of emotions in situations considered to elicit emotional reactions [6], [20], [12].

The items belong to one of two subscales: *Emotion Regulation* or *Lability/Negativity*. The former subscale has 8 items and addresses empathy and emotional understanding (e.g. Is a cheerful child). A score ranging from 8 to 32 reveals superior emotion regulation and emotion expressiveness. Two items are reverse scored. The latter scale has 15 items and captures emotional intensity [20], [12]. In this scale, a score from 15 to 60 implies more emotional dysregulation and negative affect and inflexibility. Four items are reverse scored [20]. The measure has a high internal consistency on the *Emotion Regulation* (α = 0.83) subscale and on the *Lability/Negativity* subscale (α = 0.96). There is a significant negative correlation between both subscales (r = - 0.50) [12].

4.3. Procedure

The primary investigator (first author) began by volunteering in the chosen classrooms for two months prior to obtaining ethics approval to form a bond with the children. Following ethics approval, consent forms were sent to the parents of students selected for the study. Once parental consent was obtained, to ascertain child assent, each child was asked if he or she would like to take part in an activity.

To monitor students' social and emotional development throughout the course of the program, four classroom teachers completed the *Taxonomy of Problem Situations for Children* (kindergarten and first grade students only) [10] or the *Preschool Taxonomy of Problem Situations* (pre-kindergarten students only) [11] to measure social competencies and the *Emotion Regulation Checklist* (all grade levels) [12] to assess emotional competencies. The classroom teachers were chosen because they knew the students well and the scores accurately reflected students' development. A fifth resource teacher completed the measures for eight participants at pretest to establish interrater reliability, which was evaluated using the Pearson correlational coefficient. Significant associations between teacher ratings were revealed. Coefficients ranged from r = 0.65 to 0.81 on subscale measures of emotion competency and r = 1 for both measures of social competencies. The measures were gathered at baseline in the first week of April. Measurements were gathered again upon completion of the program in June. A Wilcoxon paired test was performed to address the research question. The teachers were blind to the purpose of the study.

The intervention occurred in four classrooms for 30 to 45 minutes each on a weekly basis. The primary investigator assisted the teacher and students in the chosen classrooms for an additional six to eight hours per week to apply the social and emotional techniques and skills in more natural settings. In June, the students were compensated for their participation with toys. Teachers were also compensated for their help. A short summary was provided for two parents who asked for information on the activities and findings.

5. Results

Preliminary analyses were conducted. The values for skewness and kurtosis for each distribution are illustrated in Table 1.

Table 1. Values of skewness and kurtosis

	Skewness	Kurtosis
Distribution of differences		
PTOPS	-0.341	-1.844
TOPS	-0.001	-1.155
ERC (*Emotion reg.*)	-0.140	1.222
ERC *(Lability/Negativity*)	0.168	0.413

The mean and standard deviation for all three measures of social and emotional competencies have been reported in Table 2 and Table 3. The aim was to highlight the childrens' social and emotional levels prior to the intervention to better assess the effectiveness of the program upon completion. Measures of social competency from the *Preschool Taxonomy of Problem Situations* [11] and the *Taxonomy of Problematic Social Situations for Children* [10] were in the mid range and considered to be reflective of poorer social development at both pretest and posttest.

Higher scores on the *Emotion Regulation* subscale of the *Emotion Regulation Checklist* indicate a greater aptness for emotional expressiveness [20], [12]. Pretest and posttest measurements from this subscale fell into the mid range.

Table 2. PTOPS/TOPS scores for children at pre and post

	Pretest	Posttest
Grade levels	x̄ *(SD)*	x̄ *(SD)*
Pre-K (*n*= 5) *PTOPS*	161.8 (21.2)	168.4 (21.6)
Kind. (*n*= 12) *TOPS*	63.3 (12.8)	77.1 (18.9)
Gr. 1 (*n* = 5) *TOPS*	80.8 (20.7)	75.2 (22.6)

However, higher scores on the *Lability/Negativity* subscale are indicative of inflexibility and mood lability. Pretest and posttest measurements also fell into the mid range. In both cases, mean scores from baseline to post seem to show greater emotional regulation and less lability and negativity, respectively. See Table 3 for the subscale scores according to grade level.

Table 3. ERC subscales scores for children at pre and post

	Pretest	Posttest
Grade levels	x̄ *(SD)*	x̄ *(SD)*
Pre-K (*n* = 5) *Emotion reg.* *Lability/Negativity*	20.6 (4.8) 32.2 (3.9)	23.6 (2.2) 29.8 (4.8)
Kinder. (*n* = 12) *Emotion reg.* *Lability/Negativity*	21.7 (3.3) 24.8 (4.0)	22.3 (4.5) 24.8 (5.3)
Gr. 1 (*n* = 5) *Emotion reg.* *Lability/Negativity*	22.0 (3.6) 28.4 (5.9)	24.2 (3.6) 27.8 (4.4)

A Wilcoxon paired test was conducted, largely due to the small sample size to examine whether each grade level improved from pretest to posttest on measures of social and emotional competencies. An alpha level of 0.05 was used as a threshold for statistical significance.

