

1 Influencing Proactive and Reactive Aggression:

2 C-SELF The social-emotional learning fortification for children and youth program in public primary
3 schools in Antigua and Barbuda.

4
5 **Nicola Bird, PhD¹, Sara Makki Alamdari, PhD², Leslie Walwyn, MBBS, MPH³, Alaina Gomes,
6 MSc¹, Carolyn Gentle-Genitty, PhD^{4*}**

7 ¹Integrated Health Outreach, St. John's, Antigua and Barbuda

8 ² Department of Social Work, West Texas A&M University, Canyon, TX, USA

9 ³ Department of Clinical Medicine, College of Medicine, American University of Antigua, St. John's,
10 Antigua and Barbuda.

11 ⁴ Department of Social Work, Indiana University , Indianapolis, IN, USA

12
13 * Correspondence:

14 Carolyn Gentle-Genitty, PhD

15 cgentleg@iu.edu

16
17 Keywords: Socio-emotional learning ¹, C-SELF ², Antigua and Barbuda³, Aggression ⁴, Self-
18 regulation⁵. (Min.5-Max. 8)

19 **Abstract**

20 There are no structured programs to respond to youth violence and the social, emotional, and
21 behavioral well-being amongst students in the Caribbean. There has been little data collected and
22 organized research conducted on the efficacy and impact of programs, which may combat youth
23 violence and improve social, emotional, and behavioral health (UNDP, 2012; Maharaj et al., 2009;
24 World Bank, 2007). Without rigorous impact evaluations, the region continues to lack effective and
25 sustaining strategies for preventive programs. Because empirical data mostly comes from studies
26 done in high-income countries, their adaptability is at question for the low- and middle-income Latin
27 America and Caribbean (LAC) region as the causes of violence and mental health well-being may be

29 This manuscript shares outcomes from the implementation of the Children and Youth Social-
30 Emotional Learning Fortification (C-SELF) social-emotional health strategy embedded into the
31 curriculum in five schools in Antigua and Barbuda. In 2020, using data from 2017 to 2018, a mixed
32 method study was conducted with 482 (intervention) and 152 (control) primary school students. Data
33 was analyzed for the influence of the intervention on 16 factors. The findings suggest positive
34 outcomes, without significance, in decreased depression, anxiety, self-control, and competence.

This is the authors' manuscript of the work published in final form as:

Bird, N., Makki Alamdari, S., Walwyn, L., Gomes, A., & Gentle-Genitty, C. (2020). Influencing proactive and reactive aggression: C-SELF The socio-emotional learning fortification program in Antigua and Barbuda. *Journal of Global Engagement and Transformation*, 4(1). <https://everypiecematters.com/jget/volume04-issue01/the-dynamics-of-gender-roles-and-cultural-determinants-of-african-womens-desire-to-participate-in-modern-politics-2.html>

35 Significance was found only when self-reported aggression was compared to teacher reactive-
 36 aggression perception of student behavior. The findings suggest students' behaviors, with teachers or
 37 in the classroom, are linked to being teased or being aggravated in other parts of the school
 38 environment. This new data, though known anecdotally, offers insight into how we capture and
 39 deploy effective resources. It demonstrates the importance of socio-emotional learning curriculum
 40 changes to increase children's mastery of self-regulated behaviors, decision-making, self-
 41 management, and self-leadership skills. More longitudinal studies in the future are needed especially
 42 to study where socio-emotional learning strategies help to reduce aggression, particularly those
 43 which may lead to violent behaviors in the LAC region.

44 **1 Introduction**

45 There is a spotlight on socio-emotional health. A pandemic has increased the call for such teaching
 46 and learning strategies in responding to students. Most programs aim to help schools and students
 47 self-regulate behaviors, make decisions, self-manage, and increase leadership skills. We examine,
 48 herein, the effects of the Children and Youth Social-Emotional Learning Fortification (C-SELF)
 49 program in public primary schools in Antigua and Barbuda. Currently, there are no structured
 50 programs to respond to youth violence and the social, emotional, and behavioral well-being amongst
 51 students in the Caribbean. There has been little data collected and organized research conducted on
 52 the efficacy and impact of programs, which may combat youth violence and improve social,
 53 emotional, and behavioral health (UNDP, 2012; Maharaj et al., 2009; World Bank, 2007). Without
 54 rigorous impact evaluations, the region continues to lack effective and sustaining strategies for
 55 preventive programs. Because empirical data mostly comes from studies done in high-income
 56 countries, their adaptability is at question for the low- and middle-income Latin America and
 57 Caribbean (LAC) region as the causes of violence and mental health well-being may be specific to
 58 the region (Campie et al., 2019; Williams, 2013).

59 This manuscript shares outcomes from the implementation of the C-SELF social-emotional health
 60 strategy embedded into the curriculum in five schools in Antigua and Barbuda. In 2020, using data
 61 from 2017 to 2018, a mixed method study was conducted with 482 (intervention) and 152 (control)
 62 primary school students. Data was analyzed for the influence of the intervention on 16 factors. The
 63 findings suggest positive outcomes, without significance, in decreased depression, anxiety, self-
 64 control, and competence. Significance was found only when self-reported aggression was compared
 65 to teacher reactive-aggression perception of student behavior. The findings suggest students'
 66 behaviors, with teachers or in the classroom, are linked to being teased or being aggravated in other
 67 parts of the school environment. This new data, though known anecdotally, offers insight into how
 68 we capture and deploy effective resources. It demonstrates the importance of socio-emotional
 69 learning curriculum changes to increase children's mastery of self-regulated behaviors, decision-
 70 making, self-management, and self-leadership skills. More longitudinal studies in the future is
 71 needed specially to study where socio-emotional learning strategies help to reduce aggression
 72 particularly those which may lead to violent behaviors in the LAC region.

73 **1.1 Materials and Methods**

74 **Review of the Literature**

75 The Caribbean is negatively impacted by rising crime and violence. Based on homicide rates, the
 76 region is the most violent in the world (Inter-American Development Bank, 2017). There were three
 77 times more murders in Antigua in 2014 than there were in 2000. Robberies rose by 65% from 2013
 78 to 2014 (Overseas Security Advisory Council, 2015). There has also been an explosion of youth

79 violence in the region. It is the leading cause of the death of young men in the Caribbean between the
80 ages of 15 and 24 (World Bank, 2007). Additionally, violence against women in general is higher
81 with female youth in the Caribbean, disproportionately victimized by violence (Pan American Health
82 Organization, 2012). Caribbean countries account for three out of the top ten recorded rates of global
83 rapes (World Bank, 2007). While the region demonstrates violence and crime patterns comparable to
84 countries with similar macro- and socio-economic status and demographics, it displays a
85 disproportionately high rate of crime that poverty and social factors do not solely explain.

