. Overall, the data met the assumptions of multiple regression analysis.

Regression Results. Table 29 represents the summary of the hierarchical regression analysis. The R^2 value associated with the first regression model suggests that the social desirability (T3) variable accounted for 16% of the total variation in predicted future self-reported prosocial behavior (T5). Next, I added compassion for others (T3) and perspective taking (T3) variables to the analysis (Model 2). This model explained an additional 28% of the total variation in predicted future self-reported prosocial behavior (T5). Compassion for others uniquely accounted for 23% of the total variance in predicted future prosocial behavior (T5) over and above other predictors in the model ($sr = .48$). However, perspective taking (T3) did not significantly predict prosocial behavior over and beyond other predictors in the model.

Finally, I added the prosocial behavior (T3) variable to the analysis (model 3). The results for this model suggest that the addition of the prosocial behavior variable (T3) to the previous model only accounted for an additional 2% of the total variation in predicted future prosocial behavior (T5). Compassion for others and prosocial behavior (T3) significantly predicted future prosocial behavior. The regression coefficients associated with compassion for others and prosocial behavior suggest that with one unit increase in self-reported compassion for others (T3) and prosocial behavior (T3), the predicted self-reported prosocial behavior (T5) increases by approximately 0.69 and 0.24 units, respectively, after controlling for other predictors in the model. Compassion for others (T3) and prosocial behavior (T3) uniquely accounted for 6% ($sr = .25$) and 2% ($sr = .15$) of the total variance in prosocial behavior, respectively, over and above other predictors in the model. Consistent with the previous model, perspective taking (T3) did not significantly predict future prosocial behavior over and beyond other predictors in the model.

RQ 5 Summary

In summary, the results of the hierarchical regression analysis indicate that post-intervention self-reported prosocial behavior (T3) and compassion for others are significant predictors of future self-reported prosocial behavior (T5). However, past self-reported prosocial behavior uniquely explains only little variation in future self-reported prosocial behavior. Self-

reported compassion for others is the strongest predictor of future self-reported prosocial behavior when compared to past prosocial behavior and perspective taking.

Table 29. Summary of Results of Hierarchical Regression Analysis Predicting Future Self-Reported Prosocial Behavior (T5) From Independent Variables

					Change Statistics					
Model	R	R^2	Adjusted	SE of the	F					
			R^2	Estimate	R^2 Change	Change	$df1$	$df2$	p	
1	.40	.16	.16	7.88	.16	24.10	1	125	<.001	
2	.67	.45	.43	6.46	.28	31.51	2	123	<.001	
3	.68	.47	.45	6.36	.02	5.17	1	122	.025	
					95% CI for B		Correlation			
Variable	B	SE	β	t	p	LB	UB	Zero-	Semi	
								order	Partial	Partial
Model 1										
Intercept	66.15	0.70		94.57	<.001	64.76	67.53			
SD (T3)	1.25	0.25	0.40	4.91	<.001	0.75	1.75	.40	.40	.40
Model 2										
Intercept	66.02	0.57		115.09	<.001	64.88	67.15			
SD (T3)	0.67	0.24	0.22	2.85	.005	0.21	1.14	.40	.25	.19
CO (T3)	0.98	0.18	0.54	7.11	<.001	0.70	1.25	.63	.54	.48
PT (T3)	0.07	0.14	0.04	0.52	.602	-0.21	0.36	.40	.05	.04
Model 3										
Intercept	66.02	0.56		117.00	<.001	64.91	67.14			
SD (T3)	0.62	0.23	0.20	2.65	.009	0.16	1.09	.40	.23	.18
CO (T3)	0.69	0.18	0.39	3.77	<.001	0.33	1.06	.63	.32	.25
PT (T3)	0.00	0.14	0.00	0.00	.999	-0.29	0.29	.40	.00	.00
PB (T3)	0.24	0.11	0.24	2.26	.025	0.03	0.45	.60	.20	.15

Note. PB = Prosocial behavior, PT = Perspective taking, CO = Compassion for others, SD = Social desirability, T3 = Post-intervention assessment; *n* = 127.

Qualitative Findings

Research Question 6

6. What are the participants' experiences in the intervention? How do students and teachers perceive the intervention? What affordances and challenges exist in the intervention for its future implementation?

Thematic analysis of qualitative data revealed seven themes. Overall, participants' experiences in the intervention tended to be largely positive yet also indicative of the scope for improvement for its future implementation. Participants described their experiences as (1) appealing, (2) meaningful, and (3) interactive and supportive of belongingness. They described (4) emotional regulation and mindful engagement, (5) responsible communication and relationship building, and (6) kindness and gratitude, as key affordances of their participation in the intervention. Finally, they expounded on several challenges and ways to improve the intervention experience for future participants. I report participants' challenges and their recommendations in a separate theme at the end. Further, I describe each of these themes with illustrative examples from the participants. I cite the number of participants reporting a pattern and the number of occurrences of that pattern (i.e., references) throughout the presentation of the findings. These numbers are only some indication of the salience of a pattern. Other necessary parameters of salience include the relevance of a pattern to the pursued research questions (i.e., experiences, affordances, and challenges) and referential adequacy in the data.

In the first three themes, I describe the positive experiences of the participants (17 participants, 277 references). Overall, all participants perceived their intervention experience to be largely positive. Their average rating was 4.7 out of 5 ($n = 17$), indicating an overall positive evaluation of the intervention. In the three themes that follow, I present the key aspects of participants' positive experiences, namely, appeal, meaningfulness, and interactivity and belongingness.

Theme 1: Appeal

All participants described their experience in the intervention as appealing (17 participants, 170 references). They perceived the intervention's content and pedagogy to be

attractive and enjoyable. Specifically, students described the intervention as a new and unique learning experience, especially in the context of the topics included in the intervention. Moreover, students found the simplicity of the presentation of the topics to be appealing, which they felt aided their comprehension in this intervention.

Subtheme 1.1: Content Appeal

The participants described the content of the intervention to be appealing (16 participants, 77 references). For example, a girl (JG06) described the topics as “attractive,” and mentioned, “I used to look forward to learning in this program. I used to feel really good about learning a new topic [every week]. And the new topic used to be interactive and attractive.” Engaging with the topics in the intervention provided students with new, unique, and deep learning opportunities (16 participants, 41 references). For example, a student (PB17) narrated,

I would like to give [this program] more than 5 [stars] because the sessions were really great for me. ... I learned many new things. ... I just knew the basics [of the intervention topics] ... but [after participating in the program] I got to know many more deep things about them.

Another boy (PB07) exclaimed, “I think the topics were excellent ... amazing ... just amazing,” when asked about his opinion of the topics discussed in the intervention.

Students also described their appeal in the context of specific topics from the intervention such as emotions (Lesson 1), perspective taking (Lesson 2), empathic communication (Lesson 3), kindness (Lesson 6), gratitude (Lesson 7), and field visit (Lesson 9). For example, a girl (PG14) described her experience as “The topics were very different. They were related to emotions and actions. They were unique.” Another student (PG15) mentioned, “The session on walking a mile in others’ shoes appealed to me ... I also liked the one on gratitude. ... I learned new things.”

Subtheme 1.2: Pedagogical Appeal

The participants also enjoyed the pedagogical approach adopted in this intervention (16 participants, 67 references). They described audiovisual aids, slides, meditation, and classroom and home practice activities as fun and enjoyable (e.g., JB02, JB28, JG28). A student (PG05) summarized her experience as

Each session was different. ... I never had to force myself to remember anything. It was automatically retained because your way of explaining was very helpful for me. Otherwise, it could have felt boring just like the studies. My experience was very good.

A student (JB02) summarized his overall experience by stressing the specific pedagogical aspects of the sessions. He said,

Meditation at the beginning of the session used to calm us down. ... *Humor of the week* and the *wellness prayer* at the end used to give a nice ending to the session. So, the PPTs were very helpful. Lecture sessions are, by themselves, difficult to retain and don't allow for enough time to take notes. A PPT is more conducive to understanding.

A girl (JB06) highlighted her excitement about the home practice tasks, "I liked doing those because I wasn't expected to write a long essay or something. The tasks were interactive and hands-on. So, they were fun." Another student (PB23) said, "Just doing the home practice tasks would give me a summary of the whole session." Overall, the home practice tasks were popular among the participants for they were simple yet enjoyable.

Before the start of the intervention, few students perceived the program to be unattractive or like a regular school-like session. However, they reported their perception of the intervention changed quickly as they engaged in the activities. For example, a girl (JG11) reported, "In the beginning, I thought the program was very boring ... yet another typical learning session. But later, when we started engaging in activities, it was fun."

Especially, the participants seemed to have enjoyed the field visit the most. The participants either visited a center/school for children hard of hearing (Site 1) or an outside-of-school talent development program located in an urban low-income neighborhood (Site 2). Both visits provided students with unique learning opportunities, assisted in breaking the monotony of virtual learning, and provided a real-life context to classroom learning. Describing her memorable moment, a girl (JG06) reported,

I would remember the part where we went on a field trip to *Ruia* [the school for children hard of hearing] forever in my life. I will look at it as a good memory and that I learned a lot of new things.

While describing his overall experience, a boy (PB17) narrated, "My excitement rose [to] such [an extent] when the teacher announced the field trip because I was really excited to go on a field

trip after almost two years!” Overall, the participants described a diverse mix of pedagogical components that promoted the enjoyment and aided their learning during the intervention.

Subtheme 1.3: Simplicity

Simplicity was yet another aspect of the appeal as described by the participants (8 participants, 13 references). Participants at the beginning of the intervention perceived the topics to be challenging; however, once they started engaging in the classroom sessions and home practice activities, they described their perceptions changed and thought the topics and activities were rather simple, interesting, and easily doable. They also felt their teachers explained the topics in an easy language without using any wordy sentences and jargon. They felt this simplicity positively influenced their comprehension of the topics included in this intervention.

For example, one girl (JG11) described her perception of home practice tasks as,

When I was given the first task, I was tense about what I should do because I thought it was difficult. I could not understand how to relate, but once I started doing it I realized it was easy and I could understand how to use them.

Another girl (PG14) said, “Looking back to the first session, retrospectively, now that we have completed ten, my feelings (perception) about how difficult the topics were has completely changed.”

The participants also expressed their appreciation for the use of easy language in the intervention. A boy (PB17) said, “My teacher taught really well. ... Mainly, her language was easy. I understood many more things.” Another boy (PB16) said, “I had a good experience because the teachers’ way of explaining was easily comprehensible and that boosted my interest. For example, they did not use the words we would struggle with. I could grasp everything pretty easily.” Overall, the students seemed to notice and appreciate the efforts of the intervention development team to keep things simple for students considering the novelty and complexity of the topics for students in the sixth to eighth grades.

Theme 2: Meaningfulness

All participants described their experience in the intervention as meaningful (17 participants, 123 references). They found the topics to be relevant to their daily lives. Moreover, the participants perceived the intervention to be useful in many ways and described several

benefits and uses of their participation in the intervention giving examples from their personal experiences. In addition, the participants indicated the program afforded them opportunities to engage in hands-on experiences and found the intervention to be meticulously planned and executed. Further, I explicate two key subthemes encompassing meaningful experiences the participants described.

Subtheme 2.1: Relevance

The participants described the intervention topics to be closely related to their daily lives (16 participants, 47 references). For example, a boy (JB10) mentioned, “My whole experience was excellent. ... All the topics were based on our lives. If we imbibe these topics, every one of our lives would change.” Another participant (JG06) described, “You could relate it with your daily life. The examples included were all based on daily routines. ... We actually use these things in our daily life. So, I could form connections between the classes and daily life.”

The participants also described the topics as important and thought-provoking (8 participants, 12 references). A girl (PG14) described her impression of the intervention as follows, “I felt the sessions were excellent. The topics were very important.” “The wellness prayer at the end was very thought-provoking and meaningful,” she added. Describing the importance of the topics learned in the intervention a boy (PB21) said, “The topics were more important. ... What we learn at school is important, but these topics also taught me how to conduct myself at school.”

