

A Quasi-Experimental Study on Social Emotional Learning and Primary Prevention

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Abstract

The purpose of this quasi-experimental study was to determine the efficacy of the Top 20 social emotional learning (SEL) program and how their SEL curriculum may lead to an increase in SEL. The secondary goal of this study was to explore how the social emotional competencies of self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior may play a significant role in a child and adolescent's social emotional development. A total of 359 middle school students participated in the study. The experimental group consisted of 170 students and the control group consisted of 189 students. Two middle school teachers at the school helped embed and teach the Top 20 SEL curriculum and monthly SEL lessons to all students in the experimental group. The teachers completed the Devereux Student Strengths Assessment (DESSA) pre-test one month into the study and the DESSA post-test five months later. The descriptive analysis revealed an increase in all eight social emotional competencies for the experimental group with a total SEL difference score of $M = 8.23$. The Top 20 SEL program has demonstrated how experience and practice in SEL skills are more likely to lead to an increase in SEL.

Keywords: social emotional learning, primary prevention, Top 20 SEL program, vicarious learning

Educational Impact and Implications Statement

Exposure to the Top 20 SEL program has led to a significant increase in SEL. These results support the need for a school-based primary prevention program that helps children and adolescents develop SEL skills within the schools.

1. Introduction

Mental health problems such as anxiety and depression have been directly related to difficulties in the school (Khesht-Masjedi et al., 2019; Mazzone et al., 2007; Humensky et al., 2010; Seipp, 1991). These difficulties include poor academic achievement (Khesht-Masjedi et al., 2019; Yousefi et al., 2010; Busari, 2012; Mazzone et al., 2007; Humensky et al., 2010; Seipp, 1991), a lack of motivation, low attendance, and difficulty concentrating (Khesht-Masjedi et al., 2019). A depressed mood may lead to symptoms of sadness, disappointment, despair, and hopelessness (American Psychiatric Association, 2013). If a student sees themselves as a failure, they may exhibit poor grades (Khesht-Masjedi et al., 2019; Busari, 2012), and drop out of school. In addition, students who display social-emotional concerns and problematic behaviors may be more likely to have disciplinary infractions and special education referrals (Elias & Haynes, 2008; Stoiber, 2011). Hence without the appropriate social, emotional, or behavioral skills, students may encounter these difficulties and become victims to several other problems at the school including bullying (Kann et al., 2018; Frey et al., 2009; Espelage et al., 2015; Nickerson et al., 2019), academic anxiety (Dobson, 2012), peer victimization (Craig et al., 2009; World Health Organization, 2012), and aggressive and exclusionary behaviors (Cook et al., 2010; Roberts et al., 2013).

Mental health and social emotional problems have become more prevalent among American youth (American Psychological Association [APA], 2019; Centers for Disease Control and Prevention [CDC], 2019). Mental health and social emotional problems have demonstrated a significant impact on a child and adolescent's health and well-being (APA, 2019; CDC, 2019) and interfered with their ability to cope (Jacob, 2013). Without the ability to cope with life's challenges, many children and adolescents suffer from a variety of behavioral problems, and psychological disorders. Specifically, 4.5 million children ages 3 to 17 have been diagnosed with a behavioral

problem, approximately 4.4 million children have been diagnosed with anxiety, and an additional 1.9 million children have been diagnosed with depression (CDC, 2019).

Given children and adolescents in the United States spend approximately 30-35 hours of their time in school per week (Hofferth & Sandberg, 2001), schools can therefore serve as an excellent location for both prevention and well-being initiatives (Seligman et al., 2009; Pfeiffer & Reddy, 1998; American Academy of Pediatrics, 2004; Weist, 2005; Durlak et al., 2015; Gresham, 2018; White & Murray, 2015; Srinivasan, 2019). Although youth often receive support after they have been identified as having a problem, one must intervene before the problem develops (LaBelle, 2019). This objective identifies with the field known as prevention science. Prevention science helps identify potential risks and protective factors to help eliminate human dysfunction and prevent or moderate any negative impacts (Burns, 2011). Hence all students must be considered in receiving the primary prevention if one is to prevent psychological dysfunction and future problems from occurring. Major strides in prevention come from a perspective focused on building competency, not correcting weaknesses (Seligman & Csikszentmihalyi, 2000). This perspective or field of study is known as positive psychology.

Researchers in the field of positive psychology study the good life and the dimensions of subjective states (i.e., positive emotions and subjective well-being), positive traits (i.e., strengths and virtues), and how one can contribute to positive institutions and communities (Seligman & Csikszentmihalyi, 2000; Medlock, 2012). Positive education teaches traditional educational principles, resilience, and happiness for all school children (Seligman et al., 2009). Seligman et al. (2009) argue that positive education should teach skills that contribute to one's well-being and achievement. Therefore, positive psychology can be seen as an applied science that weaves positive psychology into educational practice to help support the well-being of the student (Waters & Loton, 2019). With the integration of both positive psychology and positive education, schools could develop a climate that fosters human strengths and resiliency.

In order to foster a climate that encourages human strengths and resiliency, schools must promote and teach social emotional learning. Social emotional learning (SEL) can be defined as the ability to understand and manage one's emotions, develop strong positive relationships, and make thoughtful and responsible decisions (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2019a). According to CASEL (2019), SEL can be divided into five different social emotional competencies. These competencies consist of self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The promotion of these competencies has provided behavioral health rehabilitation and special needs services to students who qualified for Tier 1, 2, or 3 interventions (Gresham, 2018). These interventions vary from generic to tailored depending on the needs of the student (Gresham, 2018). Although these services help treat problematic behaviors and performance deficits within the schools, they fail to recognize the need for a more primary approach to preventative services (LeBuffe et al., 2014). Hence a more primary approach to prevention is necessary if all students are to learn and apply the different SEL competencies and be successful in school. To accomplish this goal, and help measure these competencies, LeBuffe et al. (2014) created the Devereux Student Strengths Assessment (DESSA).