86 Violence and crime are developmental, economic, and public health concerns that are arguably the
87 number one social problem for this region (Inter-American Development Bank, 2017; World Bank,
88 2007). A weak system of education and poor academic outcomes, especially for those in the lower
89 socioeconomic strata (Matthews, 2013), are factors that are shown to increase the rate of violence and
90 compromise psychosocial development. Eastern Caribbean youth are graduating with inadequate
91 education that leaves them economically vulnerable and more inclined to turn to crime and violence
92 (UNDP Subregional Office for Barbados and the OECS, 2011).

93 The Caribbean is also fraught with mental healthcare concerns. Studies done in the Caribbean
94 indicate a significant number of youth (persons under the age of 29) suffer from moderate to high
95 levels of depressive symptoms (Lipps et al., 2012; Maharaj et al., 2009). Mild to severe symptoms
96 were reported by more than 50 percent of all adolescents (Lipps et al., 2012; Samms-Vaughan et al.,
97 2005) 29.1% reported moderate to severe levels (Lipps et al., 2012). Antigua and Barbuda showed
98 that 12.6% of males and 22.5% of females between the ages of 13 and 15 had considered suicide and
99 9.3% of males and 15.7% of females had attempted suicide at least once (WHO School Based
100 Student Health Survey (GSHS), 2009).

101 When compared to North American and Europe studies, Caribbean adolescents appear to report a
102 higher rate of moderate to severe levels of depressive symptoms (Lipps et al., 2010). They cite
103 female headed households, poverty, and poor education as contributing factors unique to the region.
104 The WHO School Based Student Health Survey (GSHS) in the Eastern Caribbean, surveyed students
105 and reported a high rate of mental health challenges. Mental health is inadequately served, and
106 disorders often go unrecognized, undiagnosed, and untreated in the Caribbean. Left untreated, mental
107 health disorders have a corrosive effect on society contributing to such things as violence, shattered
108 families, decreased productivity, and increased economic cost.

109 **Schools as a Protective Factor against Violence and Aggression**

110 Youth violence, although alarming, is preventable. Schools serve as a distinctive point of access to
111 both prevent and reduce the rate of youth violence and crime for long-term social impact. Once the
112 behaviors are mitigated early, there are decreases in probability of later violence and crime (World
113 Bank Sustainable Development Department of Latin America and The Caribbean Region, 2011).
114 Evidence-based youth preventive care programs show early investment yield greater return and
115 decreases violence and other risk behaviors (e.g. substance abuse, unprotected sex, obesity) (Butts et
116 al., 2010; Schweinhart et al., 2005).

117 The power of schools to provide protective factors to mitigate violence through attendance and
118 connectedness factors has been shown. In fact, empirical research done in the Caribbean demonstrate
119 schools serving as the most effective place to aid in violence and risk behavior reduction especially in
120 alcohol and drug use, premature and unsafe sexual activity, and smoking (Blum, 2005; Blum et al.,
121 2003). Hahn and colleagues 2007 study revealed that 60 percent of boys and 55 percent of girls
122 reported feeling connected to schools and were less likely to engage in violent behaviors. Of

123 significance, the study found there were cumulative traits to risk and protective factors. That is, when
 124 one holds risk factors at a constant; then adds protective factors, there is a decreased rate of reported
 125 participation in violence. This is also true in the reverse: when protective factors are held at a
 126 constant and salient risks are incrementally added, risk behavior increases. Schools serving as a
 127 change agent also offers the unique advantage of reach: the population at large attends and can be
 128 impacted during the important formative years. This provides additional credence for using the
 129 school institution as a means for universal school-based violence prevention programs integrated into
 130 the curriculum (Hahn et al., 2007).

131 Rigorous studies highlight the value of a primary prevention measure for sustainability and long-term
 132 cost effectiveness when compared to other alternatives (Butts et al., 2010; Schweinhart et al., 2005).
 133 Empirical evidence shows school-based programs, at all grade levels, have a significant impact on
 134 decreasing youth violence. School-based interventions which start at an early age can shape students'
 135 healthy ways, perceptions, attitudes, and behaviors (Botvin et al., 2006; Hawkins, Catalano,
 136 Kosterman, Abbott, & Hill, 1999). This is particularly important as studies show that without
 137 intervention, aggressive behaviors are more likely to manifest later and present as violence and social
 138 dysfunction.

139 Shaping healthy patterns of behavior is easier to implement and cost effective in the long-term verses
 140 restructuring ingrained mindsets and behaviors (Heckman, 2007). The earlier the onset of
 141 intervention, the greater the return on investment and the greater the cost effectiveness. For instance,
 142 the cost-benefit analyses of the Seattle Social Development Project in elementary schools, which
 143 showed a reduction of delinquency six years post intervention, suggested there was a \$3.14 benefit
 144 for each invested dollar (Botvin et al., 2006). Furthermore, high-quality programs have shown these
 145 effects can be sustained well into adulthood and have positive impacts on a range of health-risk
 146 behaviors, such as substance use and unsafe sexual behavior (Barnett, 1993). Analyses of evidence-
 147 based programs show that violent behaviors can be reduced across all school years by 15 percent and
 148 29 percent for secondary students (Hahn et al, 2007).

149 **Schools as a Protective Factor against Depression and Anxiety**

150 Preventive school-based interventions on depression and anxiety are shown to be effective at
 151 preventing or reducing depressive and anxiety symptoms, 65 percent and 73 percent respectively
 152 (Corrieri et al., 2013) as well as improve executive functioning and cognitive and academic
 153 functioning (Flook et al., 2010; Napoli et al., 2005). Meta-analysis of social-emotional programs
 154 showed that said initiatives can improve learning outcomes between 11 and 17 percent (Payton et al.,
 155 2008). Mindfulness programs have also been shown to aid in stress reduction, effective coping skills,
 156 and improved wellbeing for the development of healthier teachers and connectedness with students
 157 (Roeser et al., 2013; Taylor et al., 2015). Evidence-based youth prevention programs show that
 158 early investment into individual's social, mental, and behavioral health is cost effective. Assimilating
 159 social-emotional health into the school curriculum cultivates life-long competencies and psychosocial
 160 skills. It improves learning outcomes and resiliency and enhances health, social, and economic
 161 wellbeing.