The participants described several examples of relevant and important topics. These included the topics of understanding emotions, perspective taking, responsible communication, gratitude, and the commonness and interconnectedness of human experiences. For example, a boy (PB07) gave the program a five-star rating and narrated the importance of the trigger-emotion-pause-action (T-E-P-A) process in his daily life. He said,

They deserve a five because they involve real-life examples. ... I liked the T-E-P-A process very much because many small things add up to make a big mess. ... If in your anger you scream at your mother repeatedly, it makes a bad impression. You can avoid that by using the T-E-P-A process.

The relevance of the intervention’s topics to daily life seemed to have helped the participants reflect more deeply about themselves and find the scope for improving their

behavior and attitude toward life. A girl (JG06) reported, “I started liking these sessions a lot because I could improve my behavior toward others.” After the visit to the school for children hard of hearing, a girl (JG28) said,

After the field trip, I realized I am not the only one in this world who has problems. Many others have problems, and they are facing their issues and still making progress. So, I felt inspired by them for not crying over problems.

Overall, the participants found the intervention to be relevant to their daily lives, and thus, they could use some of the things they learned during the intervention as described below.

Subtheme 2.2: Usefulness

The participants described the intervention as useful and helpful in many ways (13 participants, 44 references). They described several different immediate and perceived long-term uses. Many participants also made connections between their perceived relevance and usefulness of the program (7 participants, 15 references). In other words, the participants described how the relevance of the intervention helped them use the lessons in their daily lives. For example, a girl (PG15) said, “The teachers connected the topics with daily situations. That is why I could use them in my daily life.”

The participants described several immediate benefits of the program. A girl (PG01) reported,

For me, it [the program] was a five [rating] because it was just what I needed. At that time, I was always messing up with my emotions. I did not know how to handle them in particular situations. ... This [program] helped me a lot. Now I can control emotions better, and I can deal with situations better. So, for me, it was a five out of five.

The participants also found the intervention useful in two other regards: empathy and mindfulness. A girl (PG15) mentioned, “The session on *walking a mile in others’ shoes* was very useful, and I loved it.” A boy (PB23) said, “Now I can understand others better, and that is helping me. ... If I get into an argument with someone, I can use that [perspective taking] to figure out my next words so that things do not escalate.” Describing the benefits of mindfulness, a girl (PG14) said, “Mindfulness really [positively] impacted my studies.” Similarly, another girl (JG11) described her mindfulness experiences and said, “I feel very fresh after the meditation [exercise]; I feel motivated to immediately sit down for studies.” She further added, “Mindful

eating is helping me a lot because I never used to eat mindfully. I am finding *being present* to be useful.”

The participants also perceived the intervention to have long-term benefits. A girl (JG10) described,

I want to be a psychiatrist when I grow up, so I believe I need to have good communication skills to become a psychiatrist, and I need to be able to talk well. It will be useful to me in the future, and that is why the session on effective communication was the most memorable for me.

Another student (PB17) narrated the perceived importance of the topics by saying,

These are something lifelong for everyone because I think it is helpful till the end of us – like effective communication. We have to listen to someone so others will listen to us. Forgiveness – if someone does something by mistake and we are hurt, we should forgive him. Again, we have to think about others. We have to walk a mile in their shoes. It really helps us, and mainly it helps us to connect with people.

Overall, the participants narrated several ways in which they perceived the intervention to be relevant to and useful for their current and future situations. Thus, the meaningfulness of the intervention seemed to have helped the participants gain a positive experience of the overall intervention.

Theme 3: Interactivity and Belongingness

The participants also described their experience in the intervention as highly interactive and supportive of a sense of belongingness (16 participants, 85 references). Along with describing the instances that depicted interactivity and belongingness, separately, they also repeatedly narrated instances of belongingness as experienced through their interactions with their teachers and other students in the class (13 participants, 20 references). This indicates an association between interactivity and belongingness the participants experienced in the intervention.

Subtheme 3.1: Interactivity

The participants found the classroom sessions to be interactive (13 participants, 34 references). Although the virtual delivery of the intervention constrained how participants interacted in the classroom, the intervention afforded several opportunities for them to interact

with each other and their teachers in classroom proceedings. Some activities required the participants to discuss a video or situation in groups of 3-5 participants conducted via Zoom breakout rooms. Yet other activities required the participants to work in pairs, again via Zoom rooms, as they shared personal instances from their past. Teachers conducted whole class discussions throughout the intervention. These activities seem to have promoted interactivity in the classroom sessions.

A girl (JG10) narrated her classroom experience as follows,

We used to reflect and talk about all the topics we learned. ... We used to share our thoughts about the topics and ask questions. Therefore, I found it all very interactive. It was not like the teacher kept speaking while we just listened and took notes side-by-side.

Another participant (PG01) mentioned a similar experience as she emphasized how she thought everyone benefitted from classroom interactions. She said,

It was not like the teacher was talking all the time. Everyone got equal chances [to participate]. During the field trip when we were trying to put to practice all the things we had learned, I think, everyone did quite well. And I think it reached out. It was very interactive.

She went on to add her experience from her interactions with other students in the class. She said,

From the first interaction, I started feeling very free while interacting with anyone from the class. It was quite good. ... It was about sharing our personal experiences with them and hearing out about theirs. So, I found out that many people are like me only. So, it was good, and I started feeling more free since then.

Students perceived the thrust on interactivity to be supportive of how they felt about being in the class with other students and teachers. I illustrate this aspect of their experience in the next subtheme, that is, belongingness.

Subtheme 3.2: Belongingness

The participants described that they experienced a strong sense of belonging in the intervention (16 participants, 51 responses). Their experiences depicted the feeling of security and support gained through a sense of acceptance, inclusion, and identity for the members of the group. The participants described receiving support for their sense of belonging while describing

their teachers or other students in the intervention. For example, the participants described their teachers as “understanding, caring, and inclusive” (JG11, JB10, JG06, JB28), “impartial, non-judgmental, and fair” (PB17, PG01, JB23, PG15), “approachable and friendly” (JB10, PG14), “patient” (PG05, JG06, PB17), “calm even when under pressure” (PG14, JB02), “involved” (PB23, JG06), “cheerful, encouraging, and appreciative” (PB05, PB07, PG15, PB16), “helping and kind” (PG15, JG28), and “polite and gentle” (JB10, JB02). The participants described their peers in the intervention as they described their teachers—“friendly and helping” (PB23, PG15, JG06), “understanding and inclusive” (JG10, PB23), “involved” (PG05, PB23), “cheerful” (PG05), and “trustworthy and approachable” (JG10, PG01, PG14).

These impressions seemed to have contributed to the participants’ overall positive experience in the intervention. For example, a boy (JB23) said, “The teacher used to speak gently. She used to give everybody a chance to talk or ask questions. Never did she dismiss a student wanting to talk in the class.” Another student (JG28) made a connection between the teaching approach and the topics of the intervention. She said,

The teacher never got angry, unlike other teachers. ... When she was teaching us about kindness, we could understand her just by listening to her voice. She was speaking kindly, and we could relate to that. Even with the gratitude session, her tone was very nice. She taught with kindness.

Yet another student (PG01) shared her classroom experience with the teacher as follows,

[At] any point of time whenever people shared something or dominated [the discussion], the teacher brought that topic back to where it was without making the person [feel] hurt. Also, when people shared personal experiences, she tried her best to say, ‘If you don’t want to share, don’t share it. It is all right if you don’t share it.’ Or ‘If you are not feeling good about sharing it, then don’t share it.’

These and similar other quotes from the participants indicated they felt belonged in the classroom, were comfortable around their teachers and other students about their feelings, and possibly, the teachers modeled kindness and compassion they were trying to teach to these students.

So far, I have described the positive experiences of the participants in the first three themes. In the next three themes, I illustrate the key affordances of their participation in the intervention (17 participants, 387 references). In other words, I explain salient learning outcomes in the next three themes as perceived by the participants. The participants described learning

outcomes, broadly, at two levels: (a) gaining awareness, knowledge, and understanding of a key topic and (b) initiating an attitudinal and behavioral change through the application of things learned during the intervention. In each of the three themes that follow, I intertwine the learning outcomes at these two levels (i.e., awareness and application) as described by the participants.

Theme 4: Emotional Regulation and Mindful Engagement

All participants described learning about emotional regulation and mindful engagement (17 participants, 123 references). The intervention began with a lesson on *understanding emotions*, which covered key universal emotions and their working through the process of trigger-emotion-action. In what follows, I describe two subthemes with illustrative examples from the participants' interviews.

Subtheme 4.1: Self-Awareness and Emotional Regulation

Most participants described developing emotional self-awareness and learning about emotional regulation as an outcome of their participation in the intervention (15 participants, 74 references). The participants not only described gaining a general understanding of emotional regulation (8 participants, 12 references) but also discussed developing self-awareness about their emotions and emotional manifestation (11 participants, 23 references). Moreover, the participants described how they intentionally initiated regulating their emotions, especially anger (13 participants, 39 references). For example, a girl (JG11) explained her lack of awareness regarding emotions before the intervention and said,

I did not know much about emotions. I just knew the basics but got to learn about them more deeply such as why emotions arise and how to control them. ... Sometimes, we get furious and explode. Now I learned how to control such things.

Another participant (PB07) said, "In the first session on *understanding emotions*, in I got to know you can very much control how and what you do." Another participant (JG10) narrated her emotional self-awareness as she said,

I used to be very irritable. ... Even small things used to anger me. For example, I used to fluster over losing the Internet connection. ... I realized I don't always have control over things, and I must control my emotions and be patient.

T-E-P-A or trigger-emotion-pause-action process depicting emotional regulation became quite popular among the participants. When asked at the beginning of the interviews regarding which sessions they recalled, twelve out of 15 participants mentioned the first session, that is, the lesson on *understanding emotions* and the T-E-P-A process. The acronym T-E-P-A remained with the participants three months after the intervention when they were interviewed. Overall, the session seemed to have a long-term impression on the participants' memory and assisted them in developing an awareness of emotional regulation. This is also reflected in the participants describing their efforts to inculcate emotional regulation in their daily lives. For example, a boy (JB02) said, "I learned to control my anger. ... I have become better at controlling my reactions to others in a conversation when they say something inadvertently" Another girl (JG06) narrated, "I started using T-E-P-A, and it greatly reduced the amount of shouting that I did." A girl (PG05) summarized her transformation as described below,

I recognized other people have emotions too, and I learned to identify them--what are they feeling, and how should I react. For example, children in my complex used to ridicule me, and I used to spontaneously react to them. Now I have learned to take a brief pause. And when sometimes the other person was feeling annoyed, I could sense when and when not to speak.

This and several other anecdotes the participants described led me to conclude that the participants may have developed a better understanding of emotions and learned ways to exercise emotional regulation, which forms the foundation for having and manifesting a concern for others.

Subtheme 4.2: Mindful Engagement

A pattern of responses related to the theme of emotional regulation was one of mindful engagement (15 participants, 49 references). The participants described gaining knowledge about mindfulness—a focused form of attention to self and others and being present in the moment (4 participants, 6 references) and common humanity—an understanding of a shared human experience (7 participants, 11 references). Moreover, the participants described their efforts to put this awareness into action by engaging in self-reflection (4 participants, 7 references) and practicing mindful engagement (9 participants, 20 references).

Describing his experience with the home practice task of mindful eating, a participant (JB28) said,

Eating mindfully allowed me to observe my food more closely. I had never observed too keenly. I learned a lot of new things about how we eat and interact with our food. ... [I realized] we don't usually pay much attention to things we do. But when we slow down and observe them closely, we learn a lot more things about them.

Another boy (PB16) described his experience of learning compassion and kindness meditations. He said,

We don't usually care a lot about the impact of our words and behavior on others. But when I was meditating, I found it easier to think about others. And I started thinking about others. That is why I liked the intentional approach to thinking about others through meditation.

A girl (JG10) extended her insight from the meditation experience and said, "Sometimes I broke into tears while thinking about others as I listened to compassion and kindness meditations. A lot of thoughts were running in my mind during the meditation. And I was self-reflecting at that time." Mindfulness activities, especially the meditation exercises conducted during the classroom sessions and suggested for daily home practice seemed to have helped the participants to engage in self-reflection and be mindful of themselves and others.