The DESSA was created after LeBuffe et al. (2014) explored CASEL's five social emotional competencies and conducted an exploratory factors analysis that did not reveal a multi-factor structure. With a factor accounting for well over 50 percent of the variance and several residual factors, LeBuffe et al. (2014) ruled out the exploratory factor analysis and engaged in a more logical scale of developmental techniques. Items were assigned to corresponding scales based on their content and redefined using a variety of psychometric techniques including an alpha coefficient and corrected item-scale reliabilities (LeBuffe et al., 2014). After reviewing the research, LeBuffe et al. (2014) identified two of CASEL's SEL competencies to have several sub-parts. Based on the statistical analysis, the competency of responsible decision-making was divided into two sub-scales (i.e., personal responsibility and decision-making), and the competency of self-management was divided into the sub-scale of self-management and goal-directed behavior (LeBuffe et al., 2014).

Although CASEL's original framework did not include the competency of optimism, LeBuffe et al. (2014) thought it was necessary given the research on optimism and its connection to SEL. According to the research, optimism is a personality trait or explanatory style that a child uses to help them see a particular situation as good or bad (Seligman et al., 2007). To help improve one's explanatory style, children need to take realistic responsibility and choose a more positive behavior (Seligman et al., 2007). Optimism helps the individual make an honest appraisal, accept their limitations, and help them understand that the problem can be temporary and situational (Seligman et al., 2007; Goodmon et al., 2015). Optimism is associated with goal-directed behavior, self-regulation (Aspinwall, 2005; Peterson, 2000), and resiliency (Seligman et al., 2007; LeBuffe et al., 2014). Given these are all crucial components to the development of SEL, optimism was added to the DESSA as its own competency. With the

additional research from LeBuffe et al. (2014) and Martin Seligman's optimism, the DESSA became a useful tool in measuring a more holistic understanding of SEL and the eight social emotional competencies of self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior.

Developing an SEL program that concentrates on these social emotional competencies can lead to several positive outcomes. These positive outcomes include: better attachments and attitudes, an increase in social attendance and motivation (Durlak et al., 2011), improvements in mental health (Panayiotou et al., 2019), and performance in the school (Diekstra, 2008; Durlak et al., 2011; Durlak et al., 2015; Wilson et al., 2006). Specifically, social responsibility goals and social emotional competencies have both been positively and significantly related to 4th grade and 7th grade reading scores, and 7th grade math scores (Oberle et al., 2014). Previous research has also found an increase in prosocial behavior (Schonert-Reichl et al., 2015; Durlak et al., 2011; Durlak et al., 2015), academic success (Sklad et al., 2012; Fleming et al., 2005; Wentzel, 1993; Durlak et al., 2011; DiPerna et al., 2005; Zins et al., 2004), social skills (Sklad et al., 2012), successful peer relationships (Dobia et al., 2019; Dodge & Price, 1994; Nowicki & Duke, 1994), critical thinking and problem-solving skills (Varela et al., 2013), a reduction in antisocial behavior (Sklad et al., 2012), violence, aggression (Beets et al., 2009; Botvin et al., 2006), and externalizing and internalizing problems (Boncu et al., 2017; Castillo et al., 2018; Nickerson et al., 2019; Espelage et al., 2015).

1.1 Rationale, Purpose, and Hypotheses

There is a lack of primary prevention programs that develop SEL skills within the schools (see Greenberg et al., 2003; White & Murray, 2015; Eklund et al., 2018; LaBelle, 2019; Sklad et al., 2012). Few states have adopted a freestanding, comprehensive program with SEL standards (Eklund et al., 2018) and too many programs have become a succession of fragmented fads with little sustainability, direction, or impact (Shriver & Weissberg, 1996). Instead of implementing an authentic school-based primary prevention program, many schools have chosen to implement a disease model that concentrates on the deficits of the child (Durlak et al., 2015) and treat a problem after it has been identified (LaBelle, 2019).

The purpose and primary goal of this quasi-experimental study was to determine the efficacy of the SEL program Top 20 and how their SEL curriculum may lead to an increase in social emotional learning. The secondary goal of this study was to explore how the social emotional competencies of self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior may play a significant role in a child and adolescent's social emotional development. To study the efficacy of the Top 20 SEL program and how each competency influences a child and adolescent's social emotional development, this researcher investigated several research hypotheses. The first hypothesis investigated the total SEL change or difference score before and after the Top 20 SEL program. This researcher wanted to explore whether there was a statistically significant difference in SEL change between the control and the experimental group. The second hypothesis explored the statistically significant change in SEL scores before and after the Top 20 SEL program. This researcher anticipated a statistically significant increase in SEL scores after the implementation of the Top 20 SEL program. A descriptive analysis was also performed to determine what the trends of growth are for each social emotional competency (i.e., self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior).