162 **Statement of the Problem**

163 Structured programs to respond to the concerns of youth violence and the social, emotional, and
 164 behavioral wellbeing is non-existent in the Caribbean. There has been little data collected and
 165 organized research to improve social, emotional, and behavioral health (UNDP, 2012; World Bank,
 166 2007). Because high-income countries are the primary producers of knowledge in this area lacking

167 cultural relevance, there is need for more LAC regional studies and evaluation on programs defined
168 for violence and socio-emotional and mental health wellbeing (Campie et al., 2019; Razzouk et al.,
169 2008; Wirtz et al., 2016).

170 **Study AIM and research questions**

171 The study goal is to assess the outcomes associated with the implementation of the C-SELF social-
172 emotional health strategy in the Antigua and Barbuda school curriculum. The program serves as a
173 resource for teachers, school administrators, government, and community stakeholders in the region.
174 To respond to the study goal, permission was sought and granted from the Antigua and Barbuda
175 Ministry of Education for implementation in several schools. Students were assessed using formal
176 measures of social-emotional competencies on five factors, namely persistence, self-control, social
177 competence, proactive aggression, and reactive aggression.

178 There were two research questions governing the study.

179 **Research Questions**

- 180 1. Can the C-SELF Programme improve children’s social-emotional competencies and
181 maladaptive behaviour? If so, how effective is it?
- 182 2. Is there a significant difference in social-emotional competencies when the students are
183 grouped by gender?

184 **Hypothesis**

185 The investigation’s research hypothesis was the C-SELF would be able to:

- 186 1. Increase students’ ability to regulate their emotions,
- 187 2. Decrease proactive and reactive aggression,
- 188 3. Promote social competencies (e.g. persistence and social competence).

189 **Methodology**

190 The methodology details the research participants, intervention program, research design, sampling
191 techniques used in the collection of data, data collection procedures, and instrumentation. It also
192 presents the legal and ethical considerations.

193 **Intervention Program**

194 The C-SELF Program is a simple-to-administer social, emotional, and behavioral school-based
195 program. There are ten (10) learning modules (see Table 1) administered over a ten-week period once
196 per week for approximately 25-minutes. During the intervention sessions, the entire class engages in
197 a structured three-to-five-minute daily C-SELF exercise. This is practiced at the beginning of the day
198 and after lunchtime consisting of mindfulness breathing, positive emotional focusing, self-regulation,
199 impulse control, goal-orientation, self- and other-compassion.

200 **(INSERT TABLE 1 HERE)**

201 Teachers integrated the C-SELF skills into their daily curriculum and supported and encouraged the
202 children’s practice. The curriculum assimilation helped the children internalize the skills and created
203 a more harmonious classroom environment.

204 **Implementation of the Intervention Program**

205 Five schools ($n = 621$) of primary public-school children in Antigua and Barbuda from grades 3 to 6
 206 aged six to thirteen participated in the intervention program. Grades 2 and below received 2-3-weeks
 207 intervention. Class size varied per class and school ($n = 10$ to 30 per class). In Antigua and Barbuda,
 208 there are 29 public primary schools with a student body of 4,795. There are four primary school
 209 zones. At least one school was chosen from each zone equivalent on school size, achievement level,
 210 and socioeconomic status by the Antigua and Barbuda Ministry of Education, Science and
 211 Technology. The research protocol was described to the five principals. All classes intervention
 212 classes, grades 3 to 6, from all five schools, participated.

213 These schools received training and instruction on implementing C-SELF strategies. This comprised
 214 of teachers and students from the five public primary schools in Zones 1 to 4 respectively in Antigua
 215 and Barbuda. Teachers received one two-hour training seminar pre-intervention. The teachers and
 216 students received 25-minutes of instruction during class time for ten-weeks. The teachers maintained
 217 the C-SELF strategies daily as part of their curriculum for one academic school year. There was
 218 weekly monitoring of programme fidelity. Support was provided by the researchers for the duration
 219 of the one-academic year. Families were also invited to training programmes offered through the
 220 schools on C-SELF-techniques.

221 **Research Design**

222 The major aim of the study was to assess the impact of the intervention by: (1) pre- and post-surveys
 223 to measure the changes before and after the intervention, (2) comparing the changes when the
 224 students are grouped by gender. Pre-post study design was used in this research. This design is not
 225 very strong in determining causal relationships between the dependent and independent variables;
 226 however, the study increased validity and effectiveness by using pre- and post-testing where tests are
 227 conducted prior to intervention to determine confounders. A survey administered by teachers was
 228 used in this study. Teachers observed and rated students' social-emotional competencies and
 229 aggression based on their perception.

230 **Participants and Procedures**

231 For the purpose of this study, only School 2 and School 5 were selected. From School 2, 62 students
 232 and from School 5, 219 students participated in the intervention. Nine teachers from these two
 233 schools participated in rating students' behavior once before the implementation of the intervention
 234 in 2017 and once one week after the termination of the intervention in 2018 using a paper-based
 235 survey. On average, one teacher was responsible for rating, approximately 31 (31.2 rounded)
 236 students, since the total for both schools was 281, and the total teachers were 9. For comparison
 237 between pre- and post-tests, each student had a de-identifiable numerical code that only the
 238 researchers and teachers were aware of. The de-identifiable numerical code was done based on the
 239 order of data entry per school. After rating students, teachers kept the completed surveys in a locker
 240 until the research team received them. The researchers entered data in a SPSS file using double data
 241 entry (Day, Fayers, & Harvey, 1998).

242 The researchers got an Institutional Review Board approval. Prior to commencing any data
 243 collection, informed consent was obtained from all participating teachers and pupils' parents. No
 244 reference to individuals was made within the final report. All data was stored and secured. No
 245 perceived harm, risk, or possible hurt was anticipated from this proposed intervention program. The
 246 study was expected to enrich the curriculum in the participating school.

247 **Measures**

248 Two scales were used for teacher surveys. The first one was Tauck Family Foundation Formative
 249 Assessment Tool (2014), which is to measure teacher rated persistence (3 items), self-control (3
 250 items), and social competence (6 items) skills in children aged 8 to 12. Example items from
 251 persistence, self-control, and social competence sub-scales are “worked on tasks until they were
 252 finished”, “waited in line patiently”, “worked well with peers”, respectively. Teachers were asked to
 253 rate students’ behavior in the last quarter or since the last reporting time using a 4-point Likert scale
 254 ranged from “none of the time” to “all of the time”. Cronbach’s alpha for teacher survey in the
 255 previous literature was reported as: persistence $\alpha = 0.92$; social competence $\alpha = 0.97$; self-control α
 256 $= 0.82$ (Child Trends, 2014). The current study also found strong Cronbach’s alpha for these three
 257 sub-scales at both pre- and post-tests: persistence (pre- and post-test) $\alpha = 0.93$; social competence
 258 pre-test $\alpha = 0.94$ and post-test $\alpha = 0.96$; self-control pre-test $\alpha = 0.93$ and post-test $\alpha = 0.95$.