In another related pattern, the participants described an enhanced understanding of a shared human experience. Through classroom activities, they seemed to have developed a sense of common humanity. This new awareness seemed to have given them hope and encouragement about themselves. For example, a girl (PG15) shared,

I felt encouraged when I realized I'm not the only one who has been through something. Earlier I used to feel I'm so unlucky. But I am not the only one who's ever failed. ... So, one day or another, we are going to get success.

Similarly, another girl (JG06) said,

I learned we are not alone anywhere; we share everything—our feelings, our emotions. If we are feeling one thing, the others are feeling the same thing somewhere else. They might not be in our contact, but somewhere else somebody is going to have the same feeling like you, and you are never alone. You will always have somebody.

Besides an enhanced awareness of mindfulness and common humanity, the participants described several instances in which they practiced these qualities in their daily lives. For example, a girl (JG11) reported, "Earlier I used to listen just to reply. Now I listen intently and

patiently.” Another boy (JB28) described a change in himself involving mindful attention to his surroundings. He said,

I used to ignore little things. But now I notice them and think about them. For example, if I see a sharp object lying on the floor, I think of the possibility that it may hurt someone. I just don’t ignore it; I think about it more deeply and engage with it.

This and several other similar reports mentioned in this subtheme indicate that the participants may have learned about mindful engagement with themselves and their surroundings and started to develop compassion for themselves and others.

Theme 5: Responsible Communication and Relationship Building

The most salient affordances concerned responsible communication and relationship building (17 participants, 160 references). Broadly, the participants described learning about perspective taking (10 participants, 19 references) and empathic communication (12 participants, 26 references). Moreover, they described an effort to take others’ perspectives (13 participants, 32 references) and communicate with a concern for others (15 participants, 56 references) in their daily lives. These efforts led them to build better and stronger relationships with people around them (9 participants, 27 references).

Narrating their learning from the intervention, the participants described learning about perspective taking and communicating with empathy and compassion. For example, a boy (PB23) mentioned, “I learned about empathy—we must try to understand what others are feeling. Before acting, we must see the consequences of those actions from the others’ perspective.” Another boy (JB02) said, “Sometimes we unknowingly blurt out words, and the other person gets hurt deeply. So, [I realized] I should think twice before speaking.” Similarly, a girl (PG01) said, “The main takeaway for me was that I started knowing how to communicate better with people—what could have been a better thing to say or not say at all.” These excerpts indicated the participants developed an enhanced awareness of responsible communication.

Moreover, the participants described their efforts to apply their learning in their daily lives. A boy (PB21) said, “Before speaking I now think how I’d feel if someone said the same things to me. ... I’m using this every day. ... It was difficult initially, but now it’s become a

habit. It doesn't feel unusual anymore." Another boy (PB07) narrated an incident involving his mother and him during a surprise test he was recently taking in the virtual school. He said,

I was in a surprise test, and my mother didn't know about that. I actually had screamed at her once earlier when she brought me [a glass of] milk [during the test]. So, this time, I told myself to pause and thought about how she'd react. Then I asked her to keep the milk on the side because I wanted to write. ... Now I understand how much it cares for [to communicate this way].

Another girl (JG06) explained a change in her attitude about her being always right once she started trying to take others' perspectives. She said,

[Earlier] I was firm in my opinions. I was like this is right, and all of you are wrong. I used to say that even when I was wrong. But then I started to *walk a mile [in others' shoes]*. I actually started to think about others' feelings and opinions and the reasons behind them. And then I realized others' opinions can also be right, not just mine.

Starting to take others' perspectives resulted in communicating with a concern for others and building better relationships with them. For example, a girl (JG28), who described herself during the interview as rude and uncaring, described her personal transformation and said, "Now I use my words carefully. Earlier, I used to not think before saying things. Now, I think and organize my words more carefully." Another girl (PG14) narrated a change in her communication as follows,

I have started to care about others. ... [Recently] a friend shared her family issues with me, and I responded with, 'You don't worry. Everything will be all right.' I had never said something like this before or supported someone this way. I used what I learned from the session on *walking a mile in others' shoes*.

A girl (JG11) described how taking others' perspectives helped her in building better relationships. She said,

I could understand others better by walking a mile in their shoes. And that greatly enhanced my bonding with them. ... Once I started to understand their reasons and reflected on things I say, I realized how they feel. So, instead of getting angry at them, I started feeling good, and thus we developed a good friendship.

Her classmate (JG06) similarly explained her learning. She said,

I learned how to behave with people in daily life and how to talk to them properly. It's not required you shout at them all the time. Things can move ahead by communicating them nicely. ... My understanding of people improved, and as a result, they ... shared their things with me. ... For example, when I started

communicating better with my friend and stopped avoiding her, she opened up to me, and ... we are now best friends.

Overall, the participants seemed to have developed a better sense of taking others' perspectives, communicating with a concern for others, and building better relationships.

Theme 6: Kindness and Gratitude

In the last of the affordances, the participants described learning about kindness and gratitude (15 participants, 104 references). They described developing a better awareness of gratitude (10 participants, 12 references), kindness (6 participants, 7 references), and interconnectedness among sentient beings (6 participants, 8 references). Most participants also described engendering a feeling of concern for others (12 participants, 30 references). Moreover, the participants described their efforts to put their enhanced awareness of these values into practice through acting with kindness (10 participants, 33 references) and expressing gratitude (5 participants, 14 references).

The participants described enhancing their awareness of gratitude and kindness in many ways. For example, a girl (PG01) explained her new learning about gratitude and its importance and said,

After the session on gratitude, I started thinking it was not sufficient to just be thankful for the things we get because there are so many other people who do something in your life. And you get to live a better life because of that. ... So, [I realized] you have to be more thankful to those people. Even if they are unfriendly to you or are not the most likable persons, there is still something they have done in your life that will have an impact on the rest of your life. So, if you take it positively and be thankful for it, you can lead a better life. I think that is something I learned from the session.

Similarly, describing his learning, a boy (JB10) narrated how his views about treating other people became kinder during the intervention. He said,

I will treat others nicely when I grow up, even if they have no resources. If I has not attended these sessions, I would have thought, 'Let it be. What's the need to be around them? They are poor.' Now, because of these sessions, I would approach them. Check on them. I will see if I can help them.

Narrating his appreciation for the idea of interconnectedness, a boy (PB16) said, "[I learned] I'm not [just] because of me. I'm because we all are." The enhanced understanding of interconnectedness seemed to have a two-fold influence, that is, the development of gratitude for

others for their contribution to an individual's life as described in the first quote in this theme, and the development of a feeling of concern toward others as described further. A girl (PB14) said,

I realized I should give back. So many people help me. I should also help them back. ... Everything is connected. Interchanging things can have a big effect on our and others' lifestyles. ... Our actions are very important, and we play a major role in society. So, we must be careful of [our actions]. We can't be super rigid.

This demonstrates a shift in the participant's thinking about the effect of her actions and the role she plays in society. The change seems to have developed a broader, more prosocial approach in her thinking and possibly in her actions.

The participants narrated several examples that reflected the development of a prosocial concern. I categorized this concern into three broad categories. First, a group of excerpts indicated a general concern for other people (5 participants, 9 references). For example, a boy (JB23) narrated,

[I realized] we must never just think about ourselves but also about others. Earlier, I used to grab opportunities for myself at the expense of others. Now I share those opportunities with them. ... I learned I must think about others too because they also have similar feelings.

In a similar response, another boy (PG16) said,

I noticed a change between the old me and the new me. The old me never thought about other people, how they would feel—sad or happy—if I say something. I learned how important it is to think about others.

In the other two categories, the participants described a humanitarian (6 participants, 8 references) and environmental concern (6 participants, 13 references), respectively. Describing the experience of one of the home practice tasks, a boy (PG23) said, "When I tied one hand behind my back and tried my daily chores, I realized how difficult life is for people with disabilities." Another girl (JG28) described a shift in her thinking as she said,

Whatever I do in the future, it should have humanity in it. I started to relate more to the police than the mafia, the former of which saves lives without wanting anything in return while the latter is more hurtful and destructive. ... Earlier, I used to think all people are mean. ... Now I want to do something for needy people. Everyone should at least have something such as home and food.

Several participants also described developing an environmental concern, especially after the session on interconnectedness and ecological footprint. One such example appears below.

Last, the participants described several ways in which they started to apply gratitude, kindness, and prosocial concern in their daily lives. A participant (JG11) narrated putting her environmental concern into action and said, “Oftentimes, I used to keep the laptop lights on the whole night. Now I vigilantly turn them off. I have also reduced eating packed food ... because it creates a lot of plastic and is unhealthy.” Another girl (PG05) reported a change in her helping behavior, “I used to ignore people a lot when they needed help. Now I run to help, especially when I see someone is helping others and I think I can help. My self-confidence has improved.” Describing a bullying incident that happened with his peer, a participant (JB23) pointed out the following,

A group of students in my class bullies another classmate. Recently, a classmate hit him with a water bottle, and everybody ignored him. He was crying alone sitting by his bench. That day I decided to be his friend, and now I’m his friend. ... I recalled the sessions on kindness and walking a mile in others’ shoes, and I realized how much pain he must be in. ... Now we are always together. We have become good friends. And he supports me when someone bothers me.

This and many other narrations from the participants indicate they developed an enhanced understanding of kindness, gratitude, and prosocial concern, sometimes emerging from the understanding of interconnectedness. And they made efforts to inculcate these values in their attitude and behavior during and after they participated in the intervention.

Theme 7: Challenges and Ways to Improve

Although the participants’ experiences in the intervention were largely positive, they also expressed several challenges and suggested numerous ways to improve the intervention (17 participants, 96 references). Most challenges and suggestions were about participation, and some were about the time, frequency, or duration of the intervention. Further, I describe these two subthemes with concrete examples from student interviews.

Subtheme 7.1: Barriers to Participation

The participants faced three broad challenges: (a) lack of motivation, (b) constrained interactivity, and (c) limitations of virtual learning and technological challenges.

Lack of Motivation. Several participants described motivational barriers to their participation and suggested boosters to enhance their participation in the intervention (12

participants, 36 references). Six participants (10 references) expressed challenges with writing a weekly journal. They disliked writing, in general. A boy (JB23) said, “I didn’t enjoy diary writing much.” Also, some of these participants struggled with reflective writing. For example, a boy (PB21) mentioned, “I used to find journal writing boring. Also, I struggled with it because I didn’t know what to write. ... And eventually, my participation in it waned because I thought it was difficult.” One key takeaway is that future participants would need more handholding in reflective writing. Demonstrating its process and illustrative examples might be helpful. The participants also provided some suggestions to enhance student motivation. These included the “addition of games” (PB17, PB21), “introducing debates and cartoon strip-making activities” (PB07), and “arranging more field visits” (JG28, JB23).

Constrained interactivity. Although interactivity turned out to be an important aspect of this intervention as explained in Theme 3, some participants expressed concerns about the same (7 participants, 11 references). Three participants, all girls, expressed they hesitated about sharing their personal experiences with others in the class during the paired activities or with their teacher via the journal. One girl (JG10) could not trust her partner (JG21) at first during the compassionate listening activity and was uncomfortable sharing one of her sad moments with her. However, by the end of the activity, after she expressed herself and so did her partner, she learned she could trust others. Another girl (PG05) experienced a similar challenge with her journal entries. She was worried that her teacher would misunderstand her if she wrote something wrong in the journal. “I was very afraid to express my thoughts,” she said. However, her experience changed eventually. In her words, “Slowly when the teachers comforted me, I started feeling comfortable about expressing my feelings. And then I started doing so. Otherwise, I used to be very afraid of others’ opinions of me.” Although eventually, these participants felt comfortable about expressing themselves, the intervention team including teachers needs to be more mindful of this limitation and address this concern with students right at the start of the intervention.

Furthermore, five participants (3 boys and 2 girls) demanded more interaction among the students. One boy (JB10) suggested adding two extra sessions at the start and end of the intervention for intragroup introductions and feedback, respectively. Another student (PG14) thought the interaction during the group activities was mellow. She hated that “she was the only one speaking a lot or that others did not want to speak at all.” Another student (PB23), who

described himself as an introvert, shared he hoped “the students would speak briefly so that others would also get a chance to speak and maintain their interest in the session.” Two other students said, “more group discussion would have meant more interactions” (PG15, JB02). Overall, there is a scope for improvement in interactivity, especially in virtually conducted paired and group activities.