2. Methods

2.1 Participants

The population for this study was students in a public middle school. There are an estimated 241 public middle schools in the state of Minnesota (Minnesota Department of Education, 2020). General student demographics for those in this specific public school district consisted of 85.7% White, 6.7% Hispanic, 5.9% Black, and 5.0% Asian (Ballotpedia, 2020). The median household income for this county is \$74, 995 compared to \$60, 282 for the entire state of Minnesota. The poverty rate for this county is 7.3 percent (Ballotpedia, 2020). This is well below the poverty rate of 11.5 percent for the state of Minnesota (Ballotpedia, 2020). The population was appropriate for the problem and purpose of the study. This researcher was studying the younger generation and those exposed to an SEL program. By sampling a population without any previous exposure to an SEL program, this researcher was able to investigate the efficacy of the Top 20 SEL program. This helped answer the questions on the efficacy of the Top 20 SEL program and if this program increased SEL or not. By studying the student population and the mean scores for each social emotional competency, this researcher was also able to answer the question on what the growth trends are for all eight SEL competencies.

Participants were recruited from a public middle school in the state of Minnesota for the 2019-2020 school year. Nonprobability sampling was used in this study. Students were assigned to an experimental group or control group, a sixth-grade homeroom class, and a sixth-grade homeroom teacher. Both the experimental group and control group were similar in their sample size, age, gender, and grade level. The experimental group consisted of 170 students, and the control group consisted of 189 students. There was a total of 92 males and 78 females in the experimental group, and 96 males and 93 females in the control group. Students in both the experimental group and control group were between the ages of 11 and 12 years-old and all participants were in sixth-grade.

2.2 Measures

Levels of each social emotional competency were measured pre- and post- implementation of the Top 20 SEL curriculum. In this study, post-test scores served as the dependent variable. This allowed the researcher to investigate the statistical significance and efficacy of the Top 20 SEL program. A descriptive analysis also helped the researcher determine if there was an increase in any of the eight social emotional competencies. This researcher used the Devereux Student Strengths Assessment (DESSA). The DESSA consists of a 72-item standardized instrument with a five-point rating scale of never, rarely, occasionally, frequently, and very frequently (LeBuffe et al., 2014). This assessment has demonstrated evidence of several types of validity including content validity, construct validity, and criterion validity (LeBuffe et al., 2014). The DESSA has also demonstrated excellent internal reliability, test-retest reliability, and interrater reliability (LeBuffe et al., 2014). The instrument was used to measure the efficacy of the Top 20 SEL program, the following social emotional competencies, and total SEL score.

Self-Awareness. Recognizing one's own emotions, thoughts, values, and behavior (CASEL, 2019). A total of 7 items make up the total composite score for self-awareness on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of self-awareness.

Self-Management. The ability to effectively manage and regulate one's feelings, thoughts, and behaviors in a variety of situations (CASEL, 2019). A total of 11 items make up the total composite score for self-management on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of self-management.

Social Awareness. The ability to understand the perspective of another, have compassion for them, and empathize (CASEL, 2019). A total of 9 items make up the total composite score for social awareness on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of social awareness.

Relationship Skills. The ability to work well and cooperate with others (CASEL, 2019; Durlak et al., 2015). A total of 10 items make up the total composite score for relationship skills on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of relationship skills.

Personal Responsibility. The ability to be careful and reliable in one's actions and efforts towards the group (LeBuffe et al., 2014). A total of 10 items make up the total composite score for personal responsibility on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of personal responsibility.

Decision-Making. Problem-solving by observing and learning from others, and by taking past experiences into consideration (LeBuffe et al., 2014). A total of 8 items make up the total composite score for decision-making on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of decision-making.

Optimistic Thinking. Confidence, hopefulness, and positive thinking regarding one's past, present, and future (LeBuffe et al., 2014). A total of 7 items make up the total composite score for optimism on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of optimism.

Goal-Directed Behavior. Initiation and persistence in completing a task despite the difficulty level (LeBuffe et al., 2014). A total of 10 items make up the total composite score for goal-directed behavior on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of goal-directed behavior.

Social Emotional Learning. The ability to understand and manage one's emotions, develop strong positive relationships, and make thoughtful and responsible decisions (CASEL, 2019a). The weighted average of all eight social emotional competencies (i.e., self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior) made up the total composite score for social emotional learning on the DESSA. Scores for this interval variable ranged from 28 to 72, with higher scores indicating higher levels of social emotional learning.

2.3 Procedure

Students from a public middle school in the state of Minnesota were assigned to an experimental group or control group, a sixth-grade homeroom class, and a sixth-grade homeroom teacher. Before the Top 20 SEL program was implemented at the middle school, all sixth-grade homeroom teachers received computerized training on the DESSA and the eight social emotional competencies. Sixth-grade homeroom teachers were taught what student behaviors were associated with each social emotional competency. After the sixth-grade homeroom teachers received training, they observed each student in their homeroom class from August 2019 to September 2019 and recorded any behavior associated with one of the eight social emotional competencies. Using the DESSA and a five-point rating scale procedure, sixth-grade homeroom teachers were asked to rate each student on how well they demonstrated each behavior or competency. After the results were recorded by all 15 sixth-grade homeroom teachers, two middle school teachers, trained in the Top 20 SEL program, helped embed and teach the Top 20 SEL curriculum and monthly SEL lessons to all students in the experimental group. All SEL lessons were delivered as planned according to the scope and sequence of the Top 20 SEL program.