Results from the Wilcoxon test showed that there was a significant effect of the program on *Emotion Regulation* subscale scores of the

Emotion Regulation Checklist in Grade 1 students, $p = 0.039$. A significant effect of the program on the *Taxonomy of Problematic Social Situations for Children* scores was also found in kindergarten students, $p = 0.010$.

Results also showed that pre-kindergarten students did not significantly improve from pre to post on TOPS scores, $p = 0.336$, nor on the ERC for both the E*motion Regulation* subscale, $p = 0.144$, and the *Lability/Negativity* subscale, $p = 0.066$. The same applies to the kindergarten group for the *Emotion Regulation* subscale, $p = 0.589$ and the *Lability/Negativity* subscale, $p = 0.822$. The first grade *Lability/Negativity* subscale scores, $p = 0.684$ and the TOPS scores, $p = 0.175$ also did not differ.

6. Discussion

The aim of this study was to assess the effectiveness of a school intervention program in improving the social and emotional skills of young children with speech and language exceptionalities. Elevated scores on all measures at baseline were expected given that the children were selected on the basis of displaying the greatest need for social and emotional learning. At baseline and upon completion of the program, scores on the *Preschool Taxonomy of Problem Situations* [11] and the *Taxonomy of Problematic Social Situations for Children* [10] fell into the moderate range and are cause for concern. These scores supported the argument that communication exceptionalities are linked to less-developed social and emotional competencies [6], [14], [2], [3]. Kindergarten students' scores on the *Taxonomy of Problematic Social Situations for Children* [10] significantly worsened from pretest to posttest which is likely attributable to measurement error, specifically recall bias. One of the kindergarten teachers was away at the end of the school year, and was unable to submit her scores until four months after the end of the program.

All grade levels displayed a large variability in scores on the *Preschool Taxonomy of Problem Situations* [11] and the *Taxonomy of Problematic Social Situations for Children* [10] as seen from the large standard deviations across time. These values serve to highlight the importance of differentiated instruction. While each lesson was adapted for each grade level, some children may have benefitted from further adaptions in the teaching of the skills and concepts.

It was surprising to see that the pre-kindergarten, kindergarten and first grade students displayed an average pretest score that was better than expected on the *Emotion Regulation* subscale and the *Lability/Negativity* subscale of the *Emotion Regulation Checklist*

[12]. With regards to this checklist, it is important to note that individual scores improved slightly from baseline to the end of the program for all grade levels; however, a significant effect of the program on *Emotion Regulation* subscale scores was only found in first grade students.

As a whole, these findings can lead to several conclusions. First, the teaching of the program may have been better at fostering emotional development over social development. Second, increasing the teaching frequency to several times per week would give the children more time to practice and generalize the concepts. Last, children with special needs are especially vulnerable and benefit from direct and consistent instruction. Three months is a short period of time to expect to see a pronounced improvement in both social and emotional learning.

There were a couple of limitations. First, no multimethod or multisource assessments were used to examine social and emotional learning at various timepoints, which may affect the reliability and validity of the results. Additional measures, such as Gresham and Elliot's *Social Skills Improvement System* (SSIS) were initially considered for teachers and parents. The SSIS was deemed to be less applicable to the sample of participants and too time-consuming for teachers to have to complete more than two test measures. Moreover, it was decided that a host of extraneous factors would have to be accounted for if program effectiveness was measured in both home and school contexts. A second limitation was the lack of a control group, which would have provided a point of comparison to assess program effectiveness in improving social-emotional development. Given the restricted timeframe and specific school population, a control group was beyond the scope of this research. Development is monitored at two different times and interrater agreement was incorporated to enhance the reliability and validity of the scientific design.

There were several advantages to the current study. Contrary to prior studies [18], [6], skills and concepts were taught to all the students in each grade level at one time. Also, the measures chosen were indicators of difficulties or successes in specific social and emotional scenarios as opposed to global assessments [11], [10], [12]. Lastly, as pointed out by Suveg and colleagues, the most effective and well-designed programs are developmentally focused [8]. For this reason, the language and activities in Cartledge and Kleefeld's program [9] was adapted to ensure that the students learned and applied the material.

This project yields theoretical, clinical and practice importance for the area of child development and education since it is the only known study to adapt a program to teach social-emotional competencies to preschool and early school-age children with expressive and receptive language issues. Most children with these issues benefit from the explicit teaching of skills to nurture healthy social and emotional growth through the adaptation and/or development of programs in schools [15], [6], [13], [14], [16], [2]. As an extension to the project, future researchers should run the program for longer to better ascertain effectiveness. It would also be beneficial to conduct follow-up measures six weeks or several months after the program to determine if learning is stable and generalized across multiple contexts.

It is recommended that school psychologists, teachers, educators and speech-language pathologists recognize and address the concerns that often accompany children with speech and language exceptionalities [16], [5], [3]. Through the creation of developmental and age appropriate programs, our knowledge and allocation of resources to the field is advanced.