Limitations of Virtual Learning and Technological Challenges. When asked about what changes needed to be made to the intervention to make it better 10 participants (17 references) mentioned their preference for in-person sessions. They described the online sessions discouraged them from participating in discussions (JB10); were less fun compared to in-person sessions (JG28); and allowed learning distractions such as YouTube (JB02). The online sessions also impeded learning more deeply about meditation (PB16) and interacting with friends (PB16, JG11), which in essence are experiential in nature.

Moreover, five participants faced technological challenges (8 references). One student (JB10) who attended the sessions from his rural village often faced internet connectivity issues during the online sessions. This was a “frustrating” experience, he said. Two students (PB16, JB28) found Google Classroom difficult to use. They could not figure out how to upload their homework. Two girls (JG11 and JG28) faced frequent issues with Zoom software and could not connect their audios. That limited their ability to participate in the sessions. One of these girls (JG28) could only participate via chatbox. She expressed her frustration by saying,

When we meet in person, we can look into others’ eyes and gauge if they have understood us. If they haven’t, we can explain again. But, when there are technical issues, you cannot turn on your camera; you can’t see others. The voice breaks half the time. ... But when we meet in person, we sit together and work together. We make more friends. We feel special.

Overall, although few participants experienced such challenges, the online learning format did present some noticeable technological challenges. At least, those under a teacher’s control such as Google Classroom could be addressed with simple techniques such as arranging a technical support session for those facing challenges.

Subtheme 7.2: Time, Frequency, and Duration Aspects

When asked for suggestions for improvement in the intervention, the participants also suggested increasing the number of sessions from 10 to 15 or 20 (PG14, JB10) so that the intervention

would be “more effective” (JB02). Some suggested increasing the length of the session from 70 minutes to 120 minutes so that “more activities could be accommodated in one session” (PG14, JB23). Doing so would “allow more students to participate in the session” (PG15, JB28). However, one boy (JB02) had the opposite view. He said, “I felt the class duration was too long. ... The normal session is usually 40 minutes long. It would have been better to have two such 40-minute sessions in a week instead of having one that was for 1.5 hours.” A girl (JG06) suggested reducing the gap between the two consecutive sessions. The sessions were conducted once every week; however, according to her, “The long gap between two classes ... made it hard to recap what had happened in the previous class.” Overall, these suggestions indicated an overall enthusiasm for the intervention among the participants. However, the timings, duration, and frequency of the sessions could be refined in the future.

Integrating Quantitative and Qualitative Findings

The joint displays below (see Tables 30 and 31) show quantitative results alongside qualitative themes for each related construct. In what follows, I describe mixed-methods inferences or meta-inferences showing the overall fit of the quantitative and qualitative findings.

Prosocial Behavior and Compassion for Others

The quantitative results show that the mean scores for self-reported prosocial behavior were statistically different for at least two time points. The biggest difference is seen in the graph between mid-intervention and pre-intervention assessments, indicating that the self-reported prosocial behavior improved during the intervention. The qualitative results, specifically in Theme 6, confirmed this finding by revealing the participants’ reports of personally noticeable changes in the understanding and practicing of gratitude and kindness.

Like prosocial behavior, the quantitative results show a significant improvement in self-reported compassion for others during the intervention. The qualitative results, especially in Themes 4 and 6, confirmed this finding in which the participants mentioned personal growth in mindful engagement and feelings of concern for others. Compassion for others is also reflected in Themes 5 and 6 through responsible communication and kind behavior, both are physical manifestations of having compassion for others. The concordance of both types of results

supports the view that the intervention can positively influence the development of prosocial behavior and compassion for others from the students' perspective.

Empathy: Perspective Taking and Empathic Concern

The quantitative results show a non-significant growth in both the subconstructs of empathy, namely, perspective taking and empathic concern. However, arguably the most salient qualitative theme, namely, *responsible communication and relationship building*, provided a discordant result, indicating the participants' viewed a growth in perspective taking, not only at an awareness and understanding level but also at the attitudinal and behavioral level (i.e., application), which helped them build better and stronger relationships. Interestingly, the quantitative results from the delayed treatment group for self-reported perspective taking were in concordance with the qualitative results from the treatment group. Further investigation is warranted to uncover the seeming discordance between the two types of results and for two different groups.

Regarding empathic concern, the quantitative results show no significant growth during the intervention; however, the qualitative results indicate otherwise. As described earlier in compassion for others, Theme 6 revealed evidence supporting the participants' view that the intervention engendered feelings of concern for others. The discordance between the quantitative and qualitative results for empathic concern and the concordance between the two types of results for compassion for others indicate a possible overlap between the constructs of empathic concern and compassion for others. The quantitative results in RQ1 also support this inference, given there exists a large correlation between the two constructs and the regression coefficient for empathic concern in the model predicting prosocial behavior is non-significant in the presence of compassion for others. Therefore, integration of the quantitative and qualitative results expands understanding by showing the overlap between the constructs of empathic concern and compassion for others.

Table 30. Joint Display of Quantitative Outcomes and Qualitative Experiences of the Intervention Participants

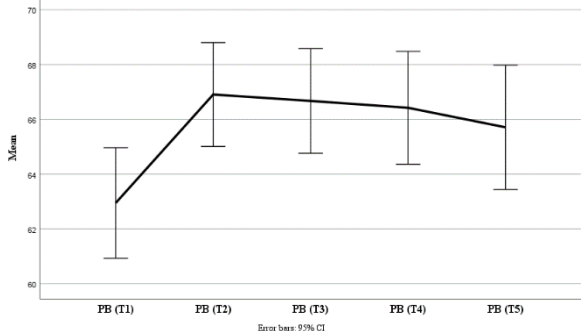
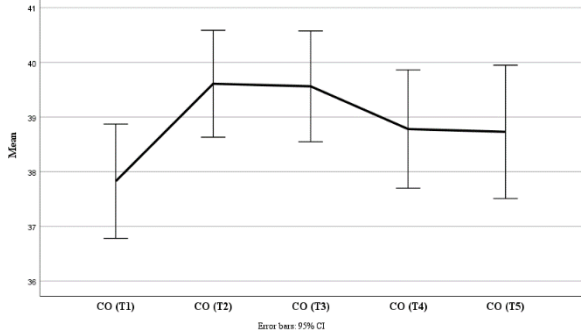
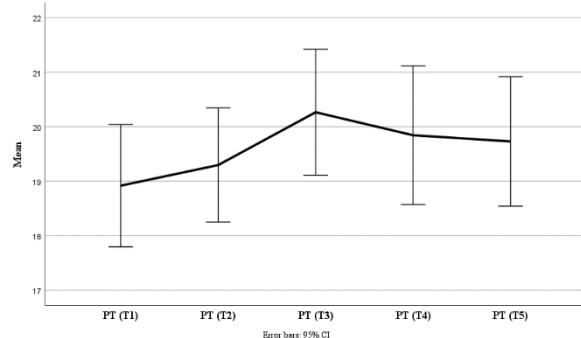
Construct	Quantitative finding Trend over time ^a	Qualitative finding Theme, subtheme, and illustrative quote	Meta-Inference Fit												
Prosocial behavior	<p>$p = .002, \eta_p^2 = 0.07$ (moderate effect)</p>  <table><caption>Mean Trend for Prosocial Behavior (PB)</caption><thead><tr><th>Time Point</th><th>Mean</th></tr></thead><tbody><tr><td>PB (T1)</td><td>~63.0</td></tr><tr><td>PB (T2)</td><td>~67.0</td></tr><tr><td>PB (T3)</td><td>~66.5</td></tr><tr><td>PB (T4)</td><td>~66.0</td></tr><tr><td>PB (T5)</td><td>~65.5</td></tr></tbody></table>	Time Point	Mean	PB (T1)	~63.0	PB (T2)	~67.0	PB (T3)	~66.5	PB (T4)	~66.0	PB (T5)	~65.5	<p>Theme 6 > Kindness and gratitude I realized I should give back. So many people help me. I should also help them back. ... Everything is connected. Interchanging things can have a big effect on our and others' lifestyles. ... Our actions are very important, and we play a major role in society. So, we must be careful of [our actions]. We can't be super rigid. (PG14)</p>	<p>Confirmation Self-reported prosocial behavior significantly improved during the intervention, which corresponds with the interview participants' view that they learned about and practiced more kindness and gratitude.</p>
Time Point	Mean														
PB (T1)	~63.0														
PB (T2)	~67.0														
PB (T3)	~66.5														
PB (T4)	~66.0														
PB (T5)	~65.5														
Compassion for others	<p>$p = .005, \eta_p^2 = 0.06$ (moderate effect)</p>  <table><caption>Mean Trend for Compassion for Others (CO)</caption><thead><tr><th>Time Point</th><th>Mean</th></tr></thead><tbody><tr><td>CO (T1)</td><td>~38.0</td></tr><tr><td>CO (T2)</td><td>~39.5</td></tr><tr><td>CO (T3)</td><td>~39.5</td></tr><tr><td>CO (T4)</td><td>~38.5</td></tr><tr><td>CO (T5)</td><td>~38.5</td></tr></tbody></table>	Time Point	Mean	CO (T1)	~38.0	CO (T2)	~39.5	CO (T3)	~39.5	CO (T4)	~38.5	CO (T5)	~38.5	<p>Theme 4 > Mindful engagement Sometimes I broke into tears while thinking about others as I listened to compassion and kindness meditations. A lot of thoughts were running in my mind during the meditation. And I was self-reflecting at that time. (JG10)</p> <p>Theme 6 > Prosocial concern I noticed a change between the old me and the new me. The old me never thought about other people, how they would feel—sad or happy—if I say something. I learned how important it is to think about others. (PB16)</p>	<p>Confirmation Self-reported compassion for others improved significantly during the intervention, which corresponds with the interview participants' view that they learned about and practiced more mindfulness and developed feelings of concern for others.</p>
Time Point	Mean														
CO (T1)	~38.0														
CO (T2)	~39.5														
CO (T3)	~39.5														
CO (T4)	~38.5														
CO (T5)	~38.5														

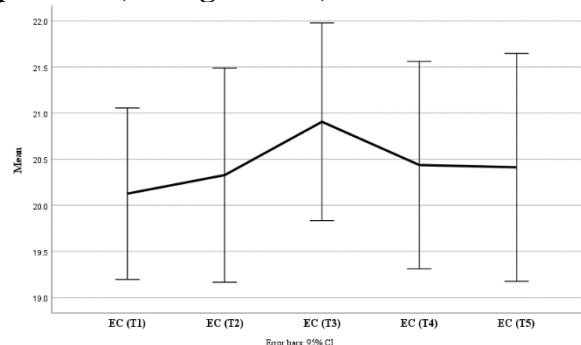
Table 30 continued

**Empathy -
Perspective
taking** $p = .129$ (not significant)**Theme 5 > Perspective taking**

But then I started to *walk a mile [in others' shoes]*. I actually started to think about others' feelings and opinions and the reasons behind them. And then I realized others' opinions can also be right, not just mine. (JG06)

Discordance

The statistical non-significance of change in self-reported perspective taking is discordant with the qualitative finding that the participants opined they developed perspective taking and practiced responsible communication, helping them to build better relationships.

**Empathy -
Empathic
concern** $p = .370$ (not significant)**Theme 6 > Prosocial concern**

A group of students in my class bullies another classmate. Recently, a classmate hit him with a water bottle, and everybody ignored him. He was crying alone sitting by his bench. That day I decided to be his friend, and now I'm his friend. ... I recalled the sessions on kindness and walking a mile in others' shoes, and I realized how much pain he must be in. ... Now we are always together. (JB23)

Expansion

The statistical non-significance of change in self-reported empathic concern is discordant with the qualitative finding that the participants described growth in prosocial concern. The qualitative and qualitative overlap with compassion for others extends the understanding of the construct.

Note.

^aThe statistical results indicate univariate effects of time based on repeated-measures multivariate analysis of variance (Research question 2) for the treatment group.