Students in the experimental group followed a social emotional curriculum that focused on the eight social emotional competencies of self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior. In addition to the social emotional curriculum, students also received six additional SEL lessons on team-building, organization, gratitude, service to others, goals, and problem-solving from September 2019 to January 2020. Students in the control group did not receive the SEL curriculum or any additional SEL lesson. After the SEL curriculum and additional SEL lessons ended in January 2020, sixth-grade homeroom teachers were asked to rate each student in their homeroom class on how well they demonstrated each behavior or competency. Teachers used the DESSA and the same five-point rating scale. After sixth-grade homeroom teachers entered their scores for each student in their homeroom class, the raw data was analyzed by this researcher.

2.4 Data Collection and Analysis

The de-identified data consisted of pre and post-test social emotional competency scores, a total SEC score before and after the treatment, student ID, age, gender, grade level, and sixth-grade homeroom teacher. All data was scored, and each participant had a “value” for each SEL pre and post-test total score and pre and post-test competency score. For the total SEL change score, this researcher calculated the difference between the post-test total SEL score from the pre-test total SEL score. This researcher calculated this score for both the experimental group and control group. This total SEL change score served as the dependent variable in the independent-samples t-test. A Cohen’s d test was also performed to determine the effect size of the Top 20 SEL program. For the descriptive analysis on each social emotional competency, this researcher also calculated the mean scores for each competency before and after the treatment. This researcher performed this calculation for both the experimental group and control group and compared the scores from the pre and post-tests.

In this study, the SEL change is the mean difference SEL score of the post-test minus the pre-test. To help determine if there was a statistically significant difference in SEL change between the control and experimental group, an independent-samples t-test was performed. This statistical measurement helped identify the statistical difference between the mean of the control group and the mean of the experimental group. To investigate if there was a statistically significant change in SEL scores before and after the Top 20 SEL program, this researcher also performed a paired-samples t-test. The paired-samples t-test helped determine if there was a statistically significant difference between the mean score of the experimental group before and after the treatment (i.e. the Top 20 SEL program). The independent-samples t-test, paired-samples t-test, and Cohen’s d helped determine the efficacy of the Top 20 SEL program and if their curriculum had led to an increased in the total SEL score.

To answer the question on the trends of growth for all eight SEL competencies, this researcher completed a descriptive analysis. Several bar charts were created on the means scores and standard deviations of all eight competencies. These bar charts helped the researcher explore all the different competencies and determine if there were any differences in mean scores before and after the treatment. This additional information provided valuable information on each competency and addressed the gap in the literature regarding the eight social emotional competencies and a child and adolescent’s social emotional development.

2.5 Ethical Assurances

For this secondary data analysis, this researcher obtained approval from Northcentral University’s Institutional Review Board (IRB). This complies with federal requirements regarding ethical research and the protection of human subjects. This quasi-experimental design posed minimal risk to the participants. Students were exposed to a

social emotional learning curriculum that encouraged human strengths and resiliency. There was no harm to any student or teacher while they participated in this study. Student's privacy rights were protected. All student IDs, names, social emotional competency scores, and other identifying information were kept confidential. After the data was analyzed and interpreted, all data and identifying information was stored in a password protected file. Data will be kept for a minimum duration of seven years and destroyed after this timeframe expires.

To reduce any potential bias regarding the results of this study, this researcher was not financially compensated for any work from the Top 20 SEL program. All raw data was analyzed and interpreted using a variety of statistical methods including an independent-samples t-test, a paired-samples t-test, and Cohen's d.

3. Results

To investigate the first hypothesis on whether there was a statistically significant difference in SEL change between the control and experimental group, this researcher conducted an independent-samples t-test. Those in the experimental group demonstrated a significant increase in SEL score ($M = 8.23$, $SD = 10.73$) in comparison to those in the control group ($M = 5.60$, $SD = 8.22$). Results from the independent-samples t-test revealed a statistically significant difference, $M = (2.63)$, $t(315.885) = -2.576$, $p = 0.01$ (see Table 1). This demonstrates a significantly higher level of SEL among the participants exposed to the Top 20 SEL program.

Table 1. Independent Samples T-Test

T-Test for Equality of Means						
t	df	Sig. (2-tailed)	Mean difference	Std. Error Difference	95% Confidence Interval of Difference	
					Lower	Upper
-2.607	354	0.01	-2.627	1.008	-4.609	-0.6451
-2.576	315.885	0.01	-2.627	1.020	-4.634	-0.621

To investigate the second hypothesis on if there was a statistically significant change in SEL scores before and after the Top 20 SEL program, this researcher conducted a paired-samples t-test. Results from the paired-samples t-test revealed a statistically significant difference, $t(169) = 10.002$, $p < 0.000$ (see Table 2). The results from the post-test SEL score demonstrated a significance increase in SEL ($M = 8.23$) after the implementation of the Top 20 SEL program.

Table 2. Paired-Samples T-Test

	Mean	Std. Deviation	Std. Error Mean	Error	Lower	Upper	t	df	Sig. (2-tailed)
Post Test SEL - Pre-Test SEL	8.229	10.727	0.823		6.605	9.854	10.002	169	0.000

To determine the effect size of the Top 20 SEL program, the researcher also performed a Cohen's d. According to Sullivan and Feinn (2012) a Cohen's d-ratio can range from small (.2), to moderate (.5), to large (.80) respectively. The current findings indicated a moderate effect size (i.e., $d = 0.77$) for the Top 20 SEL program.

To examine the trends of growth for each SEL competency (i.e., self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior), this researcher constructed a bar chart on the pre and post-test means scores and standard deviations for all eight competencies in the experimental group (see Figure 1). Pre-test mean scores ranged from 40.6 (relationship skills) to 45.7 (personal responsibility). Post-test mean scores ranged from 48.9 (social awareness) to 52.2 (personal responsibility). The bar chart also reported a total SEL pre-test score ($M = 42.0$, $SD = 10.5$) and post-test score ($M = 50.2$, $SD = 14.1$).