259 Second scale was Reactive/Proactive Aggression—FastTrack (Teacher Checklist), which is to
 260 measure teachers’ perceptions of children aged 4-18 in terms of proactive and reactive aggressive
 261 behavior. The measure has two subscales: reactive aggressive behavior (3 items) and proactive
 262 aggressive behavior (3 items). “When this child has been teased or threatened, he or she gets angry
 263 easily and strikes back” is an example item of proactive aggression. One example of reactive
 264 aggression I “this child threatens or bullies others in order to get his or her own way”. Teachers were
 265 asked to indicate how often each child exhibits certain aggressive behaviors using a 5-point Likert
 266 scale with the options of “never true” to “almost always true”. In the previous literature, strong
 267 internal consistency was reported: for reactive aggression, Cronbach’s alpha of 0.94 and for proactive
 268 aggression, Cronbach’s alpha of .90 were found (Dodge & Coie, 1987). Pre- and post-tests in the
 269 current study also confirmed high reliability of these two subscales: reactive aggression pre-test $\alpha =$
 270 0.93 and post-test $\alpha = 0.94$; proactive aggression pre-test $\alpha = 0.91$ and post-test $\alpha = 0.92$.

271 Demographic information was also asked using a few questions at the beginning of the survey.
 272 Gender was asked a question with two options of male and female. The researchers used an open-
 273 ended question to measure age. Class level was asked using a closed-ended question with six options
 274 ranged from Grade 3 to Grade 6.

275 **Data Analysis**

276 For the analysis, descriptive statistics were provided for the study’s key variables. A series of paired
 277 sample t-tests were conducted to examine changes in the five domains between pre- and post-tests in
 278 total and for each school, as well as for each gender group. Before running a t-test analysis,
 279 assumptions were investigated.

280 **1.1.1 Results**

281 **Participants**

282 Of 281 students participating in the intervention, teachers rated 221 (78.6%) students for a pre-test,
 283 post-test, or both without missing data. The majority (86.43%) were from School 5. Students were in
 284 Grades 3 to 6. The majority were male (61.2%). Students were between 7 and 13 years-old with the
 285 mean age of 10.14 (see Table 2).

286 **(INSERT TABLE 2 HERE)**

287

288 **Key Variables**

289 Teachers rated the students in 5 domains of persistence, self-control, social competence, reactive
 290 aggression, and proactive aggression before and after the intervention. Table 3 indicates descriptive
 291 information of these five domains for both pre- and post-tests, as well as for each school and in total
 292 for both schools. With potential response range between 1 and 4, in pre-test, the mean score of
 293 persistence, self-control, and social competence for both schools were reported 2.63, 2.74, and 2.73,
 294 respectively. In post-test, the mean score of persistence, self-control, and social competence was
 295 found 2.78, 2.92, and 2.84, respectively. Reactive and proactive aggression had the potential response
 296 range of 1 to 4. In the pre-test, reactive aggression of 1.97 and proactive aggression of 1.26 were
 297 reported for both schools. In the post-test, reactive aggression and proactive aggression were found
 298 1.87 and 1.34, respectively.

299 **(INSERT TABLE 3 HERE)**

300

301 **T-Test Analysis**

302 The researchers conducted two sets of t-test analysis. First, to examine differences between pre- and
 303 post-test in the 5 domains of study, a t-test was run for each school and for both schools together.
 304 Table 4 shows the results for each school and each domain as well as for all schools. In School 2,
 305 reactive aggression is decreased significantly post-intervention. The researchers found significant
 306 improvement in domains of persistence, self-control, as well as social competence in School 5;
 307 however, proactive aggression has increased after the intervention. Looking at the data in total, the
 308 researchers found significant increase in persistence and self-control, as well as in proactive
 309 aggression.

310 **(INSERT TABLE 4 HERE)**

311 Further, a t-test was run to examine differences between pre- and post-test for each gender category.
 312 Table 5 presents results of this analysis. Both males and females experienced significant
 313 improvement in self-control post intervention. Although female students indicated significant
 314 decrease in reactive aggression, boys showed significant increment in proactive aggression.

315 **(INSERT TABLE 5 HERE)**

316 Before running the t-tests, assumptions were inspected. Dependent variables were measured at the
 317 continuous level. No significant outliers were detected. According to skewness and kurtosis values,
 318 dependent variable in four domains of persistence, self-control, social competence, and reactive
 319 aggression were normally distributed. Proactive aggression domain had not a normal distribution;
 320 however, the researchers proceeded the analysis as t-test is robust to violation of this assumption.

321 **1.1.1.1 Discussion**

322 Schools are instrumental in helping to shape students' self-regulation, self-esteem, and self-efficacy.
 323 Their impact is wide-ranging as their influence on cognitive and social development is long-term.
 324 School children and adolescents in public schools in the Caribbean spend a large portion of their day
 325 (minimum six hours) and year (September to June) at school. The traditional model of schools
 326 reduced its role to that of an academic institution. However, school provides the greatest access to
 327 large numbers of children and adolescents to help shape their minds, emotions, and behaviors. Social,
 328 emotional, and behavioral health and learning integration increases the probability for improved

329 academic outcomes, fosters positive social-emotional development, and teaches life-long learning
 330 skills, and strengthens mental and emotional fitness in every student. The comprehensive strategy
 331 targeted at changing cultural and behavioral patterns that promote a violent reaction to conflict can be
 332 reduced through C-SELF integration into the daily school curriculum.

333 The impact of social-emotional learning is far reaching and sustainable. These are life-long
 334 proficiencies that foster both personal and social wellbeing, reducing the long-term costs to society,
 335 the environment, and governments over time. Social-emotional and non-cognitive skills are highly
 336 malleable for enduring results (Jones, Greenberg, & Crowley, 2015; Moffitt et al., 2011). Research
 337 has shown that the development of non-cognitive skills such as self-control “might reduce a panoply
 338 of societal costs, save taxpayers money, and promote prosperity” (Moffitt et al., 2011).