Student Perceptions of Classroom Quality

Table 31 shows the quantitative results alongside the qualitative themes for each related construct of classroom quality (appeal, meaningfulness, choice, challenge, and academic self-efficacy) in descending order. The radial dials indicate the mean scores (out of five) for the constructs as perceived by the treatment group at the post-intervention assessment. The last column indicates the meta-inference based on the integration of the quantitative and qualitative findings. Next, I describe each construct separately.

Appeal

The quantitative results show that all participants reported very high scores on the appeal construct of SPOCQ, indicating that they perceived the intervention to be highly appealing. The qualitative results supported and expanded this finding by highlighting numerous instances of content and pedagogical appeal in Theme 1 that provided unique and novel learning experiences, facilitated through a mix of pedagogical approaches including the field visit and in-class and home practice activities. However, some participants explained barriers to participation caused due to a lack of motivation and the constraints of the virtual learning format. Regardless, the integration of quantitative and qualitative results shows that, overall, the intervention was enjoyable and a fun learning experience because of the included topics and teaching approaches.

Meaningfulness

The quantitative results indicate that the participants perceived the intervention to be highly meaningful. The qualitative results confirmed and expanded this finding by emphasizing two aspects of the participants' experience that can explain their perceived meaningfulness: (a) relevance to and (b) usefulness of the intervention's topics in the lives of the participants now and in the future. Overall, the integration of the two types of results enhances understanding of perceived meaningfulness as supported by the intervention's relevance and usefulness to the participants.






Choice and Challenge

Although the quantitative results show that the participants rated the intervention high for choice and challenge, there was no strong supporting or opposing evidence in the qualitative findings. Taken together, the two types of findings indicate discordance. Probing the participants explicitly about perceived choices they were offered in the intervention and the appropriateness of the challenge level may uncover the true relationship between the two types of inferences.

Academic Self-efficacy

The quantitative results show that the participants perceived the intervention as supportive of their academic self-efficacy. The qualitative results confirmed and expanded this finding by highlighting the aspect of the simplicity of the language used in the intervention. Some participants described they initially perceived the intervention to be hard; however, their perceptions changed as they found the teachers to deliver the content in an easy language without using wordy sentences or jargon. This bolstered their self-efficacy about the intervention and enhanced their learning. Therefore, the integration of quantitative and qualitative results enhanced understanding of how the choice of language may have supported the participants' perceived academic self-efficacy.

Table 31. Joint Display of Quantitative Scores of Student Perceptions of Classroom Quality and Qualitative Experiences of the Treatment Group Participants

Construct	Quantitative finding	Qualitative finding	Meta-Inference
	Post-Intervention Mean Score ^a	Theme and subtheme	Fit
Appeal		<p>▲ Theme 1: Appeal > Content and Pedagogical appeal The participants perceived the intervention to provide appealing content using enjoyable teaching methods.</p> <p>▼ Theme 7: Challenges and ways to change > Barriers to participation However, the participants faced several barriers, especially due to the virtual format, which made learning less fun.</p>	Expansion
Meaningfulness		<p>▲ Theme 2: Meaningfulness > Relevance and usefulness The participants described the intervention as relevant to and useful in their daily lives.</p>	Expansion
Choice		No prominent evidence in support or against it.	Discordance
Challenge		No prominent evidence in support or against it.	Discordance
Academic self-efficacy		<p>▲ Theme 1: Appeal > Simplicity One reason the participants found the program appealing was its simplicity, especially in the language used, which changed their initial perceptions of the intervention's topics to be hard.</p>	Expansion

Note. ▲ = positive experience, ▼ = negative experience

^aScores are on a scale from 1 (strongly disagree) to 5 (strongly agree).

CHAPTER 5 DISCUSSION

The two aims of this convergent mixed-methods study were to (a) examine the interrelationships among the conceptualized sub-constructs of concern for others, and (b) to evaluate the effectiveness of the *Samvedana* intervention for adolescents with high intellectual abilities to gain knowledge about the potential of the intervention. The results show that self-reported empathy, other-oriented compassion (i.e., compassion for others and compassion for other living beings), and prosocial behavior are intercorrelated, and that empathy and compassion for others are strong predictors of prosocial behavior. The results also show that the participants perceived the intervention to have high classroom quality and indicated that the intervention may have supported the development of a concern for others, especially prosocial behavior and compassion for others. Further, I discuss the two aims and related findings separately.

Interrelationships Among Key Outcomes

The finding that empathy and other-oriented compassion (i.e., compassion for others and compassion for other living beings) are strongly correlated with prosocial behavior and are strong predictors of prosocial behavior aligns with findings from previous studies (Batson, 1991, 2011; Hoffman, 2000; Leiberg et al., 2011; Tomasello et al., 2005). However, researchers in these studies either examined empathy or compassion but not both together. In this study, analyzing the sub-constructs of empathy and compassion together in one model extends the current understanding of the interrelations among these key constructs as discussed further.

Only perspective taking and compassion for others significantly predicted prosocial behavior in the combined model. And neither empathic concern nor compassion for other living beings did significantly predict prosocial behavior in the combined model. The finding regarding perspective taking supports the finding that overt instructions to mentalize perspectives of others increase one's subsequent prosocial behavior (Batson et al., 1997, 2001; Stürmer et al., 2005; Todd et al., 2011). Similarly, the current finding supports the previous finding that developing compassion for others supports prosocial behavior and motivates altruistic and caring behavior, and a desire to alleviate the suffering of others (Batson, 1991; Leiberg et al., 2011). Moreover,

together, the findings from this study support the finding that empathy and compassion are related yet distinct constructs (Zaki, 2014). The findings highlight the overlap between compassion for others and empathic concern (Davis, 1980, 1994) and between compassion for others and compassion for other living beings (Nas & Sak, 2021). Together, these findings reaffirm that the constructs of empathy and compassion overlap at empathic concern, and both predict prosocial behavior. However, perspective taking and compassion for others may be the strongest predictors of prosocial behavior in adolescents with intellectual gifts, and therefore, serve as important sub-constructs of the proposed conception of concern for others in this study.

Surprisingly, self-compassion neither correlated with prosocial behavior nor with any other key variable. This contradicts the finding of Nas and Sak (2021) who reported moderate correlations between self-compassion and other-oriented compassion. Therefore, more research is needed to understand the relationship between self-compassion and concern for others.

The present findings revealed that girls reported significantly greater prosocial behavior mean scores compared to boys, which aligns with existing research findings (Caprara et al., 2015; Luengo Kanacri et al., 2013). The results suggest that gender is a significant predictor of self-reported prosocial behavior with adolescent girls showing a greater tendency to engage in prosocial behavior compared to boys. Like Davis's (1980) findings with adult samples, on average, girls in this study reported greater scores each time compared to boys for perspective taking and empathic concern; however, gender did not significantly correlate with both empathy sub-constructs. Therefore, the current results for the relationship between gender and empathy variables are inconclusive and warrant further examination.

Furthermore, on average, girls in this study almost always reported greater scores for compassion for others; however, this study revealed mixed results regarding the statistical significance of gender differences in self-reported compassion for others. In the latest study by the authors of the Compassion Scale conducted with Turkish high school students, Nas and colleagues (2021) reported significant gender differences in compassion for others and compassion for other living beings but not in compassion for self. Therefore, the current results on gender differences in compassion among adolescents as measured by the Compassion Scale are mixed; however, a general trend reporting greater self-reported other-compassion among girls seems to be emerging across the two studies.

The present findings related to other covariates—social connectedness and social desirability also revealed important relationships with the key constructs of concern for others. Contrary to the understanding that social connectedness may influence empathy, compassion, and prosocial behavior (Lee & Robbins, 1995), the current results indicated no relationships among these variables. Therefore, social connectedness seems to be less relevant to further research on this topic, at least with adolescents. However, as expected, social desirability scores correlated strongly with the key variables of this study, especially more for girls than for boys. This indicates the measurement of the concern for others is prone to the effect of social desirability and its interaction with gender. Researchers in this area would benefit from controlling for social desirability influences on the data collected using self-reported measurements.

Overall, the results of this study indicate that the construct of concern for others mainly involves perspective taking, compassion for others, and prosocial behavior. Empathic concern and compassion for other living beings seem to overlap with compassion for others. And compassion for self and social connectedness seem less relevant to the construct of concern for others. However, controlling for social desirability, especially while using self-reported data, seems particularly important in future studies on this topic.

Intervention Effects, Student Engagement, and Feasibility of the Intervention

As described in the section on integrating quantitative and qualitative findings of this study, overall, the participants had a positive experience in the intervention, yet they indicated scope for improvement. The participants described facing few yet noteworthy barriers to participation in the virtual delivery of the intervention and expressed the intervention would be more effective in an in-person format. This finding is consistent with findings from recent studies concerning the limitations of remote teaching during the pandemic (Chowkase et al., 2022; Desmet et al., 2022). However, notably, the current results highlight that the virtual intervention was appealing and meaningful to the participants because of its relevant, useful, and new content and a mix of pedagogical approaches used in the intervention (Mesurado et al., 2019).

Overall, empirical studies on the effectiveness of interventions targeting the development of concern for others are limited. The present findings, therefore, contribute to the limited body

of literature in this area by illuminating the possibility of developing and implementing such intervention in a virtual format for adolescents with intellectual gifts.

The central finding of this study revealed that the participants reported a significant growth in their concern for others over time and provided preliminary evidence that participation in the intervention may have contributed to that growth. Given the novelty of such type of intervention (Mesurado et al., 2018), especially for adolescents (Kirby, 2017) and in the gifted education field (Moran, 2020; Renzulli, 2020; Sternberg, 2020), these results hold a promise for future research in this area. However, the result warrants further investigation of the intervention effects, perhaps by adding a true control group from pre-intervention to follow-up assessment.

More finely, these results indicate a significant growth in the participants' self-reported prosocial behavior with a moderate effect. This finding aligns with the findings of two recent systematic reviews of interventions targeting the development of prosocial behavior (Laguna et al., 2020; Mesurado et al., 2018). In fact, the moderate effect reported in this study surpasses the average small effect reported in the meta-analysis conducted by Mesurado and colleagues (2018). The present findings also extend the findings from previously studied school-based contexts (Mesurado et al., 2018) by showing the likely effectiveness of the intervention in an outside-of-school setting.

Similarly, findings from this study also indicate a significant growth in the participants' self-reported compassion for others with a moderate effect. This finding aligns with the findings of the meta-analysis of compassion-based interventions conducted by Kirby and colleagues (2015) who reported significant short-term moderate effect sizes for compassion. Moreover, Jazaieri's (2018) review indicated that most compassion interventions with adolescents only focused on self-compassion. In contrast, the findings of this study add to the limited literature on the effectiveness of compassion interventions for adolescents with a focus on other-compassion.

Unlike for prosocial behavior and compassion for others, the present quantitative and qualitative findings regarding the sub-constructs of empathy did not converge. Although surprisingly, the quantitative findings in this study did not reveal a significant change in self-reported empathy over time, the qualitative findings revealed discordance with the quantitative findings. Specifically, the qualitative findings illustrated the participants' learning and application of perspective taking, prosocial concern, and responsible communication, resulting in better relationship building. Although previous empathy interventions have often been effective,

they have been conducted with adults and have shown mixed levels of effectiveness (Davis & Begovic, 2014; Teding van Berkhout & Malouff, 2016). Therefore, the findings of this study qualitatively add to the limited research on the effectiveness of empathy-building interventions with adolescents.

Furthermore, the qualitative and quantitative results revealed that the participants found the content of the intervention to be appealing and meaningful, which might have contributed to the overall effectiveness of the intervention. The participants' reports of appealing and meaningful topics align with the topics included in previous interventions targeting the development of prosocial behavior, compassion, and empathy: emotion recognition and emotional regulation skills (Caprara et al., 2015; Laguna et al., 2020); kindness, gratitude, and interdependence (Lavelle, 2017); common humanity (Jinpa, 2010); and direct and indirect perspective-taking skills and expressing empathy (Davis & Begovic, 2014; Schonert-Reichl et al., 2012).