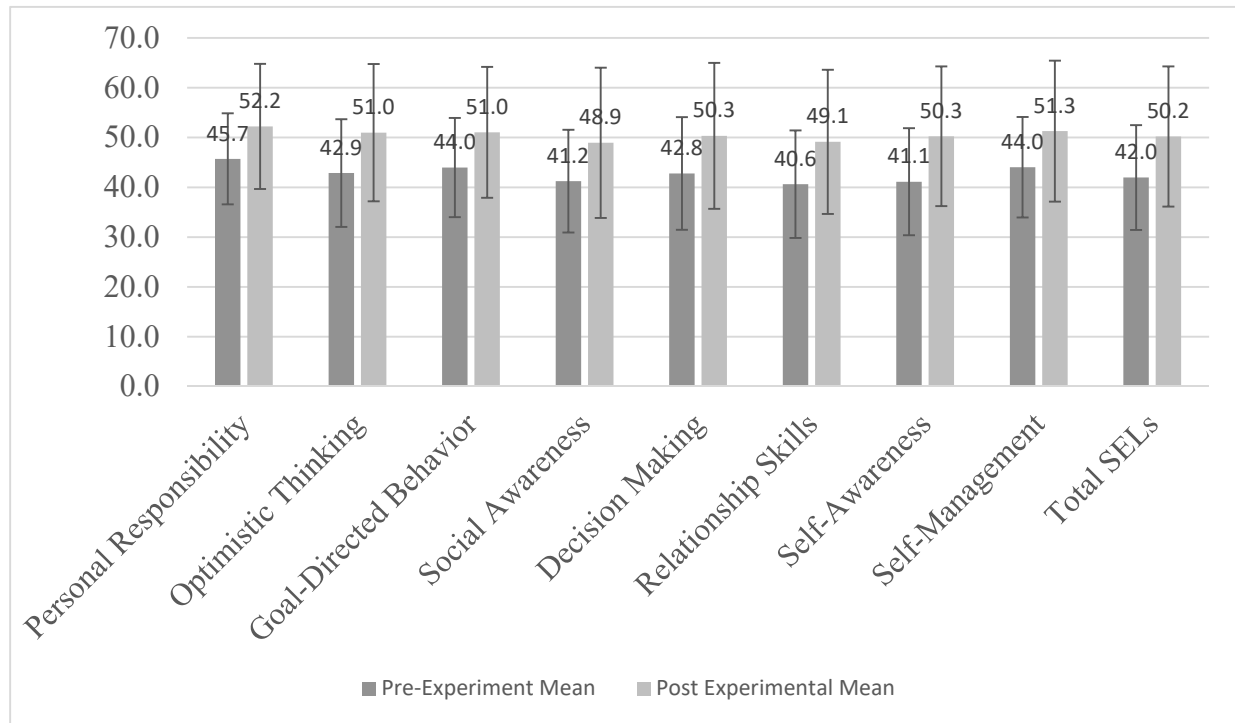


Figure 1. Pre and Post-Tests Mean Scores for SEL Competencies

An additional bar chart was constructed to display the mean score differences for all eight competencies and total SEL for the experimental group (see Figure 2). The lowest difference in mean score was personal responsibility ($M = 6.5$). The largest difference in mean score was self-awareness ($M = 9.1$). Post-test mean scores demonstrated an increase in all eight social emotional competencies and total SEL. The total SEL difference score was 8.2.