339 **Ethical Considerations**

340 Prior to commencing any data collection, informed consent was obtained from all participating
 341 teachers and pupils’ parents. No reference to individuals was made within the final report. All data
 342 was stored and secured. No perceived harm, risk, or possible hurt was anticipated from the proposed
 343 intervention program. The study was anticipated to enrich the curriculum in the participating school.

344 **Limitations**

345 Not having meaningful results in student surveys might be attributed to students' lack of familiarity
 346 with how to respond to surveys in Antigua and Barbuda. One of the key limitations for the study was
 347 the academic developmental level of the students in each school. It was quickly realized that some of
 348 the students in Grades 3 and 4 had difficulty doing the surveys on their own. In some schools, most
 349 of the students in Grades 3 and 4 needed the questions to be read out loud and in some cases
 350 explained. This could indicate that students might not be performing at the expected levels, which
 351 could be caused by numerous factors, or the assessment tool might have been difficult for them to
 352 understand possibly due to verbiage and cultural reasons, rather than limited cognitive capacities.

353 **Recommendations for Future**

354 For school-aged children and adolescents, school experience is an important part of their entire
 355 development and lays the groundwork for them to succeed (Morrison, LeBlanc, & Doucet, 2005). Of
 356 importance is the idea of fostering social, emotional, and behavioral learning such as self-efficacy
 357 and self-regulation. These are, in fact, a principal factor in determining success (Harris, Graham,
 358 Mason, & Sadler, 2002). They help to drive student motivation and engagement to attain positive
 359 learning outcomes. However, most students fall short in self-regulatory abilities and need to be taught
 360 self-efficacy strategies (Zumbrunn, Tadlock, & Danielle Roberts, 2011). Graham and Harris (2000)
 361 showed that even small amounts of time devoted to self-regulation strategies can improve learning
 362 outcomes.

363 **Social, emotional, and behavioural health and curriculum**

- 364 1. Integrating social, emotional, and behavioral health into the school curriculum is a preventive
 365 measure that teaches students healthy coping styles that diminish the chance of developing
 366 problems, prevents violence and risk behaviors, and increases academic achievement. The
 367 benefits of C-SELF into the school curriculum are multifaceted:
- 368 2. Improved academic performance: Mentally healthy students learn better (Greenberg et al.,
 369 2003; Durlak & Wells, 1997). Social and emotional learning (SEL) programs are shown to
 370 improve academic performance by between 11 to 17 percentage points (Payton et al., 2008),
- 371 3. Self-esteem improves academic outcomes (Colquhoun & Bourne, 2012),

- 372 4. Mentally healthy children are less likely to engage in problem behaviours, such as violence,
 373 delinquency, substance abuse, and risky sexual behaviours. School-based prevention
 374 programs have been shown to reduce the incidence of problem behaviors (Battistich, et al.,
 375 2004; Beets et al., 2009),
- 376 5. Students who can manage their emotions can more effectively focus on learning, as anxiety
 377 reduces the working memory that is necessary for most learning (Evans & Schamberg, 2009),
- 378 6. Children's psychosocial challenges often manifest as a decrease in performance in schools
 379 (Atkins, et al., 2002). Mentally healthy students show enhanced psychosocial capabilities,
 380 such as self-confidence, self-esteem, and communication (Flook, Goldberg, Pinger, &
 381 Davidson, 2015),
- 382 7. Social and emotional competency positively impacts long-term behaviour, social interactions,
 383 and learning outcomes even when other variables—such as socioeconomic status and
 384 academic aptitude—are factored out (Jones et al., 2015),
- 385 8. Social-emotional skills are the great equalizer. They can reduce the discrepancy in
 386 achievement across all socioeconomic platforms. They diminish the disparities that exist
 387 between the underprivileged, who show statistically poorer academic outcomes, and those
 388 who are socially advantaged (Diamond, 2010, 2013). Studies show that socio-economically
 389 disadvantaged children have weaker executive functions (e.g., impulse control, self-
 390 regulation, etc.) when compared to children from more privileged backgrounds. Social-
 391 emotional learning strengthens executive functions allowing children to be more focussed,
 392 emotionally regulated, and accomplished (Moffitt et al., 2011; Fritzell & Ritakallio, 2010),
- 393 9. Social-emotional skills are shown to improve academic outcomes. Studies suggest that
 394 executive functions more than two times surpass IQ in predicting academic performance, even
 395 in college (Duckworth & Seligman, 2005),
- 396 10. Studies show that school-based interventions have incredible cost savings in the long term as
 397 they will support the development of healthy young productive adults (National Research
 398 Council (US) and Institute of Medicine (US) Committee on the Prevention of Mental
 399 Disorders and Substance Abuse Among Children, Youth, and Young Adults, 2009), and
- 400 11. There is a greater chance of students succeeding when a positive school culture is endorsed
 401 (Bradshaw, Koth, Thornton, & Leaf, 2009).

402

403 **Conflict of Interest Statement**

404 The authors declare that the research was conducted in the absence of any commercial or financial
 405 relationships that could be construed as a potential conflict of interest.

406

407 **Contribution to the Field Statement**

408 There are no structured programs responding to youth violence and the social, emotional, and
 409 behavioral well-being amongst students in the Caribbean. There has been little data collected and
 410 organized research conducted on the efficacy and impact of programs, which may combat youth
 411 violence and improve behavioral health. Without rigorous impact evaluations, the region continues to
 412 lack effective and sustaining strategies for preventive programs. Because empirical data mostly
 413 comes from studies done in high-income countries, their adaptability is at question for the low- and
 414 middle-income Latin America and Caribbean (LAC) region as the causes of violence and mental
 415 health well-being may be specific to the region. The study shares outcomes from the implementation
 416 of the social-emotional health strategy embedded into the curriculum in five schools in Antigua and

417 Barbuda. The findings suggest positive outcomes, without significance, in decreased depression,
 418 anxiety, self-control, and competence. This new data offers insight into how we capture and deploy
 419 effective resources. It demonstrates the importance of socio-emotional learning curriculum to
 420 improve children’s self-regulated behaviors and self-management skills. More longitudinal studies in
 421 the future are needed especially to study where socio-emotional learning strategies help to reduce
 422 aggression, particularly those which may lead to violence in the LAC region.

423

424 **Funding**

425 This research was funded by the Global Environment Facility/Small Grants Programme
 426 (“GEF/SGP”), SGP Grant Project – ATG/SGP/OP6/Y3/CORE/04-Integrated Health Outreach,
 427 implemented by United Nations Development Program (UNDP) on behalf of the three GEF
 428 Implementing Agencies – UNDP, United Nations Environmental Program (UNEP) and the World
 429 Bank – and executed by United Nations Office for Project Services (UNOPS).