Similarly, the participants found the pedagogical approach in the intervention to be similarly appealing and meaningful. They described various accounts of pedagogical aspects that may have influenced their experience in the intervention. These included general approaches such as didactic instruction coupled with discussion groups and activity-based learning (Davis & Begovic, 2014; Garaigordobil, 2004); small group discussions on an imaginative situation resembling real-life experiences (Hodson et al., 2009); and realistic and fictional audiovisual material such as movie clips (Shechtman & Tanus, 2006). The participants' accounts also included specific activities such as mindfulness and meditation practice (Bankard, 2015; Lavelle, 2017; Negi, 2009; Ozawa-de Silva & Dodson-Lavelle, 2011); attentive and non-judgmental listening (Davis & Begovic, 2014; Jazaieri, 2018); and reflections on gratitude and interdependence (Lavelle, 2017). However, active experiences—field visits and home practice activities seemed to be the most appealing components of the intervention (Kirby, 2017). Overall, the wide range of content and pedagogical approaches explained above indicate the effectiveness of the intervention cannot be attributed to any single aspect or approach and that future interventions targeting the development of concern for others may benefit from incorporating a mix of topics and approaches mentioned above. Because previous studies in this area have either only focused on developing empathy or compassion, the present findings highlight the importance of incorporating both in one intervention. The finding that revealed

perspective taking and compassion for others as significant predictors of prosocial behavior in the combined model also supports the integration of empathy- and compassion-based components in one intervention. Overall, based on the present findings, an approach that integrates empathy, compassion, and prosocial behavior in the conception and development of a concern for others seems appropriate and worthy of future investigation.

Implications and Future Directions

The findings from this study add a unique socio-cultural context (i.e., the western region in India) to existing literature in which most studies have been conducted in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries (Hendriks et al., 2019). Moreover, by uncovering similarities across the contexts, this study points to the global nature of the study's topic. Further research focusing on replication in different socio-cultural contexts may reveal the nuances of the global and contextual aspects of the nature and development of a concern for others. That is, the results of this study may have been influenced by the socio-cultural background of the participants including their religious beliefs, social norms, family practices, and parental influences peculiar to the culture of the participants. By focusing on the granularities of these socio-cultural aspects in relation to the assessment and development of a concern for others, future studies can reveal similarities and differences across cultures. The finding that indicates perspective taking and compassion for others are significant predictors of prosocial behavior implies that educators might benefit from focusing on the development of knowledge, awareness, and skills of these two variables in future interventions targeting the development of concern for others. Based on the present findings and the existing literature (e.g., Bankard, 2015; Batson et al., 2002; Batson, Polycarpou et al., 1997; Caprara et al., 2015; Davis & Begovic, 2014; Jazaieri, 2018; Jinpa, 2010; Laguna et al., 2020; Lavelle, 2017; Lee, 1987; Mesurado et al., 2019; Ozawa-de Silva & Dodson-Lavelle, 2011; Schonert-Reichl et al., 2012), I suggest a greater thrust on gratitude, kindness, common humanity, and interconnectedness and greater exposure to humanitarian and environmental concerns to facilitate the development of compassion for others.

Although the findings indicate an immediate positive effect of the intervention on the participants' concern for others, a key finding points to the shortcoming related to the lack of sustenance of the effects three months after the intervention. This necessitates two things. First,

investigating the participants' qualitative experiences during the follow-up assessments would allow the researchers to triangulate the quantitative finding regarding the intervention's long-term effect. Second, the current intervention would benefit from enhancements as suggested by the participants. These include adding more classroom sessions and more practice activities, conducting the intervention in person, and including more direct and active experiences such as field visits and in-class discussions. These modifications might help sustain the intervention effects for a long time. However, future research should also focus on the developmental readiness of adolescents of ages 11-13 years regarding the development of concern for others. Possibly, there are natural cognitive and psychological limitations at this age for developing and sustaining a concern for others. The treatment and control groups separately indicated significant growth over time, which might be an indication of maturation; however, both groups showed accelerated growth during the time of the intervention, that is, between T1 and T3 for the treatment group, and between T3 and T5 for the control/delayed treatment group. Therefore, future research would benefit from accounting for maturation.

One key future direction includes enhancing the current intervention based on participants' feedback. Specifically, findings from the qualitative data, especially from theme 7 about challenges faced and suggestions to improve are more relevant in this regard. The participants described several barriers to participation, namely, lack of motivation, constrained interactivity, and limitations of virtual learning and technological challenges. In future revisions to the intervention, I would add more sessions to de-densify the delivered content and provide more opportunities for deeper classroom discussions. In some of the lessons (e.g., the lessons on common humanity and kindness), I would reduce the current number of slides in lesson presentations. This would help avoid information overload for students. The participants found journaling activity to be challenging and uninteresting. I would provide additional support for journaling, for example, by demonstrating how a reflective journal entry is written. With more time at hand, I would also encourage teachers to reserve some slots to engage with students one on one, which might help with gauging student interest, seek instant feedback from them, and make local modifications to cater to individual needs of pace and complexity. Finally, I would create two separate versions of the intervention to suit an in-person and virtual mode of delivery.

Most importantly, one-time participation in this intervention is unlikely to produce any long-term changes. Therefore, the immediate next goal should be to focus on translating

immediate self-reported perceptual changes in concern for others into long-term attitudinal and behavioral changes. Participation in follow-up interventions might be helpful in this pursuit. Therefore, the immediate next step should be to develop follow-up interventions for those who have participated in this pilot intervention. The follow-up intervention could use practice sessions involving real-life situations outside of the classroom. Field visits and community service experiences might help in this regard. With growing age, students could also be exposed to more complex topics such as discrimination, polarization, and climate change. As such, older adolescents might benefit from direct exposure to real-life issues where they can practice skills of empathy and compassion and act in prosocial behavior.

Another key future direction includes extending this intervention to a heterogeneous group of students. Based on the qualitative feedback from the current participants of this study, other students might also enjoy this intervention and find it relevant to and useful in their lives. To extend this intervention to others, I would keep the current design intact; however, I would break the 75 minutes sessions into two parts of 40-45 minutes each to ensure students can retain their attention throughout the session. In addition to the enhancements mentioned in the previous paragraph, I would also include more hands-on activities to make learning more concrete for everyone. To retain the interest of heterogeneous students, I would design more options for classroom and home practice tasks. I would also include more follow-up discussions about classroom and home activities to facilitate conceptual reinforcements. This would also reduce the open-endedness of the prescribed learning assignments and simplify learning for heterogeneous students. Journal writing emerged as a common challenge for the participants in this study. Therefore, I would provide more support (e.g., modeling the writing) for reflective thinking expected in journal entry writing. This might help students in expressing their thoughts and learning more concretely. These modifications might help reduce the complexity and abstraction level of the current intervention, enhance interactivity and engagement in the intervention, and make the intervention more inclusive for heterogeneous groups of students.

Limitations

This study has several limitations. The first limitation involves measurement procedures. I relied on self-reported data from adolescents to examine the relationships among the key variables and to measure the effectiveness of the intervention, which can be error-prone and may

have validity issues (e.g., Elgar et al., 2005; Teye & Peaslee, 2015). In addition, the presence of the social desirability effect in this study might have amplified this challenge. However, I made efforts during the assessments to encourage more valid self-reporting by describing to the participants my efforts to keep their data confidential and explaining that their data will be analyzed across participants rather than by analyzing individual responses. Moreover, I used the mixed-methods approach to triangulate the findings, which enabled me to avoid drawing inferences from self-reported data alone. However, I recommend caution while interpreting, generalizing, and transferring findings to other groups and contexts.

The second limitation relates to the experimental research design. I could not include a true control group in this study between T3 and T5 assessments because the control group started receiving delayed treatment immediately after the treatment group completed the intervention. This limited the scope to draw any causal inferences from the data about the intervention effect for the treatment group in comparison to the control group. However, the trends observed over time separately for the two groups and data from the qualitative strand of the study allowed me to develop cautioned conclusions about the extent of the intervention's effectiveness. Regardless, the readers should not infer direct causality between the participation in the intervention and the quantitative changes in the focal outcomes.

The third limitation involves the lack of adequate sample size to detect small intervention effects, especially in the repeated-measures MANOVA involving four outcomes and five time points. Future research should include a larger pool of participants. However, schools and outside-of-school talent development programs often lack bigger samples than the sample of this study. Instead, increasing the number of assessment time points can help resolve the power issue and open the possibilities of conducting more sophisticated data analyses such as growth curve modeling.

The fourth limitation relates to familiarity bias. As explained in the positionality statement, I have a historical affinity with the two research sites where I conducted this study. This might have prejudiced my interpretation of the data, especially of the qualitative data including interviews and classroom observations. Therefore, I employed several trustworthiness measures including using mixed-methods triangulation, bracketing, memo writing, trail auditing, and peer debriefing. However, I suggest caution in extrapolating the findings to other contexts.

The fifth limitation involves the environmental factors at the two sites. The cultural environment at these sites supported the philosophy that one's gifts should be developed to contribute to the greater good. Therefore, some environmental effects might have influenced the results. Such effects could not be controlled or accounted for in this study. Replicating this study in different socio-cultural contexts might uncover the nature and extent of environmental influences.

Finally, the virtual format of the intervention created barriers to observing the classroom interaction. Most students kept their cameras turned off, and a few participants faced connectivity and other technical challenges. Moreover, I could not observe or account for other distractions at home. As indicated in the qualitative report, the participants described several of these challenges and indicated an in-person intervention would be more effective. Future research involving the in-person modality would uncover the difference in the effectiveness of the intervention by its modality of delivery.

Conclusion

Based on the present findings, concern for others seems to be an intercorrelated complex of empathy, other-compassion, and prosocial behavior with perspective taking and compassion for others as the most significant predictors of prosocial behavior. Moreover, the findings imply that a concern for others may be malleable and teachable in adolescents with intellectual gifts. Integrating content-related and pedagogical components from existing interventions targeting empathy, other-compassion, and prosocial behavior can inform the development of a holistic intervention for the development of a concern for others. I presented one such intervention in this study that seems to hold a promise for future revisions and effective implementation with intellectually gifted adolescents within the school and outside-of-school talent development programs. The findings from this study can inform educators in the field of gifted education and general education in developing talent that contributes to the greater good and welfare of all human beings and beyond.

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APPENDIX A. PROSOCIALNESS SCALE FOR ADULTS (PSA; CAPRARA ET AL., 2005)

The following statements describe a large number of common situations. There are no ‘right’ or ‘wrong’ answers; the best answer is the immediate, spontaneous one. Read carefully each phrase and mark the answer that reflects your first reaction.

Answer scale:

1	2	3	4
never/almost never true	occasionally true	sometimes true	often true
5			
almost always/always true			

1. I am pleased to help my friends/colleagues in their activities.
2. I share the things that I have with my friends.
3. I try to help others.
4. I am available for volunteer activities to help those who are in need.
5. I am emphatic with those who are in need.
6. I help immediately those who are in need.
7. I do what I can to help others avoid getting into trouble.
8. I intensely feel what others feel.
9. I am willing to make my knowledge and abilities available to others.
10. I try to console those who are sad.
11. I easily lend money or other things.
12. I easily put myself in the shoes of those who are in discomfort.
13. I try to be close to and take care of those who are in need.
14. I easily share with friends any good opportunity that comes to me.
15. I spend time with those friends who feel lonely.
16. I immediately sense my friends’ discomfort even when it is not directly communicated to me.

Scoring:

Compute a total score of prosocialness for all items based on the answer scale given above.