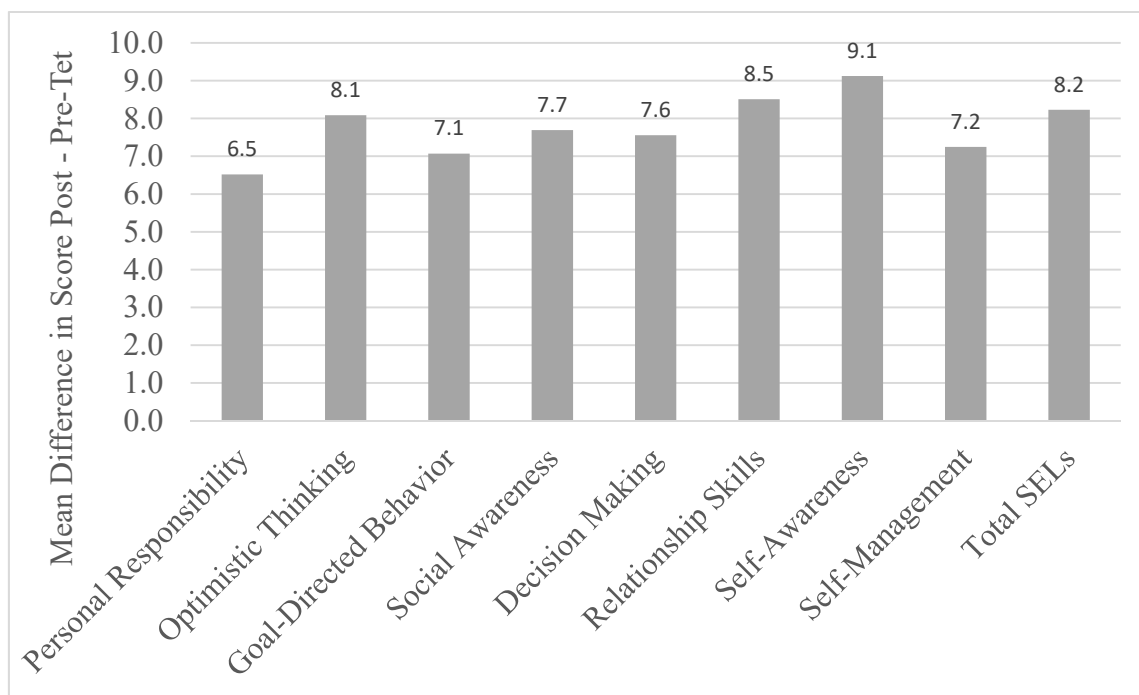


Figure 2. Mean Score Differences for SEL Competencies

The results from the independent-samples t-test, paired-samples t-test, and Cohen's *d*, all demonstrate the high efficacy of the Top 20 SEL program. For the experimental group, the descriptive analysis also revealed an increase in all eight social emotional competencies with a total SEL difference score of $M = 8.23$. The study findings corroborated with the existing literature. Similar to other SEL programs, the Top 20 SEL program has led to several improvements in self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Durlak et al., 2015). Moreover, findings from the current study also provided additional information on the competencies of optimistic thinking, and goal-directed behavior. Given the high efficacy of the Top 20 SEL program, the results from the study also support the need for a more school-based primary prevention program.

3.1 Theoretical Extension

Social emotional learning strategies are based on the principles derived from Albert Bandura's social learning theory (Durlak et al., 2015). According to Bandura (1977) people learn new patterns of behavior through direct experience and/or by observing and imitating others. Instructional strategies from Bandura's (1977) social learning theory were incorporated into the Top 20 SEL program. These instructional strategies included verbal instruction (coaching), behavioral rehearsal, performance feedback, and social problem-solving. Middle school students in the experimental group were able to practice these instructional strategies and observe/imitate pro-social behavior from the Top 20 SEL instructors. Children learned a social behavior by observing, imitating, and responding to verbal feedback. Children were taught a target skill and given a chance to practice their skill with a peer. Children were able to refine a skill with feedback, and modify the skill based on the social context and what was reinforced or encouraged. Since exposure to these instructional strategies led to an increase in SEL, one can conclude that such strategies are vital to the efficacy of an SEL program and should be incorporated whenever possible. Moreover, one should also consider how these strategies are used and practiced over time. Participants exposed to the Top 20 SEL program were provided with real-world opportunities to practice and master all social emotional competencies. Since this mastery led to an increase in SEL learning, this type of real-world practice should be provided to all students. This additional information demonstrates the importance of vicarious learning and real-world practice.

4. Discussion

For hypotheses one and two, the results provided evidence that supports the efficacy of the Top 20 SEL program. The results for the first hypothesis demonstrated a significantly higher SEL change score for the experimental group (i.e., Top 20 SEL program). Since the control group and the experimental group were very similar in age, gender, grade level, and school, one can conclude that the increase in SEL score was not due to chance or maturation, but the implementation of the Top 20 SEL program. One does not improve in their SEL skills due to maturation alone (Lerner, 2006). Exposure to different social contexts and social interactions helps the child acquire a new skill (Lerner, 2006). For the second hypothesis, the post-test SEL scores were significantly higher than the pre-test SEL scores for the experimental group or Top 20 SEL program. Children learn by mimicking and continuously learn from experience (Lerner, 2006). Hence experience and practice in SEL skills is more likely to lead to an increase in SEL as demonstrated with the experimental group or those exposed to the Top 20 SEL program.

The descriptive analysis on pre and post-test mean scores and mean score differences provided additional information on how each competency influenced a child and adolescent's social emotional development. The results showed that all social emotional competencies increased from pre-test to post-test for those participating in the Top 20 SEL program. Specifically, the results reveal the importance of the social emotional competency, self-awareness. Self-awareness had a pre-test mean score of ($M = 41.1$) and a post-test mean score of ($M = 50.3$) for the experimental group. Since this competency improved the most ($M = 9.1$), it supports the idea that self-awareness may serve as the foundation for all other social emotional competencies. Students may have had to master this competency first and improve on their skill development before they can make improvements to any other competency. If we do not have adequate self-knowledge, then it may be difficult to acquire other skills that rely on self-improvement.

Previous research supports the understanding on how self-awareness can serve as the foundation to all social emotional competencies. Self-awareness has led to improvements in self-management, decision-making, and stress management (Hackston, 2019). This competency has helped the individual self-monitor and examine the self to effectively change one's thoughts and behaviors (Carver & Scheier, 1981; Silvia & O'Brien, 2004). Self-awareness has led to reflective appraisal and perspective taking (Morin, 2004). The individual not only learns about the self, but how to understand another's perspective (Morin, 2004). Therefore, self-awareness is important

for the improvement of several social emotional competencies (e.g., self-management, social awareness, decision-making etc.) and the overall development of SEL. Hence one must improve in their own self-knowledge before they can manage their thoughts, feelings, and behaviors (i.e., self-management), understand another's perspective (i.e., social awareness), cooperate with others (i.e., relationship skills), take personal responsibility for their actions, participate in effective decision-making, achieve the goals they have set for themselves, and develop a more optimistic mindset.