430

431 **Acknowledgments**

432 This work was supported by the Antigua and Barbuda Ministry of Education, Science and
 433 Technology. Collaborative partners at Indiana University also made this submission possible.

434

435 **References**

- 436 Atkins, M.S., McKay, M.M., Frazier, S.L., Jakobsons, L.J., Arvanitis, P., and Cunningham, T. (2002)
 437 Suspensions and detentions in an urban, low-income school: Punishment or reward? *Journal*
 438 *of Abnormal Child Psychology*, 30, 361–371.
- 439 Barnett, W.S. (1993). Benefit-cost analysis of preschool education: Findings from a 25- year follow-
 440 up. *American Journal of Orthopsychiatry*, 63(4), 25–50.
- 441 Beets, M. W., Flay, B. R., Vuchinich, S., Snyder, F. J., Acock, A., Li, K-K., Burns, K., Washburn, I.,
 442 and Durlak, J. (2009). Use of a social and character development programme to prevent
 443 substance abuse, violent behaviours, and sexual activity among elementary school students in
 444 Hawaii. *American Journal of Public Health*, 99(8), 1438–1445.
- 445 Blum, W., Halcon, L., Beuhring, T., Pate, E., Campell-Forrester, S., and Venema, A. (2003).
 446 Adolescent health in the Caribbean: risk and protective factors. *American Journal of Public*
 447 *Health*, 93(3), 456-460.
- 448 Blum, R. W. (2005). *Risk and protective factors in the lives of youth: The evidence base*. World Bank
 449 HDNCY Youth Development Lecture Series 11/01/05.
 450 www.worldbank.org/childrenandyouth [Accessed August 20, 2020].
- 451 Botvin G.J., Griffin, K.W., and Nichols, T.D. (2006). Preventing youth violence and delinquency
 452 through a universal school-based prevention approach. *Prevention Science*, 7, 403–408.
- 453 Bradshaw, C.P., Koth, C.W., Thornton, L.A., and Leaf, P.J. (2009). Altering school climate through
 454 school-wide Positive Behavioural Interventions and Supports: findings from a group-
 455 randomized effectiveness trial. *Prevention Science*, 10(2),100-15.

- 456 Butts, J.A., Bazemore, G., and Meroe, A.S. (2010). *Positive Youth Justice: Framing Justice*
 457 *Interventions Using the Concepts of Positive Youth Development*. Washington, DC: Coalition
 458 for Juvenile Justice.
- 459 Campie, P., Tanya, M., and Udayakumar, C. (2019). *What works to prevent lethal youth violence in*
 460 *the LAC region: A global review of the research*. Washington, DC: American Institutes for
 461 Research.
- 462 Child Trends. (2014). *Measuring elementary school individuals' social and emotional skills:*
 463 *Providing educators with tools to measure and monitor social and emotional skills that lead*
 464 *to academic success*. Washington, DC: Author.
- 465 Colquhoun, L. K., and Bourne, P. A. (2012). Self-Esteem and Academic Performance of 4th Graders
 466 in two Elementary Schools in Kingston and St. Andrew, Jamaica. *Asian Journal of Business*
 467 *Management* 4(1), 36-57.
- 468 Corrieri, S., Heider, D., Conrad, I., Blume, A., König, H. H., and Riedel-Heller, S. G. (2013). School-
 469 based prevention programs for depression and anxiety in adolescence: A systematic
 470 review. *Health Promotion International*. doi:10.1093/heapro/dat001
- 471 Day, S., Fayers, P., and Harvey, D. (1998). Double data entry: What value, what price? *Controlled*
 472 *Clinical Trials*, 19(1), 15-24.
- 473 Diamond, A. (2010). The evidence base for improving school outcomes by addressing the whole
 474 child and by addressing skills and attitudes, not just content. *Early Education and*
 475 *Development*, 21, 780-793.
- 476 Diamond, A. (2013). Want to optimize executive functions and academic outcomes? Simple, just
 477 nourish the human spirit. In P. D. Zelazo and M. D. Sera (Eds.), *Minnesota Symposia on*
 478 *Child Psychology: Developing Cognitive Control Processes: Mechanisms, Implications, and*
 479 *Interventions*, 37, 205-230. Hoboken, NJ: Wiley.
- 480 Dodge, K. A., and Coie, J. D. (1987). Social-information-processing factors in reactive and proactive
 481 aggression in children's peer groups. *Journal of Personality and Social Psychology*, 53(6),
 482 1146-1158.
- 483 Duckworth, A. L., and Seligman, E. P. (2005). Self-discipline outdoes IQ in predicting academic
 484 performance of adolescents. *Psychological Science*, 16, 939—944.
- 485 Durlak, J. A., and Wells, A. M. (1997). Primary prevention mental health programmes for children
 486 and adolescents. *American Journal of Community Psychology*, 26, 775–802.
- 487 Evans, G.W., and Schamberg, M.A. (2009). *Childhood poverty, chronic stress, and adult working*
 488 *memory*. The Rockefeller University, New York.
- 489 Flook, L., Smalley, S.L., Kitil, M. J., Galla, B. M., Kaiser-Greenland, S., Locke, J., Ishijima, E., and
 490 Kasari, C. (2010). Effects of mindful awareness practices on executive functions in
 491 elementary school children. *Journal of Applied School Psychology*, 26(1), 70-95.
- 492 Flook, L., Goldberg, S. B., Pinger, L., and Davidson, R. J. (2015). Promoting prosocial behaviour
 493 and self-regulatory skills in preschool children through a mindfulness-based kindness
 494 curriculum. *Developmental Psychology*, 51(1), 44-51.
- 495 Fritzell, J., and Ritakallio, V. (2010). Societal shifts and changed patterns of poverty. *International*
 496 *Journal of Social Welfare*, 19, S25-S41.