APPENDIX B. INTERPERSONAL REACTIVITY INDEX (IRI; DAVIS, 1980, 1983)

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE:

A	B	C	D	E
DOES NOT				DESCRIBES
DESCRIBE				ME VERY
ME WELL				WELL

Items included in this study

2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
8. I try to look at everybody's side of a disagreement before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
14. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
20. I am often quite touched by things that I see happen. (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)

- 22. I would describe myself as a pretty soft-hearted person. (EC)
- 25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
- 28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

Items not included in this study:

- 1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)
- 5. I really get involved with the feelings of the characters in a novel. (FS)
- 6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)
- 7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. (FS) (-)
- 10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
- 12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (-)
- 13. When I see someone get hurt, I tend to remain calm. (PD) (-)
- 16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
- 17. Being in a tense emotional situation scares me. (PD)
- 19. I am usually pretty effective in dealing with emergencies. (PD) (-)
- 23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
- 24. I tend to lose control during emergencies. (PD)
- 26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)
- 27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)

NOTE: (-) denotes item to be scored in reverse fashion

PT = perspective-taking scale

FS = fantasy scale

EC = empathic concern scale

PD = personal distress scale

Scoring:

Compute separate sub-scale scores for PT and EC as per the given answer scale and coding instructions (see below).

$$A = 0 \ B = 1 \ C = 2 \ D = 3 \ E = 4$$

Except for reversed-scored items, which are scored:

$$A = 4 \ B = 3 \ C = 2 \ D = 1 \ E = 0$$

APPENDIX C. THE COMPASSION SCALE (CS; NAS & SAK, 2021)

This scale was prepared to determine the compassion levels of children between the ages of 12-18. The information obtained from the scale will be used for scientific research. In order for the research to be reliable and valid, we request you to provide sincere and correct answers. Thank you in advance for your participation. Please choose the most suitable option for you for each item: Always: 5, Frequently: 4, Sometimes: 3, Rarely: 2, Never: 1.

Answer Scale:

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

1. I feel sorry when bad things happen to people.
2. I try to understand what sufferers feel.
3. I try to help people who feel bad.
4. I try to help people who need help.
5. I feel sorry for patients who are suffering.
6. When I see a crying child, I try to help him/her.
7. I try to put myself in the shoes of sufferers.
8. I find peace when I try to help sufferers.
9. I become happy when I try to do people a favor.
10. I may not be successful in all areas.
11. I can suffer like other people.
12. I can make mistakes like other people.
13. I can fail like other people.
14. I accept that I can't solve some of my problems.
15. I feel very bad when plants are damaged.
16. I try to prevent it when the trees are damaged.
17. I feel bad when animals in nature are damaged.
18. I strive for the protection of forests.
19. I feel bad about the pollution of the environment.
20. I feel bad about the burning of forests.

Compassion toward other people: Items 1–9

Compassion toward oneself: Items 10–14

Compassion toward other living things: Items 15–20

Scoring:

Using the answer scale given above, compute a total score for all 20 items and/or a sub-scale score for each/any of the three subscales.

APPENDIX D. STUDENT PERCEPTIONS OF CLASSROOM QUALITY (SPOCQ; WU ET AL., 2018)

We would like to know how you feel about your class activities. Read each statement and show how much you agree with it by selecting the option. There are no right or wrong answers. Your answers will be kept confidential. Remember to mark an answer for each statement. In the example below, the person agreed that the class was enjoyable. Thank you for your help in this project!

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Example: My class is enjoyable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Appeal

- 3. I find the contents of my class interesting.
- 9. The assignments for my class are interesting.
- 19. The material covered in my class is interesting.
- 20. The instructor provides examples of how the material relates to society and daily living.
- 25. I look forward to learning new things in this class.
- 26. I find the class content pleasurable.
- 31. I like going to my class each day.

Challenge

- 4. I find my class time instruction appropriately challenges my intellectual abilities.
- 8. I find my class assignments a good challenge.
- 11. I learn best when I am challenged.
- 15. This class content is an appropriate challenge for me.
- 18. I like the challenge of the projects in this class.
- 27. I use my critical thinking skills in my class.
- 33. I like the way my teacher challenges me in this class.

Choice

1. I am given choices regarding how to show the teacher what I have learned.
5. My teacher lets me choose the resources I use for projects.
6. When there are different ways to show what I have learned, I can usually pick a good way.
12. I am given lots of choices in my class.
16. I feel responsible for my learning because I am allowed to make choices in my class.
17. The teacher uses a variety of instructional techniques that make this class enjoyable.
22. I am encouraged to pursue subjects that interest me in my class.

Meaningfulness

7. The teacher applies the lessons to practical experiences.
10. My teacher makes connections between the course material and society.
13. In my class, my teacher relates current issues to the material we are learning.
24. In my class, I explore real issues that affect the world around me.
29. I can relate the material discussed in my class to my daily life.

Academic self-efficacy

2. I am good at helping other kids understand concepts.
14. I am good at connecting material from this class with the real world.
21. I am good at answering questions in this class.
23. It is pretty easy for me to earn good grades.
28. I am good at taking tests in this class.
30. I can easily understand assignments for this class.
32. I can usually discover interesting things to learn about in this class
34. I can express my opinions clearly in this class.

Attribution

35. Good grades are mainly the result of my hard work.
36. Good grades are mainly the result of my ability.
37. I can improve my intelligence by working hard.
38. I plan to go to college.

Appeal: Items 3, 9, 19, 20, 25, 26, 31

Challenge: Items 4, 8, 11, 15, 18, 27, 33

Choice: Items 1, 5, 6, 12, 16, 17, 22

Meaningfulness: Items 7, 10, 13, 24, 29

Academic self-efficacy: Items 2, 14, 21, 23, 28, 30, 32, 34

Attribution items probing future goals: Items 35, 36, 37, 38

Scoring:

Compute mean sub-scale scores for each/any of the five subscales.

APPENDIX E. THE SOCIAL CONNECTEDNESS SCALE (SCS; ROBBINS & LEE, 1995)

The following statements describe a large number of common situations. There are no 'right' or 'wrong' answers; the best answer is the immediate, spontaneous one. Read carefully each phrase and mark the answer that reflects your first reaction.

Answer scale:

1	2	3	4	5	6
Strongly agree					Strongly disagree

1. I feel disconnected from the world around me.
2. Even around people I know, I don't feel that I really belong.
3. I feel so distant from people.
4. I have no sense of togetherness with my peers.
5. I don't feel related to anyone.
6. I catch myself losing all sense of connectedness with society.
7. Even among my friends, there is no sense of brother/sisterhood.
8. I don't feel I participate with anyone or any group.

Scoring:

Compute a total score for 8 items.

APPENDIX F. REYNOLD'S SHORT FORM C OF THE MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE (MCSDS-C; REYNOLDS, 1982)

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

- 3. It is sometimes hard for me to go on with my work if I am not encouraged.
- 6. I sometimes feel resentful when I don't get my way.
- 10. On a few occasions, I have given up doing something because I thought too little of my ability.
- 12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
- 13. No matter who I'm talking to, I'm always a good listener.
- 15. There have been occasions when I took advantage of someone.
- 16. I'm always willing to admit it when I make a mistake.
- 19. I sometimes try to get even rather than forgive and forget.
- 21. I am always courteous, even to people who are disagreeable.
- 26. I have never been irked when people expressed ideas very different from my own.
- 28. There have been times when I was quite jealous of the good fortune of others.
- 30. I am sometimes irritated by people who ask favors of me.
- 33. I have never deliberately said something that hurt someone's feelings.

Item numbers correspond to the original numbers in the full, 33-item Marlowe-Crowne Scale (Crowne & Marlowe, 1960).

Scoring:

Each of the items is scored based on whether the respondent chose a socially desirable trait or not.

Items 13, 16, 21, 26, 33 are keyed true.

Items 3, 6, 10, 12, 15, 19, 28, 30 keyed false.

APPENDIX G. ADHERENCE SURVEY

1. On how many days did you practice meditation at home after the last session?
0 (Not at all) to 7 (Completed every day)
2. On a scale of 0 to 10, zero indicating “not at all” and 10 indicating “completed fully,”
how much of the second home practice task (i.e., name of the task) did you complete?
0 (Not at all) to 7 (Completed fully)
3. Did you complete a journal entry for the session?
__ Yes __ No

APPENDIX H. STUDENT INTERVIEW PROTOCOL

1. How would you rate this program overall? on a 5-point scale ranging from 1 (poor) to 5 (excellent)? Explain your rating by giving examples.

2. Please tell me about your experiences in this program.

Probes: Please describe your experience. How did you feel about being in the program at the beginning of it? In the end?

3. Please tell me about your teacher. How would you describe your teacher?

Probes: What did she/he do when your class had a discussion? When nobody said anything? When someone dominated the conversation? When someone shared something unique? When someone shared something personal?

4. How would you describe the other students in your class who were in this program?

5. How would you describe your participation in this program?

Probes: How was your classroom participation? Tell me about the home practice tasks? There were three weekly tasks: daily meditation, home activities, and journal entries. How many times did you meditate at home? How many activities did you complete? How many journal entries did you write? What was the experience of home practice tasks?

6. How did your experiences in the program influence how you related to other people outside of the program?

Probes: (e.g., during lunchtime, after-school activities, at home, in the family)?

7. What is your opinion about the topics discussed in the program?

Probe: How much do they seem to connect (how relevant) to your life?

8. What was a moment in this program you will probably remember for a long time?

Probe: Why?

9. What did you like the least about the program?

Probes: What about X did you like the least? What could your teacher have done to make it better?

10. If anything, what did you learn in this program?

Probes: If at all, how might you apply what you learned and experienced to your life? At home? At school? In the future?

11. If you changed, what changes did you notice during or after you participated in the program?
12. What do you recommend we change about the program next year?

Probes: Duration? Specific topics? Assessment? Home practice tasks?

APPENDIX I. TEACHER INTERVIEW PROTOCOL

1. How would you rate this program overall on a 5-point scale ranging from 1 (poor) to 5 (excellent)? Explain your rating by giving examples.

- a. How would your students rate this program on the same scale? Why?

2. Please tell me about your experiences in the intervention.

Probes: Please describe your experience. How did you feel about being in the intervention at the beginning of it? In the end?

3. To what extent did you feel included in designing the program?

- a. To what extent were your ideas respected or considered while designing the program?

4. How would you describe the students in your class who were in this intervention?

Probe: Can you describe their overall enthusiasm, participation, presence, or engagement in the class?

5. If at all, how did your experiences in the intervention influence your interactions with others around you, in general?

Probes: interactions with strangers, colleagues, other students, etc.

6. What is your opinion about the topics discussed in the intervention?

Probe: How much do they seem to connect (how relevant) to your students' and your life?

- a. How age-appropriate were the topics for adolescents/your group?

7. What is your opinion about the home practice tasks included in the intervention?

8. What was a moment in your intervention you will probably remember for a long time?

Probe: Why?

9. What did you like the least about the intervention?

Probes: What about X did you like the least? What could have been done to make it better?

10. If any, what is the value of this intervention for the students you teach?

Probes: What short-term and long-term benefits do you see for students?

11. If anything, what did you learn in this intervention?

Probes: If at all, how might you apply what you have learned and experienced in your life? At home? At school? In the future?

12. If you changed, what changes did you notice during or after you participated in the intervention?

13. What do you recommend we change about the intervention next year?

Probes: Duration? Specific topics? Assessment? Home practice tasks?

APPENDIX J. A SAMPLE LESSON PLAN

Lesson 1: The Rainbow In My Mind (Understanding Emotions)

Key Objectives

1. To understand how to identify five core emotions
2. To understand the links between trigger, emotion, and action/behavior
3. To understand how all human beings are connected by emotions
4. To realize how emotional regulation can lead to better behavior

Part 1: Induction (Small Talk)

Time: 7 minutes (before the actual session begins)

Log in to the meeting. Admit students to the meeting. Greet students. Settle students down. Start recording the meeting if applicable. Illustrative prompts for small talk are as follows.

- *How was your day/week?*
- *How are you doing today?*
- *Did you see/hear about <x> in the news?*
- *What was the highlight of your day/week?*

Opening remarks:

Teacher: *In the last session, you all filled out a survey. You might be aware that we are going to conduct the session in two small groups. Your group will meet with me for the next three-four months. Every week, we will discuss a new topic and participate in various activities in class and at home. I hope you will enjoy the sessions a lot and participate enthusiastically.*

You can speak or write in English or Marathi, whatever is convenient for you. If possible, keep your cameras on. Also, to avoid any chaos, please do not speak when someone else is speaking. Let's take turns while speaking.

We will be recording the session for later purposes. If you have any questions, please feel free to ask me at any point. You can use the chatbox or your mic.

We think these sessions will help you a lot in becoming a better person. Are you excited about today's session? Shall we get started? (pause). We will begin with a brief meditation exercise.