Participants exposed to the Top 20 SEL curriculum were provided with an opportunity to master their skills with direct experience and practice. Role-playing exercises and modeling allowed the participants in the program to observe and imitate prosocial behaviors and overcome the challenges they faced. This program also provided an emphasis on cognitive processes. Participants in the Top 20 SEL program were able to observe a model, learn a specific "chunk" of behavior, and mentally link it together with other chunks to form a new behavior pattern (Martorell et al., 2014). This supports the previous research on how SEL skills can be conceptualized as metacognitive skills (Srinivasan, 2019). Therefore, SEL should not be seen as a non-cognitive skill, but a metacognitive skill to rectify problems (Flavell, 1979) and process information correctly (Revlín, 2013).

4.1 Recommendations for Practice

Previous research has demonstrated the benefits of an SEL program. Positive outcomes include the ability to self-regulate, have empathy for another, engage in effective decision-making (Durlak et al., 2015), exhibit cognitive gains (Nolan et al., 2014; Bird & Sultmann, 2010), and improve one's academic performance (Diekstra, 2008; Durlak et al., 2011; Durlak et al., 2015; Wilson et al., 2006). All students have been shown to benefit from a universal prevention program within the school (Muratori et al., 2019). This universal approach shows promise in reducing a child's behavioral aggression (MacArthur et al., 2018), emotional problems, and peer problems (Muratori et al., 2019). Hence a universal, primary prevention program is necessary given all the positive outcomes students can benefit from.

The present study has also found a variety of positive outcomes. Students participating in the Top 20 SEL curriculum improved in each social emotional competency (i.e., self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior). Students were able to recognize and manage their emotions, thoughts, values, and behaviors, understand the perspective of another, showcase effective relationship skills, take responsibility for their actions, participate in effective decision-making and problem-solving, demonstrate an optimistic mindset, and engage in goal-directed behavior. Since the Top 20 SEL program led to a variety of positive outcomes, more schools should invest in a more universal, primary prevention program.

Schools should also provide real-world practice for their students. As students learn social, emotional, and behavioral skills, it is important that they get the opportunity to apply these skills in actual situations (CASEL, 2013; Durlak et al., 2010; Durlak et al., 2011; LeBuffe, 2014; Srinivasan, 2019). Educators should not only allow each student to practice their SEL skills, but employ a variety of instructional strategies from Bandura's (1977) social learning theory (e.g., modeling, coaching, and behavioral rehearsal). SEL should be incorporated into the school's curriculum with the additional content they are learning in the classroom. SEL could be incorporated into a variety of classroom assignments and activities. This may include a writing assignment (e.g., a gratitude letter), or a classroom activity that concentrates on teamwork and decision-making. Students could also participate in several role-plays that incorporate a variety of communication skills and critical thinking skills. SEL skills or metacognitive skills could help a child learn and grow inside and outside the classroom and be successful in life.

There is a lack of formally adopted SEL programs with daily SEL instruction and several programs have failed to provide the appropriate training to personnel (Bear et al., 2017). SEL interventions do not work if they are not adopted and fully utilized in the classroom (Webster-Stratton & Herman, 2010). Hence, students should also have the opportunity to participate in an SEL program that has well defined goals, explicit guidelines, thorough training for all personnel, quality control, and feedback with consistent staffing (Weare & Nind, 2011). School-based SEL programs such as the Top 20 SEL program provide these opportunities to students and personnel. The Top 20 SEL program also provides the training necessary to ensure that all students are given the proper instruction from several trained SEL instructors. Schools should not only train instructors in how to teach SEL, but incorporate a more holistic curriculum focused on SEL. Hence a more authentic school-wide approach is necessary (Devaney et al., 2006; Greenberg et al., 2003; Zins et al., 2004; Yang et al., 2018) in order to master each social emotional competency.

4.2 Recommendations for Future Research

Primary prevention is the prevention of a disease before it develops (Doll et al., 2010). More research should investigate the benefits of a primary prevention SEL program and the social emotional competencies of self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior. Since a primary prevention SEL program may lead to a reduction in emotional problems (Muratori et al., 2019) or psychological dysfunction, future researchers should move away from a disease model and concentrate on an SEL program that offers prevention and the ability to practice a variety of SEL skills. Hence researchers should continue to study the Top 20 SEL program and any other SEL curriculum that concentrates on the areas of positive psychology and positive education. Since the Top 20 SEL program was able to demonstrate efficacy and an increase in the total SEL score with the use of instructional strategies from Bandura's (1977) social learning theory, more research should focus on the benefits of vicarious learning (e.g., modeling, coaching, and behavioral rehearsal) and how these strategies impact the students ability to learn. By studying the benefits of vicarious learning, researchers and teachers should be able to understand how to implement an authentic primary prevention SEL program in a variety of schools and grade levels.

Researchers should continue to investigate the Top 20 SEL program. Researchers could implement the Top 20 SEL program for the entire school year (i.e., September to June) and explore the efficacy of the program and potential long-term benefits. Given a moderate effect size of $d = 0.77$ was found after approximately 5 months of SEL training, it is likely that a large effect size of .80 or higher would be found after approximately 10 months of SEL training. After the Top 20 SEL program has been implemented for approximately 10 months, researchers should measure the total SEL score and see if there is a significant increase in SEL. If a significant increase in SEL is found, these results would demonstrate the efficacy of the program and provide evidence that the program is successful in the ability to teach SEL skills to children and adolescents at the school. Researchers could also explore the additional factors of academic performance (i.e., grades) and prosocial behaviors inside and outside the classroom. SEL programs have led to an increase in prosocial behavior (Schonert-Reichl et al., 2015; Durlak et al., 2011; Durlak et al., 2015), academic success (Sklad et al., 2012; Fleming et al., 2005; Wentzel, 1993; Durlak et al., 2011; DiPerna et al., 2005; Zins et al., 2004), and successful peer relationships (Dobia et al., 2019; Dodge & Price, 1994; Nowicki & Duke, 1994). SEL programs have also demonstrated an 11-percentile-point gain in achievement and significant improvements to a child and adolescent's social and emotional skills, attitudes, and behavior (Durlak et al., 2011). Therefore, future researchers may also find an increase in academic performance and more prosocial behaviors inside and outside the classroom.