- 497 Graham, S., and Harris, K. R. (2000). The role of self-regulation and transcription skills in writing
498 and writing development. *Educational Psychologist*, 35(1), 3-12.
- 499 Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., and Resnik, H.
500 (2003). Enhancing school-based prevention and youth development through coordinated
501 social, emotional, and academic learning. *American Psychologist*, 58, 466-474.
- 502 Hahn, R., Fuqua-Whitley, D., Wethington, H., Lowy, J., Crosby, A., Fullilove, M., et al. (2007).
503 Effectiveness of universal school-based programs to prevent violent and aggressive behavior:
504 a systematic review. *American Journal of Preventive Medicine*, 33(2S), S114-S129.
- 505 Harris, K. R., Graham, S., Mason, L. H., and Sadler, B. (2002). Developing self-regulated writers.
506 *Theory into Practice*, 41, 110-115.
- 507 Hawkins, J.D., Catalano, R.F., Kosterman, R., Abbott, R., and Hill, K.G. (1999). Preventing
508 adolescent health-risk behaviors by strengthening protection during childhood. *Archives*
509 *of Pediatrics and Adolescent Medicine*, 153(3), 226-234. doi: 10.1001/archpedi.153.3.226
- 510 Heckman, J. J. (2007). The economics, technology, and neuroscience of human capability
511 formation. *Proceedings of the National Academy of Sciences of the United States of*
512 *America*, 104, 13250-13255.
- 513 Inter-American Development Bank (IDB); Sutton, H., and Ruprah, I., editors. (2017). *Restoring*
514 *Paradise in The Caribbean: Combatting Violence with Numbers*. Inter-American Bank, New
515 York: NY.
- 516 Jones, D. E., Greenberg, M., and Crowley, M. (2015). Early social-emotional functioning and public
517 health: The relationship between kindergarten social competence and future wellness.
518 *American Journal of Public Health*, 105(11), 2283-2290.
- 519 Lipps, G.E., Lowe, G.A., Halliday, S., Morris-Patterson, A., Clarke, N., and Wilson, R.N. (2010).
520 The association of academic tracking to depressive symptoms among adolescents in three
521 Caribbean countries. *Child and Adolescent Psychiatry and Mental Health*, 4, 6.
522 doi: 10.1186/1753-2000-4-16.
- 523 Lipps, G.E., Lowe, G.A., Gibson, R.C., Morris, A., Halliday, S., Clarke, N., and Wilson, R.N.
524 (2012). Parenting and depressive symptoms among adolescents in four Caribbean societies.
525 *Child and Adolescent Psychiatry and Mental Health*, 6:31. doi: 10.1186/1753-2000-6-31
- 526 Maharaj, R.G., Nunes, P., and Renwick, S. (2009). Health risk behaviors among adolescents in the
527 English-speaking Caribbean: a review. *Child and Adolescent Psychiatry and Mental Health*.
528 <https://bit.ly/348eXIZ> [Accessed August 20, 2020].
- 529 Matthews, C.A. (2013). *Quality education counts for skills and growth*. Caribbean Knowledge Series
530 Washington, D.C.: World Bank Group. <https://bit.ly/3iKUxd2> [Accessed August 20, 2020].
- 531 Moffitt, T.E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R.J., Harrington, H., Houts, R.,
532 Poulton, R., Roberts, P.W., Ross, S., Seas, M.R., Thomson, W.M., and Caspi, A. (2011). A
533 gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of*
534 *the National Academy of Sciences of the United States of America*, 108(7), 2693-2698. doi:
535 10.1073/pnas.1010076108
- 536 Morrison, W., LeBlanc, M., and Doucet, C. (Eds). (2005). *New Brunswick perspectives on crime*
537 *prevention: Promising practices for children, youth and families*. University of New
538 Brunswick/Gaspereau Press, Fredericton, New Brunswick.

- 539 Napoli, M., Krech, P.R., and Holley, L.C. (2005). Mindfulness Training for Elementary School
540 Students. *Journal of Applied School Psychology*, 21(1), 99-125. doi: 10.1300/J370v21n01_05
- 541 National Research Council (US) and Institute of Medicine (US) Committee on the Prevention of
542 Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults:
543 Research Advances and Promising Interventions; O'Connell, M.E., Boat, T., and Warner,
544 K.E., editors. (2009). *Preventing mental, emotional, and behavioural disorders among young
545 people: Progress and possibilities*. Washington (DC): National Academies Press (US); 9,
546 Benefits and Costs of Prevention. <https://bit.ly/3kRIj4l> [Accessed August 20, 2020].
- 547 Overseas Security Advisory Council. (2015). <https://www.osac.gov/> [Accessed August 20, 2020].
- 548 Pan American Health Organization. (2014). Violence against women in Latin America and the
549 Caribbean: A comparative analysis of population-based data from 12 countries. *Regional
550 report*. Washington D.C.
- 551 Payton, J., Weissberg, R.P., Durlak, J.A., Dymnicki, A.B., Taylor, R.D., Schellinger, K.B., and
552 Pachan, M. (2008). *The positive impact of social and emotional learning for kindergarten to
553 eighth-grade students: Findings from three scientific reviews*. Chicago, IL: Collaborative for
554 Academic, Social, and Emotional Learning.
- 555 Razzouk, D., Gallo, C., Olifson, S., Zorzetto, R., Fiestas, F., Poletti, G., Mazzotti, G., Levav, I., and
556 Mari, J. J. (2008). Challenges to reduce the '10/90 gap': mental health research in Latin
557 American and Caribbean countries. *Acta psychiatrica Scandinavica*, 118(6), 490–498.
558 doi:10.1111/j.1600-0447.2008.01242.x
- 559 Samms-Vaughan, M.E., Jackson, M.A., and Ashley, D.E. (2005). Urban Jamaican Children's
560 Exposure to Community Violence. *West Indian Medical Journal*, 54(1), 14-21. doi:
561 10.1590/S0043-31442005000100004.
- 562 Schweinhart, L., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., and Nores, M. (2005). *Lifetime
563 effects: The high/scope Perry preschool study through age 40*. Ypsilanti, Mich.: High/Scope
564 Educational Research Foundation.
- 565 UNDP. (2012). *Caribbean Human Development Report 2012: Human Development and the Shift
566 to Better Citizen Security*. <https://bit.ly/3iQJJu0> [Accessed August 20, 2020].
- 567 UNDP Subregional Office for Barbados and the OECS. (2011). United Nations Sub-regional
568 Analysis: Barbados and the OECS. <https://bit.ly/2Q0TCsN> [Accessed August 20, 2020].
- 569 Williams, H. (2013). Postcolonial Structural Violence: A Study of School Violence in Trinidad and
570 Tobago. *International Journal of Peace Studies*, 18(2), 39-65.
- 571 Wirtz, A. L., Alvarez, C., Guedes, A. C., Brumana, L., Modvar, C., and Glass, N. (2016). Violence
572 against children in Latin America and Caribbean countries: a comprehensive review of
573 national health sector efforts in prevention and response. *BMC Public Health*, 16(1), 1006.
574 doi: 10.1186/s12889-016-3562-3
- 575 World Bank; United Nations Office on Drugs and Crime. (2007). *Crime, Violence, and
576 Development: Trends, Costs, and Policy Options in the Caribbean*. Washington, DC.
577 <https://bit.ly/3kXbrXR> [Accessed August 20, 2020].
- 578 World Health Organisation. (2009). *Global school-based student health survey (GSHS): 2009
579 Antigua and Barbuda*. <https://bit.ly/2CBjJ6B> [Accessed August 20, 2020].
- 580 Zumbrunn, S., Tadlock, J., and Danielle Roberts, E. (2011). *Encouraging self-regulated learning in
581 the classroom: A review of the literature*. Metropolitan Educational Research Consortium

582 (MERC), Virginia Commonwealth University. <https://bit.ly/2E4XsyB> [Accessed August 20,
583 2020].