Part 2: Recapitulation

Time: Not applicable for this lesson

Part 3: Meditation

Time: 5 minutes

Conduct guided meditation using the following instructions. Use a low tone as you speak. Speak gently and slowly. Take brief pauses as you conduct the activity.

Teacher: *During this exercise, you will focus your attention on your breathing. This will calm your mind down.*

1. *Keep all your belongings aside [Pause].*
2. *Sit in a comfortable position. If you are sitting on a chair, see that your feet touch the ground gently [Pause].*
3. *If you are wearing glasses, kindly take them off and keep them aside [Pause].*
4. *Close your eyes. Gently place your hands on your laps [Pause].*
5. *Take long slow deep breaths. Inhale fully and exhale fully [Pause for 2 breathing cycles].*
6. *Now bring your full attention to noticing your breaths [Pause].*
7. *If there are noises around you, notice them and then bring your attention back to your breaths [Pause].*
8. *Don't control your breathing in any way. Just breathe as you breathe normally [Pause].*
9. *When your attention wanders, just focus back again on your breathing [Pause].*
10. *Feel your chest and stomach gently rising and falling with each breath. [Pause].*
11. *Notice the calmness in your mind [Pause].*
12. *Now it is time to slowly come back to your senses [Pause].*
13. *Keeping your eyes closed, notice the sounds around you. Feel the floor beneath you [Pause].*
14. *Now gently rub your palms, and place them on your eyes [Pause].*
15. *Slowly open your eyes [Pause].*
16. *Think about your experience and give yourself a gentle smile [Pause].*
17. *We will begin the next activity in a moment, so get ready for it [End].*

Part 4: Topic Introduction (Set induction)

Time: 7 minutes

Description

Conduct the starter activity to introduce the lesson's main topic. For this, you will need the PowerPoint presentation (The rainbow in my mind). Open the slides in the presentation mode and share your screen. Present the first slide and use the prompts given in the presenter notes to open the discussion.

Teacher: (Slide 1)

1. *What do you think is happening? (Students respond: Two people are arguing.)*
2. *How do you know they are arguing/fighting? (Students respond: Eyebrows, body stance, gestures, expressions)*
3. *What must have led to this argument? (Students respond)*
4. *How can they avoid/resolve the argument? (Students respond)*

Use the student responses to summarize the discussion.

Teacher: *Great points. We will come back to them soon. Let's move on.*

Teacher: *Various things around us **trigger** our emotions. And then our **emotions** dictate our **actions**. We will learn about this process today.*

- **Resources and supply list**

PowerPoint Presentation - Rainbow in my mind (First slide)

- **Prerequisites**
None.

Part 5: Main Topic

Time: 30 minutes

- **Description**

Use the rest of the slides from the same presentation for the main activity. Present slide number 2 and move forward as instructed in the presenter notes. Describe five core emotions and explain the T-E-A cycle--trigger, emotion, and action. Also, explain how adding a pause (P) between E and A can change how we respond to situations. Stress T-E-P-A process. (Slides 2 to 10)

Teacher: (Slide 2) *We saw that if we want to diffuse or avoid a fight, we need to understand what the other person wants. We need to try to understand what the other person is feeling and why. We need to **FEEL** with the other person.*

Therefore, one of the most important things/skills in our daily lives is to understand emotions. There is a rainbow of emotions in all our minds, and that's the name of our lesson today.

The Rainbow in My Mind!

Teacher: (Slide 3) *1. This picture is from a very famous movie. Do you remember the movie's name? Yes, Inside Out!*

2. Can you identify the characters? They are different emotions. Type the names of the emotions from left to right in the chatbox.

Yes, from left to right, these are fear (भीती), anger (रग), joy (आनंद), sadness (दुःख), and disgust (कीळस).

Let's look at one emotion at a time (next slide).

Teacher: (Slide 4) *T -> Fear! म्हणजेच भीती. We all have many fears. All states of fear are triggered by **feeling a threat of harm**. Fear is important to our survival. If there is danger around us, we are programmed to run away. What are you afraid of? Type in the chatbox.*

E -> (Click) Fear has many shades. Nervousness and anxiety are less intense than panic and terror. Imagine exam anxiety versus watching a horror movie.

A -> When we feel fear, we react to it. Imagine a situation where your friend gets angry with you - you feel FEAR - and you start to imagine them leaving you.

And then you might feel worried about it. You might feel withdrawn from day-to-day activities. You might scream or yell at that friend or others. Or you might even freeze because of the fear.

Teacher: (Slide 5) *T -> Anger! म्हणजेच रग. We all get angry. All states of anger are triggered by a **feeling of being blocked** in our progress.*

E -> (Click) Anger has many shades. Getting annoyed and frustrated is less intense than feeling argumentative and furious.

A -> When we feel anger, we react to it. Imagine the same situation where your friend gets angry with you → this time you feel ANGER → and you argue.

You might insult them. You might scream at them. You might punch them. Or you might suppress/avoid your anger.

Anger is a destructive emotion; it can ruin relationships. But when we use anger constructively, it can be powerful. Can you think of an example where anger can be used constructively? Tell me in the chatbox.

(Example: When someone insults you, you try harder next time to show them your progress. Or when you see injustice and feel angry, you feel motivated to undo that injustice.)

Teacher: (Slide 6) T-> Joy! म्हणजेच आनंद. We all feel and want enjoyment. All states of enjoyment are triggered by feeling connection and/or sensory pleasure such as sitting under a fan when the climate is too hot.

E -> (Click) Joy has many shades. Pleasure and relief are less intense than peace and excitement.

A -> When we feel enjoyment, we might exclaim. We might jump, smile, or even laugh out loud. When joyful, we tend to engage with others and connect with others.

Joy is usually a constructive emotion; but if you enjoy making fun of someone, it can be a destructive emotion. Can you think of an example where joy can become destructive? Type in the chatbox.

(Example: when we enjoy someone's failure)

Teacher: (Slide 7) T -> Sadness! म्हणजेच दुःख. We all feel sadness quite many times. All states of sadness are triggered by a **feeling of loss**.

E -> (Click) Sadness also has many shades. Disappointment and discouragement are less intense than helplessness and sorrow.

A -> Imagine the same situation where your friend gets angry with you → this time you feel SADNESS → you be ashamed.

Or you might want to seek help, so you might call a friend/family member. If you are feeling miserable you might protest. You might mourn in response to the grief felt by you.

Teacher: (Slide 8) T -> Disgust! म्हणजेच कीळस. All states of disgust are triggered by the **feeling that something is toxic**.

E -> (Click) Disgust also has many shades. Dislike and aversion are less intense than hatred.

A -> Imagine the same situation where your friend gets angry with you → this time you feel DISGUST → you belittle them.

When you feel disgusted, you might vomit. You might avoid the situation. But it is not always possible to avoid people or situations we dislike. What do you do in such a situation? Tell me in the chatbox.

(Example: I try to understand why I dislike those people/situations; I try to adjust.)

Teacher: (Slide 9) *As we learned today, things around us trigger our emotions. And then our emotions dictate our actions.*

*Let's remember this process as **T-E-A**: First, there is a trigger. A **trigger** can be an event or a memory - This trigger moves something inside us. We call it **emotions**. We learned about five core emotions today. Each different emotion is related to peculiar physical and psychological changes - Finally, these emotions dictate our **actions** or behaviors.*

An interesting fact is that we CANNOT control our emotions. If something triggers anger in us, we cannot control that emotion of anger.

But the good news is that we can certainly control our response to emotions. That is, out of T-E-A, we can control our A or actions.

*That means, instead of giving a quick **reaction**, we can give a well-thought **response**.*

Our actions can be constructive/positive or destructive/negative. When we say constructive or destructive actions, just think if your action harms anyone including you or if those actions help yourself and others.

However, we need to take extra efforts to channel our emotions into constructive/positive actions.

Teacher: (Slide 10) *(click) There is a simple trick to channel our actions in a positive direction. (click) And that is to add a small P to our T-E-A!*

P stands for pause (click). How do you think a pause will help in managing our response to an emotion?

(Collect 1-2 responses)

(click) Now our T-E-A has become T-E-P-A -> Trigger, emotion, PAUSE, action!

Now on, can we try and pause for one second before we react with emotions? Do you think it is easy? No! But we can learn it with practice.

Let's do an activity to practice the T-E-P-A process. I will give you a situation, and we will discuss it as a class.

Teacher: (Slide 11) *Present the situation:*

Your parents promised to buy you a new bicycle but now they have decided not to.

Teacher: (Slide 12) *Ask the students to identify the trigger:*

*What is the **TRIGGER** in the situation?*

(Collect 3-4 responses and write in the bubble)

Teacher: (Slide 13) *Ask the students to identify the emotion:*

How do you feel in this situation?

(Collect 3-4 responses and write them in the bubble)

Teacher: (Slide 14) Ask the students to identify the causes behind the situation:
Why do you think your parents changed their decision?
(Collect 3-4 responses and write them in the bubble)

Teacher: (Slide 15) Ask the students to identify the action:
How will you respond to the situation?
(Collect 3-4 responses and write in the bubble)

How would your quick reactions be different from your thoughtful responses?
(Collect 1-2 responses.)

- **Resources and supply list**
PowerPoint Presentation - Rainbow in my mind (Slide number 2 onward)
- **Prerequisites**
None.

Part 6: Topic Closure

Time: 5 minutes

Conclude the lesson by summarizing the main points provided on slide 16.

Teacher: *Today we learned/discussed/talked about...*

- how to identify five universal emotions: fear, anger, joy, sadness, disgust
- the T-E-A process: Trigger-> Emotion -> Action
- triggers arouse emotions, and emotions lead to actions
- the T-E-P-A Process: Trigger-> Emotion -> **PAUSE** -> Action

Part 7: Home Practice

Time: 10 minutes

Explain the three home practice tasks as follow.

1. Meditation

One common home practice activity for all sessions is the meditation exercise. Students are expected to practice the meditation conducted in this session at home for about 5 minutes every day till the next session. Remind students to record daily if they practiced meditation or not. Tell students they will fill out a Google form at the beginning of the next session to report the home practice.

2. Quiz

Ask students to take the emotional intelligence quiz at home.

Teacher: *Go to the given link and read the instructions carefully. This quiz tests your emotional intelligence interestingly. Click on the link and take the quiz. It will not take more than 15 to 20 minutes.*

Link: https://greatergood.berkeley.edu/quizzes/ei_quiz

3. Journal entry

Students are expected to write a brief journal entry once every week. Remind students to write the journal entry for the week. Consider the following prompts.

- What did you learn in the session this week?
- How was your experience?
- What stayed with you after the session?
- Reflect on your thoughts and feelings about the things you learned in this week's session.
- Is there some feedback you would like to convey to me (i.e., the teacher) about the session?

4. Ask if there are any questions about the home practice. Respond to the queries.

• Resources (to be sent later)

Go to the below link and explore emotions (Anger, Fear, Disgust, Sadness, Joy) based on criteria 1. Timeline 2. Experience 3. Response 4. Strategies

<http://atlasofemotions.org/>

Part 8: Humor of the Lesson

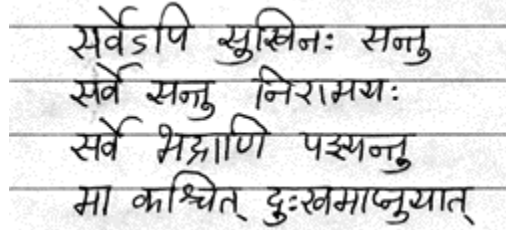
Time: 1 minute

Conclude the session on a light note with the cartoon strip on slide 18.

Part 9: Prayer

Time: 3 minutes

Close the session with the wellness prayer. Explain the meaning in the first two sessions.



ॐ शान्तिः शान्तिः शान्तिः॥

Meaning:

Let all be happy.

Let all be blessed with well-being.

Let all see or witness only good things.

Let no one beget unhappiness (in life).

Part 10: Session Closure

Time: 2 minutes

Share reminders if any. Tell students we will meet again next week. Wave them off. Let students leave the meeting. Wait till everyone has left the meeting. Close the meeting.

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