7. Acknowledgements

A huge thank you to my supervisors, the teachers, principal, rehabilitation staff, and my family and friends for their advice, expertise, support, patience and encouragement throughout.

To the children: Their eagerness to learn and positive energy brightened up my day. This project is dedicated to them.

8. References

[1] M. Fujiki, B. Brinton, and D. Clarke., "Emotion Regulation in Children with Specific Language Impairment", *Language, Speech, and Hearing Services in Schools*, American Speech-Language-Hearing Association, United States, 2002, pp. 102-111.

[2] L. Rescorla, G. Ross. and S. McClure, "Language Delay and Behavioral/Emotion Problems in Toddles: Findings from Two Developmental Clinics", *Journal of Speech, Language, and Hearing Research*, American Speech-Language-Hearing Association, United States, 2007, pp. 1063-1078.

[3] K. Thatcher, K. Fletcher, and B. Decker, "Communications Disorders in the School: Perspectives on Academic and Social Success an Introduction", *Psychology in the Schools,* Wiley Periodicals Inc, New Jersey, 2008, pp. 579-581.

[4] C. Adams, "Social Communication Intervention for School-Age Children: Rationale and Description", *Seminars in Speech and Language,* Thieme, New York, 2005, pp. 181-188.

[5] C. Adams, E. Lockton, J. Freed, J. Gaile, G. Earl, K. McBean, M. Nash, J. Green, A. Vail, and J. Law, "The Social Communication Intervention Project: A Randomized Controlled Trial of the Effectiveness of Speech and Language Therapy for School-Age Children who have Pragmatic and Social Communication Problems With or Without Autism Spectrum Disorder", *International Journal of Language and Communication,* John Wiley and Sons, New Jersey, 2012, pp. 233-244.

[6] T. Stanton-Chapman, and T. Brown, "A Strategy to Increase the Social Interactions of a 3-Year-Old Children with Disabilities in an Inclusive Classroom, *Topics in Early Childhood Special Education,* SAGE Publications, New York, 2015, pp. 4-14.

[7] T. Stanton-Chapman, C. Denning, and K. Jamison, "Communication Skill Building in Young Children with and without Disabilities in a Preschool Classroom", *The Journal of Special Education,* SAGE Publications, New York, 2012, pp. 78-93.

[8] C. Suveg, M. Southam-Gerow, K. Goodman, and P. Kendall, "The Role of Emotion Theory and Research in Child Therapy Development", *Clinical Psychology: Science and Practice,* John Wiley and Sons, New Jersey, 2007, pp. 358-371.

[9] G. Cartledge, and J. Kleefeld, *Taking Part: Introducing Social Skills to Children*, Research Press Inc, Illinois, 2009.

[10] K.A. Dodge, C.L. McClaskey, and E. Feldman, "Taxonomy of Problematic Social Situations for Children", Duke University,https://childandfamily policy.duke.edu/pdfs/TOPS-Taxonomy-of-Problematic-Social-Situations-for-Children.pdf, 1985.

[11] M. Blankemeyer, R. Culp, L. Hubbs-Tait, and A. Culp, "A Tool for Identifying Preschoolers' Deficits in Social Competence: The Preschool Taxonomy of Problem Situations", *Education and Treatment of*

Children, West Virginia University Press, West Virginia, 2002, pp. 208-223.

[12] A. Shields, and D. Cicchetti, "Emotion Regulation Checklist", Ohio University, https://etd.ohiolink.edu/.

[13] M. Hunter-Carsch, Y. Tiknaz, P. Cooper, and R. Sage, *The Handbook of Social, Emotional and Behavioural Difficulties,* Continuum International Publishing Group, United Kingdom, 2006.

[14] G. Malar, N. Sreedevi, and C.B. Suresh, "Trends and Impact of Early Intervention for Communication Disorders at AIISH", *Journal of the All India Institute of Speech and Hearing,* All India Institute of Speech and Hearing, India, 2013, pp. 173-183.

[15] N. Humphrey, *Social and Emotional Learning a Critical Appraisal*, SAGE Publications, London, 2013.

[16] P. McCabe, and M. Altamura, "Empirically Valid Strategies to Improve Social and Emotional Competence of Preschool Children", *Psychology in the Schools,* Wiley Periodicals Inc, New Jersey, 2011, pp. 513-540.

[17] G. Macklem, *Practitioner's Guide to Emotion Regulation in School-Aged Children*, Springer International Publishing, New York, 2008.

[18] T. Stanton-Chapman, C. Denning, and K. Jamison, "Exploring the Effects of a Social Communication Intervention for Improving Requests and Word Diversity in Preschoolers with Disabilities", *Psychology in the Schools,* Wiley Periodicals Inc, New Jersey, 2008, pp. 644-664.

[19] H. Guglielmo, and G. Tryon, "Social Skill Training in an Integrated Preschool Program", *School Psychology Quarterly*,American Psychological Association, Washington, 2001, pp. 158-175.

[20] C. Lincoln, "Mother-child interactions and emotion regulation in preschool children, University of Connecticut, http://digitalcommons.uconn.edu.