Previous research has found SEL programs to lead to several long-term benefits (Durlak et al., 2015). Social emotional competencies taught in these programs have led to improvements in mental health (Hawkins et al., 2008; Panayiotou et al., 2019), family and work relationships, college and career readiness, engaged citizenship, and a decrease in criminal behavioral (Hawkins et al., 2008). Future researchers should investigate the program's effectiveness or what the beneficial effects would be to the "real world." Researchers could observe how students use these SEL skills outside the school and see if these skills have any impact on their future success in life. This additional research could show how a primary prevention program is a necessity in the school.

Previous research has shown that higher dosages (i.e., number of SEL lessons the student receives in an intervention) produce more desired results (e.g., Connell et al., 1985). Higher dosages can lead to healthier behaviors (Story et al., 2000), fewer negative student outcomes (Aber et al., 1998) and unexcused absences (Moskowitz et al., 1982). Future researchers should explore this previous research and how much of a "dose" a student should receive for a Tier 1 universal intervention. In addition to an SEL curriculum incorporated into the school, teachers and school personnel should have a better understanding on how many SEL lessons each student should receive. Researchers should explore each SEL lesson, how the lessons are incorporated into the curriculum, how much time is provided for each lesson, and how many lessons are offered to each student. Researchers should explore these factors on dosage and determine what the best approach would be for an SEL program that focuses on primary prevention.

5. Conclusions

There is a lack of primary prevention programs that develop SEL skills within the schools (see Greenberg et al., 2003; White & Murray, 2015; Eklund et al., 2018; LaBelle, 2019; Sklad et al., 2012). Few states have adopted a freestanding, comprehensive program with SEL standards (Eklund et al., 2018) and too many programs have become a succession of fragmented fads with little sustainability, direction, or impact (Shriver & Weissberg, 1996). Instead of implementing an authentic school-based primary prevention program, many schools have chosen to implement a disease model that concentrates on the deficits of the child (Durlak et al., 2015) and treat a problem

after it has been identified (LaBelle, 2019). With an absence of a primary prevention program that concentrates on SEL, schools have reported problems with lower academic achievement and truancy, and more disciplinary referrals and dropout rates (Greenberg et al., 2003).

To address the lack of primary prevention programs that develop SEL skills within the schools, this researcher investigated the efficacy of the Top 20 SEL program and how this primary prevention program impacted a child and adolescent's social emotional learning. The study took place in a public middle school in the state of Minnesota from August 2019 to January 2020. The study consisted of a quasi-experimental design where students were assigned to an experimental group or control group, a homeroom class, and sixth-grade homeroom teacher. The experimental group consisted of 170 students and the control group consisted of 189 students. A total of 359 middle school students participated in the study. Two middle school teachers at the school helped embed and teach the Top 20 SEL curriculum and monthly SEL lessons to all students in the experimental group. Homeroom teachers completed the DESSA pre-test one month into the study and the DESSA post-test five months later. After the data was entered by all sixth-grade homeroom teachers, it was sent to this researcher to be analyzed. To evaluate the efficacy of the Top 20 SEL program, this researcher performed an independent-samples t-test, paired-samples t-test, and Cohen's d . The results reported an increase in SEL for those in the Top 20 SEL program and a moderate effect size of $d = 0.77$. To examine the growth trends for all social emotional competencies, this researcher also examined the mean scores and standard deviations for all eight social emotional competencies (i.e., self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior). The descriptive analysis revealed an increase in all eight social emotional competencies in the experimental group with a total SEL difference score of $M = 8.23$. Overall, the results demonstrated the efficacy of the Top 20 SEL program and how this program was able to increase SEL.

With an increase in SEL, the results support the need for a school-based primary prevention program that helps children and adolescents develop SEL skills within the schools. The results also support the understanding that students should be allowed to practice and apply all SEL skills in a variety of situations. Participants exposed to the Top 20 SEL curriculum were provided an opportunity to practice and master all SEL skills using the instructional strategies from Bandura's (1977) social learning theory. Students were taught all eight competencies using verbal instruction (coaching), behavioral rehearsal, performance feedback, and social problem-solving. This demonstrates the importance of vicarious learning given those exposed to this type of learning, made improvements to their total SEL score. This also provided teachers, administrators, and staff a better understanding of what type of instructional strategies are best to teach the different social emotional competencies and how self-awareness might be the foundation for all other competencies.

In addition to an increase in SEL, previous research has shown how an authentic SEL program can lead to several short-term benefits (e.g., an increase in prosocial behaviors, and academic performance) (Durlak et al., 2011; Durlak et al., 2015), and long-term benefits (e.g., career readiness and an increase in high school graduation rates) (Hawkins et al., 2008). Hence, school administrators should invest in a more primary prevention SEL program that encourages a more strength-based approach to learning. If school administrators concentrate on all eight competencies (i.e., self-awareness, self-management, social awareness, relationship skills, personal responsibility, decision-making, optimistic thinking, and goal-directed behavior) and implemented a more authentic primary prevention SEL program, students could exhibit more cognitive gains and improvements to their overall mental health and well-being.

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