584

585 **Table 1: C-SELF Modules**

586

C-SELF Modules		
<p>Module 1: Mindfulness using breathing and focused attention techniques, and emotional awareness through emotional identification to meet the emotional regulation, self-awareness, and impulse control elements of the self-management.</p> <p>Module 2: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, and positive percepts through emotional focusing to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective and the positive affect of the resiliency objective.</p> <p>Module 3: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, and self-esteem building through positive self-reinforcement to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the</p>	<p>Module 5: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, and self-compassion fostering to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, and the self-esteem facet of the self-efficacy objective.</p> <p>Module 6: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, and self- and other-compassion fostering to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-</p>	<p>Module 8: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, motivation building through goal setting, and self- and other-compassion through perspective-taking to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-esteem facet of the self-efficacy objective, perseverance of the self-responsibility objective, and other compassion, caring, and perspective-taking of the pro-sociality objective.</p> <p>Module 9: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive percepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, motivation building through goal setting, and self- and other-compassion through</p>

<p>positive affect aspect of the resiliency objective, and self-esteem facet of the self-efficacy objective.</p> <p>Module 4: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive precepts through emotional focusing, self-esteem building through positive self-reinforcement and self-efficacy strengthening through positive refocusing to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges and positive affect aspects of the resiliency objective, and the self-esteem facet of the self-efficacy objective.</p>	<p>esteem facet of the self-efficacy objective, and other compassion, caring, and empathy of the pro-sociality objective.</p> <p>Module 7: Mindfulness using breathing and focused attention techniques, emotional awareness through emotional identification, somatic awareness through body focusing, positive precepts through emotional focusing, self-esteem building through positive self-reinforcement, self-efficacy strengthening through positive refocusing, self-compassion fostering, and motivation building through goal setting to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-esteem facet of the self-efficacy objective, and perseverance of the self-responsibility objective.</p>	<p>perspective-taking to meet the emotional regulation, self-awareness, and impulse control elements of the self-management objective, the ability to manage challenges, positive affect, and self-compassion aspects of the resiliency objective, the self-esteem facet of the self-efficacy objective, perseverance of the self-responsibility objective, and other compassion, caring, and perspective-taking of the pro-sociality objective.</p> <p>Module 10: Integration of programme to meet all objectives.</p>
---	---	--

587

588 **Table 2: Students' Descriptive Information (N = 221)**

589

Variables	Categories	n(%)	Range	M(SD)
School	School 2	30(13.57%)		
	School 5	191(86.43%)		
Grade	Grade 3	48(21.72%)		
	Grade 4	57(25.79%)		
	Grade 5	57(25.79%)		
	Grade 6	59(26.70%)		
Gender	Female	85(38.8%)		
	Male	134(61.2%)		
Age		211	7-13	10.14(1.31)

590

591 **Table 3: Descriptive Information of the Study's Key Variables**
592

Phase	Domains	School 2		School 5		Total	
		n	M(SD) ₁	n	M(SD) ⁴	n	M(SD) ⁴
Pre-Test	Persistence	14	3.12(.59) ₁	167	2.59(.86)	181	2.63(.85)
	Self-control	14	3.14(.62) ₁	167	2.71(.77)	181	2.74(.77)
	Social Competence	14	3.01(.57) ₁	167	2.71(.66)	181	2.73(.65)
	Reactive Aggression	14	2.71(.57) ₂	168	1.91(.89)	182	1.97(.89)
	Proactive Aggression	14	1.29(.34) ₃	168	1.25(.65)	182	1.26(.63)
Post-Test	Persistence	30	2.71(.82) ₄	84	2.80(.89)	114	2.78(.87)
	Self-control	30	2.87(.84) ₄	84	2.94(.85)	114	2.92(.84)
	Social Competence	30	2.69(.62) ₅	84	2.89(.73)	114	2.84(.71)
	Reactive Aggression	30	2.10(.72) ₆	84	1.79(.91)	114	1.87(.87)
	Proactive Aggression	30	1.37(.51) ₇	84	1.33(.66)	114	1.34(.62)

Notes: (1) Ranged between 2 and 4; (2): Ranged between 1.67 and 3.67; (3): Ranged between 1.00 and 2.00; (4): Ranged between 1.00 and 4.00; (5): Ranged between 1.33 and 3.67. (6): Ranged between 1.00 and 3.33; (7): Ranged between 1.00 and 3.00;

593 **Table 4: T-Test Comparing Pre- and Post-Tests across Schools and in Total**
594
595

Domains	School 2		School 5		Total	
	t(df)	Diff M ¹	t(df)	Diff M ¹	t(df)	Diff M ¹
Persistence	1.25(13)	.14	-2.49(59)*	-.24	-2.02(73)*	-.17
Self-control	.74(13)	.10	-4.20(59)**	-.36	-	-.27
Social Competence	1.74(13)	.17	-2.25(59)*	-.15	-1.56(73)	-.09
Reactive Aggression	5.15(13)**	.62	-1.24(60)	-.11	.26(74)	.02
Proactive Aggression	.43(13)	.05	-2.57(60)*	-.16	-2.2(74)*	-.12

Note (1): pre-test minus post-test

596 **Table 5: T-Test Comparing Pre- and Post-Tests across Gender**
597
598
599

Domains	Female		Male	
	t(df)	Diff M ¹	t(df)	Diff M ¹
Persistence	-1.11(25)	-.14	-1.68(47)	-.18
Self-control	-3.88(25)**	-.38	-2.06(47)*	-.22
Social Competence	-1.59(25)	-.20	-.57(47)	-.04
Reactive Aggression	3.41(25)**	.41	-1.79(48)	-.18
Proactive Aggression	.00(25)	.00	-2.40(48)*	-.18

Note (1): pre-test minus post-test

600

601